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ABSTRACT

This report describes how governments throughout the world manage their economies and interact with their people, with special emphasis on how the agricultural sector is affected by changing government goals, policies, and programs. Policies and programs are described using information as of July 1987. The large country policy statements include descriptions of the economy and the agricultural sector, a statement of policy goals, a discussion of agricultural programs, and a qualitative assessment of agricultural programs. For smaller producing or trading countries, each country statement was abbreviated. Countries with a 1985 population under 100,000 are not included. Each of the 157 country statements plus one statement on other Caribbean States, provides information about key economic indicators and the macroeconomic linkages to agriculture. The statements also describe recent trends in key agricultural indicators and relate the agricultural sector to key commodities produced and traded. Policy goals are discussed in terms of broad government objectives as stated explicitly in development plan documents or implicitly in government actions. Agricultural programs are viewed in terms of their effects on resource allocation and use, product distribution, prices, and trade. Interventions in domestic agriculture and trade are described. Many statements include lists of references. Regional summaries are given for East Asia, Eastern Europe, Latin America and the Caribbean, the Middle East, North Africa, Oceania, South Asia, Southeast Asia, Sub-Saharan Africa, and Western Europe. (KC)

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ABSTRACT

An Economic Research Service program identifies the types of government policy intervention used by the United States and foreign governments and measures the levels of protection provided to the agricultural sector. Intervention includes both domestic and external measures. This report reviews general economic policy goals and agricultural programs for each country.

Keywords: Government policy, Intervention, Subsidy, Taxes, Agricultural programs, Agricultural policies, Macro-economic policies, Protection.

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PREFACE

The U.S. Department of Agriculture (USDA) has published other reports on government policies. These include analyses of policies before World War II published in Agricultural Price-Supporting Measures in Foreign Countries, FS-56, Bureau of Agricultural Economics, 1932, and "Foreign Agricultural Policies--A Review and Appraisal," Foreign Agriculture, 1938. The U.S. Senate also published a report World Trade Barriers in Relation to American Agriculture, Senate Doc. No. 70, 73rd Congress, 1st Session, 1933. After World War II, policies of foreign governments were described in USDA's Agricultural Market and Price Policies in Foreign Countries, FAER-74, Foreign Agricultural Service, 1953, and Agricultural Policies in Foreign Governments--Including Trade Policies Affecting Agriculture, AH-132, Foreign Agricultural Service, 1957. A revised AH-132 was published in 1964. Other USDA regional policy reports since 1964 include Agricultural Policies in the Western Hemisphere, FAER-36, 1967, Agricultural Policies in the Far East and Oceania, FAER-37, 1967, Agricultural Policies in Europe and the Soviet Union, FAER-46, 1968, and Agricultural Policies in Africa and West Asia, FAER-49, 1968.

This report describes policies and programs using information as of July 1987. The large country policy statements include descriptions of the economy and the agricultural sector, a statement of policy goals, a discussion of agricultural programs, and a qualitative assessment of agricultural programs. For smaller producing or trading countries, each country statement was abbreviated. Countries with a 1985 population under 100,000 are not included.

Each country statement provides information about key economic indicators and the macroeconomic linkages to agriculture. The statements also describe recent trends in key agricultural indicators and relate the agricultural sector to key commodities produced and traded. Policy goals (import substitution, self-sufficiency, export expansion, low or stable food prices, secure food supplies, producer incomes) are discussed in terms of broad government objectives as stated explicitly in development plan documents or implicitly in government actions. Agricultural programs are viewed in terms of their effects on resource allocation and use, product distribution, prices, and trade. Interventions in domestic agriculture and trade are described. These programs include domestic programs and border measures, such as transportation and other output subsidies, research, extension, price and income supports, production and trade quotas and indirect producer and macro-policy instruments, and other direct and indirect producer and consumer subsidies resulting from domestic and trade intervention.

Many statements include a list of references. However, other general references from international organizations such as the World Bank, Food and Agriculture Organization of the United Nations, the International Monetary Fund, World Factbook (1985) published by the Central Intelligence Agency, and Foreign Agricultural Service annual attache reports, were used extensively. The American University series on Foreign Area Studies provided useful materials. Other general references include articles on centrally planned agriculture authored by persons in government and academia and published in the volumes prepared for the Joint Economic Committee (JEC) of the U.S. Congress. In 1985, the JEC issued China's Economy Looks Toward The Year 2000; in 1986, East European Economies: Slow Growth in the 1980's; and in 1987, Gorbachev's Economic Plans. Estimates of aggregate protection levels have been published in a USDA report entitled Government Intervention in Agriculture--Measurement, Evaluation, and Implications for Trade Negotiations, FAER-229, Economic Research Service, April 1987. The results were presented in terms of producer and consumer equivalents; that is, revenues required to compensate producers of consumers if existing government programs were eliminated.

ACKNOWLEDGMENTS

These country statements of policies were prepared by country analysts in the Economic Research Service. The report was coordinated by a committee composed of the following: Cheryl Christensen, William Coyle, Ken Gray, Michael Kurtzig, John Link, Carl Mabbs-Zeno, and Gene Mathia, Chairperson. James Sayre served as the editor. Helen Joyner and Camelia Spence typed various drafts of the manuscript.

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Global Review of Agricultural Policies

INTRODUCTION

Gene A. Mathia

This report describes how governments manage their economies and interact with their people, with special emphasis on how the agricultural sector is affected by changing government goals, policies, and programs. Government influence or intervention varies by type of government, but few economies, if any, are free of government influence. The levels of influence range from the extreme cases of the totalitarian state where economic activities can be centrally planned to the anarchic state where no organized governments have the power to regulate economic activity. Few countries have elected to tolerate situations at either end of the extremes for very long. However, the acceptable level of government intervention is a frequently debated political issue, the results of which have important economic consequences.

The agricultural sectors of most countries are subject to frequent government influence which directly or indirectly affects individual decisions regarding resource use and product distribution. Resource and product values are also affected by government decisions and actions. A frequently mentioned concern is that many government policy/program instruments devised to achieve goals work at cross-purposes. In fact, many programs are initiated to offset the adverse effects of previously instituted programs. Many examples can be cited of governments establishing programs to stimulate the individual decisionmaker to respond in a particular manner and then creating other programs which will evoke the opposite response. Examples are high support prices, acreage controls, or marketing quotas intended to raise producer incomes, and export subsidies intended to lower export prices for the same products.

There are several reasons government intervention in agriculture is common in many countries. First, the agricultural sector is the dominant sector in many countries, especially in Third World countries. Second, secure and safe food supplies available to the public at attainable prices are essential to stable governments and political processes. Third, the rural/farm block is usually very powerful politically and united for some common objectives (minimum levels of income, maintenance of rural life styles, and the family farm, for example). Fourth, many governments follow similar methods of taxing and making income and resource transfers. Also, the demand for most agricultural products is relatively price inelastic, which yields high price variability when supplies fluctuate. Many programs are implemented to provide producer and/or consumer protection from price variability. Often, prices established by government are rationalized by authorities to prevent wide price fluctuations.

Government Policy Objectives

The study of government policy goals for the agricultural sector provides information required to classify and compare policy goals and performance levels. The type of economy/form of government and the stage of agricultural development are important considerations in establishing agricultural policy goals. For example, in the industrialized world with large and productive agricultural sectors (United States, Canada, Australia, and the European Community), the dominant agricultural policy goals are to protect the level and stability of farm incomes and asset values and maintain the rural life style. The list of programs to achieve the general farm income and asset value goal is long and varies by country. But there seems to be common use of price support programs, export expansion and input subsidies, and especially subsidized credit. Some use is made of import substitution programs, trade barriers, and domestic supply management. The United States has frequently used supply management, not as a policy goal, but as a tool to help solve a surplus problem created by other programs. Most industrialized countries have extensive public research, extension programs, food health regulations, grades and standards, and environmental protection standards, among others. Some government involvement in marketing of selected products occurs in most countries but very little use is made of direct government buying and selling in the domestic market. Considerable government involvement is observed in the international marketing of selected commodities through marketing boards and government trading offices.

For the industrialized countries with limited production capacity and large import needs (Japan, Taiwan, South Korea), the dominant policy goal is the protection of farm incomes through high price supports made possible by the use of trade barriers. Because of their limited capacities, and food security concerns, many countries select one or two basic staple food commodities to protect and/or promote. Rice commonly serves this purpose. However, intervention in the international market may be more common than intervention in domestic production and marketing.

In most developing countries, a common policy objective is to promote production increases to reach self-sufficiency levels. Import substitution probably receives more attention than export expansion. For the several middle-income developing countries with large agricultural sectors (such as Argentina and Brazil), exports of agricultural products are very important because they earn foreign exchange and generate government revenue. In many developing countries with little likelihood of reaching self-sufficiency, programs of import substitution for selected products are common although scarce resources may be misallocated. Input subsidies are more frequently used than income and price support programs. Government buying and selling operations are common, but are used more to subsidize consumers than to subsidize producers. Other consumer subsidies and import policies to assure adequate supplies at controlled, consumer-acceptable price levels are common forms of government intervention. Government involvement in quality control, health, and agricultural research is not very great. Many countries have extensive extension and credit programs.

The industrial centrally planned countries follow rigid product pricing practices designed to assure stable and low food prices. Rather than offering extension services, these governments frequently require farmers to practice specific production techniques and allocate the farm inputs needed for these plans. At this point in the development of their agricultural sectors, most centrally planned countries strive for self-sufficiency in agricultural production. But, many depend on the international markets for imports of both inputs and products. Government performs much of the domestic marketing and almost all the international marketing. In most centrally planned countries, there is expanding opportunity for individual decisionmaking on private production plots with sales going to the government or through private shops. Little government revenue is allocated to basic agricultural research and quality control. Excessive political control of agricultural sciences has reduced the payoff of state investment in these areas.

Policy and Program Assessment

Public choice of the policy goals and programs used to achieve goals depends on the type of government, stage of economic and political development, relationship of the agricultural sector within the total economy, and the relationship of the domestic economy to the world economy. Within the agricultural sector, the policies and programs used to achieve public goals also depend on the natural resources, technology, and production and marketing systems commonly used in agriculture.

Some countries in this report are presented as single country cases; that is, United States, Canada, and China. Other countries were grouped primarily on a geographic basis. The groupings are: Latin America and the Caribbean, Eastern Europe and the USSR, Sub-Saharan Africa, Western Europe, North Africa, Middle East, South Asia, Southeast Asia, Oceania, and East Asia. But, the following discussion uses a different classification--that of economic level/type of government--to review policy and program effectiveness.

Industrialized Market Economies

These countries are represented by governments in which public choice is determined by democratically elected officials and many, if not most, economic decisions are made by private entrepreneurs. Most resource allocation and product distribution decisions depend on the operation of a private enterprise marketing system; that is, prices and trade are determined by the interaction of market supply and demand. Countries/country groupings usually considered developed industrialized include the European Community (EC), United States, Canada, Australia, Japan, South Korea, Taiwan, and New Zealand.

Although the importance of agriculture in these countries varies greatly, all governments express concern about the well-being of the sector and its farmers. The EC and the United States explicitly express concern for farm income. The level of farm income is an important economic consideration of agricultural policy in the other industrialized countries. The level and stability of farm asset values, the survival of the family farm, and maintaining export shares are also key concerns of these governments.

The types of programs used by such governments range from domestic program instruments to trade or foreign programs. But, few programs can be implemented in these countries without affecting the agricultural sectors of other countries. In most cases, these countries are major traders of agricultural commodities, and in some cases, inputs. The EC countries operate under a common agricultural program (CAP). The CAP uses a system of price management that maintains market prices within a small band of desired target prices. Domestic prices are protected from fluctuations in the international market by establishing minimum import prices, intervention purchases of surpluses, and export subsidies.

The United States uses a wide range of programs to support agriculture such as price and income supports for some commodities, acreage reduction programs, conservation reserves, commodity certificates, export quotas, and export enhancement.

Canada and Australia use marketing and transportation programs which provide both price and income support, supply management, and input subsidies. Wide use of collective action is made by commodity marketing boards and statutory authorities. The rail system in Canada is highly regulated, resulting in large subsidies for western grain and oilseed exports.

Japan, South Korea, and Taiwan have taken measures to expand food supplies by administering high price supports and strict border restraints. These governments have also endeavored to improve farm productivity through research and various land and rural development programs. Japan strives to maintain a healthy dietary pattern through promotion or expansion of the supplies of rice, wheat for Japanese noodles, food-quality soybeans, and fish.

All of these industrialized countries have relatively productive agricultural sectors. With the possible exceptions of Japan, South Korea, and Taiwan which have limited resource endowments relative to population levels, all countries have the capacity to feed their people and export selected farm products. Producers are generally considered well paid for their farming activities and consumers are well fed at relatively low retail prices (with a few exceptions, like sugar for U.S. consumers and rice for Japanese consumers).

However, the budgetary costs of these governments' involvement in the agricultural sectors of their respective countries have been great. Misallocations of resources have occurred between the agricultural and nonagricultural sectors and within the agricultural sector which have sometimes created large surpluses of subsidized products. Trade in farm commodities for these countries has been essential. All countries except Japan, South Korea, and Taiwan have depended on exports to maintain domestic farm programs at acceptable levels. Of course, Japan has depended heavily on these countries for imports, but used trade measures to protect domestic producers of selected products from international competition. The importance of the international markets underlies the current concern about the need for trade liberalization. Both domestic and trade programs are coming under close international scrutiny and negotiation.

Developing Countries

Developing countries include a wide range of income levels, from high in the Middle East to extremely low in Sub-Saharan Africa. Agricultural sectors are at varying levels of development but are generally large components of the total economy. The industrial sectors of most of these countries are in the early to middevelopment stages.

An important policy concern of these countries relates to becoming self-sufficient in food by increasing output and production efficiency. The provision of minimum food supplies at prices affordable by the masses is a key to economic and political stability of developing country governments. As these countries move to food self-sufficiency, interest turns to international markets. But these countries usually strive to minimize imports through import substitution rather than free market export expansion. Many of these countries, even during their early agricultural development, have one or two major export crops such as sugar, coffee, tea, or cocoa. Few, with the exception of Argentina and Brazil, regularly produce significant amounts of feed grains and cereals for export sales.

The basic government intervention measures of developing countries are input subsidies, particularly for credit and fertilizer, and price controls. Governments also intervene in providing many inputs and services, and require sales to government agencies of major staple products. Much government intervention results in the net taxation of agriculture, such as in Sub-Saharan agriculture which shows a pattern of net support for consumption (low, subsidized consumer prices) and net taxation of production. The more frequently observed mechanisms of intervention on the international trade side, have been government trading monopolies, trade barriers, regulation of foreign investment, and restrictive foreign currency regulations. Governments sometimes exercise control over resource use, varying from allocation of production inputs to land reform measures and cropping pattern decisions. Many countries limit the size of farms. Some countries, such as Egypt, require area allocation to specific crops, usually export crops to earn foreign exchange. Some Latin American governments require certain amounts of land be used for food crop output. Government stores and cooperatives are commonly used to help implement food prices and consumer subsidy programs.

Evaluating agricultural policies and programs in developing nonindustrialized countries is difficult. Many are not moving much closer to food self-sufficiency, but government intervention is only one possible explanation for that failure. Other reasons may be the lack of technological progress, unfavorable climate, and limited resource endowment. Few observers question the important role of government policies on maintaining low consumer and producer prices in deterring progress toward self-sufficiency. Furthermore, the operating costs of maintaining government programs in most countries are great and divert funds from investments in production agriculture to financing current consumption. Some programs have been successful in reaching selected goals. For example, government programs to stimulate the adoption of the "green revolution package" have successfully raised yields and output of some crops in Asia, Latin America, and parts of Africa. There is little doubt that input subsidies, although costly, have affected output levels and production decisions. Often, the infrastructure required to distribute inputs is limited to that controlled by the government. And price supports and input subsidies can outlive their usefulness once they have achieved their intended purpose.

Centrally Planned Countries

The USSR and its Eastern European partners, as well as Mongolia and China, have centralized planning of a large number of production and marketing systems. There is direct government determination of domestic production and marketing targets, import and export quantities, and allocation of farm inputs. There are obligatory targets for the area under specific crops, numbers of livestock, the nutrient mix of fertilizers, and other areas. Collectivization of agriculture assured the state deliveries of farm products during an earlier period of forced industrialization, but they are less effective in more modern economies.

There has been some relaxation of control at the central level. Increased farmer initiative and efficiency have received more emphasis as the central planning role has been reduced and the importance of financial markets has increased. Privatization of resources is being seriously considered in selected countries and surpluses over target production can be sold on the private markets.

Centrally planned countries, striving to improve the diets of their people, have opened their domestic markets to imports. Yet, foreign agricultural trade is still dominated by state monopolies.

China turned radically away from collective farming in 1979 by disbanding communes and establishing the responsibility system. The main goals of China's government are to improve living standards, sustain growth in agriculture, and increase industrial production of consumer and export commodities. Programs recently imposed to improve rural incomes include a significant upward adjustment of government procurement prices of grains and livestock products, enlargement of private plots, and resumption of rural trade or free markets. The government has also relaxed regional self-sufficiency requirements to permit farmers to exploit comparative advantages and specialize in more profitable crop and livestock enterprises.

Although government control has been relaxed and institutional changes are underway, prices are still set administratively or controlled by the central government. Nevertheless, China has made impressive advances. Labor productivity has advanced with the rapid development of rural industries which provided markets for excess farm labor. Farmer incomes have increased sharply. Peasants have invested heavily in housing, farm equipment, and hand-guided tractors. Recent success with open markets has encouraged the government to announce its intentions to eventually eliminate the procurement system.

Success in reaching policy goals in the USSR and Eastern European countries is not as evident as in China. Recent changes in the Soviet-type farm systems and attempts to decentralize decisionmaking have undergone many reversals. The level of central planning is still high and technological improvements and increased efficiencies in production, marketing, and trade are difficult to appraise.

CANADA

Carol A. Goodloe

Agriculture is a small sector relative to the total Canadian economy. However, agriculture is very important in western Canada, where most of the crop and much of the livestock production occurs. Here, the dominant crop is wheat, followed by barley and rapeseed. Cattle production is also an important farm enterprise. Dairy and hog productions are the main farm activities in eastern Canada.

Canadian agriculture is highly regulated. Marketing boards play an important role in controlling production and setting prices for the major grains, dairy, poultry, and eggs. Government policy goals include supporting farm income and maintaining adequate supplies for domestic use and export.

Canada is a major agricultural exporter. Agricultural exports account for about 10 percent of total exports and in recent years have contributed about half of Canada's trade surplus.

Canada is a major competitor with the United States in world grain and oilseed markets, but the two countries are also major customers for each other's farm products.

The Economy

Canada, although a small country with only 25 million people, is the seventh largest market economy in the world. Canada has an open economy. The trade sector contributes about a fifth of GNP. The Canadian economy is highly integrated with that of the United States; three-fourths of Canada's trade is with the United States. Canada has a large natural resource sector--forestry, fishing, and mining as well as agriculture--but manufacturing is also important.

Canada is a parliamentary democracy with two main political parties, the Liberals and the Conservatives. There are 10 provinces. Canada is a member of the British Commonwealth and has traditionally had strong cultural and political ties to the United Kingdom, although the economic ties have diminished since the United Kingdom joined the EC. Canada has a mixed economy. The government, regardless of the party in power, has played a major role in the economy as a provider of goods and services.

The Agricultural Sector

The agricultural sector is only a small part of the total Canadian economy, contributing less than 5 percent of GNP. Only 4 percent of the population live and work on farms. This percentage, however, varies greatly by province, from only 2 percent in the Maritimes to almost 20 percent in Saskatchewan. Both the farm population and the number of farms have been declining since World War II.

Canada's cropland is small relative to the nation's total size. Only 4 percent of area is devoted to crops, with an additional 2 percent in meadows and pastures. Most crops are grown in the western prairie provinces. Crop alternatives here are limited by a short growing season, little precipitation, and long harsh winters. Drought is a frequent event, most recently in 1980, 1984, and 1985.

Although Canada is a small producer relative to world output, it is a major agricultural exporter. Agricultural exports account for about 10 percent of Canada's total exports and in recent years have contributed about half of the trade surplus.

Wheat, barley, and rapeseed are the most important crops in terms of both cash and export receipts. Canada has been the world's second leading wheat exporter over the past decade, although it averaged only 5 percent of world wheat production. Canada's role in world production and export of coarse grains and oilseeds is less significant. Barley is the most important coarse grain produced and exported. But over the past decade, corn production in eastern Canada has been increasing at a faster rate.

Livestock production is also important, accounting for half the value of Canada's farm output. Cattle and dairy are the two largest sectors. Poultry and dairy are regulated by supply management systems that attempt to limit production to domestic requirements. Pork exports are significant, equaling about a fourth of production in recent years. Canada both imports and exports beef. Most of the red meat trade is with the United States. Poultry and dairy trade is regulated by supply management systems that control production and limit imports.

Canada's cold climate means many agricultural products cannot be produced. Major imports are fruits, vegetables, tropical products, rice, and cotton, equaling about half of Canada's total agricultural imports. For many of these products, imports equal three-quarters or more of domestic consumption. The United States is the main agricultural supplier.

Policy Goals

Canada, along with most other developed market economies, tries to maintain steady economic growth, high employment, and low inflation. As a country highly dependent on trade, Canada is a supporter of the General Agreement on Tariffs and Trade (GATT) and its goals of a more open world trading environment. Because its economy is so closely intertwined with that of the United States, Canada must balance its interest and exchange rate policy with U.S. policy. Canada usually keeps its interest rates slightly above U.S. rates to prevent capital from moving south and pressuring the Canadian dollar.

With a change in government in 1984 came a shift in economic priorities, with more emphasis on encouraging the private sector while reducing the role of the government in the economy. This shift reflects the poor economic performance of the late 1970's and early 1980's: severe recession, high unemployment and interest rates, and a weak currency. The government is also seeking closer economic ties with the United States and, to that end, initiated discussions with the United States in 1985 to establish freer trade between the two countries.

Canadian agricultural policy goals include maintaining adequate food supplies for domestic needs and exports, supporting farm income, and preserving the family farm structure. Policy measures in the 1980's have aimed to address various problems in the farm sector: the poor financial condition of many farmers, excess production capacity, and increased export competition.

Policy goals vary by commodity, depending on whether the sector is oriented toward the export or the domestic market. The major exports--grains, oilseeds, and livestock products--are priced to move in world markets and receive moderate government support. Canada is a strong supporter of the new GATT round and would like to see increased competition in world markets through a reduction in export subsidies. On the other hand, policies for those sectors that are designed to serve only the domestic market, notably dairy and poultry, limit competition through fixed prices and import quotas. In addition, the provinces have considerable powers in formulating agricultural policy. Provincial policies of self-sufficiency have sometimes conflicted with national goals.

Agricultural Programs

Canada has a wide array of programs and institutions for agricultural commodities. Programs tend to be focused on specific commodity groups, such as grains and oilseeds, red meats, and dairy and poultry. Programs cover areas such as marketing and transportation, price and income support, supply management, and credit and inputs. The objective of many programs is to stabilize prices or income.

Marketing boards cover a wide range of commodities, from apples to wool. Over 100 such agencies account for about half of Canada's farm sales. Because the regulation of Canadian agriculture is a shared federal-provincial responsibility, all but five of the boards are provincial. The federal boards regulate wheat, barley, and oats grown in the prairie provinces, and dairy products, chicken, turkey, and eggs on a national basis. These boards function as state monopolies, controlling the production, pricing, and marketing of these commodities.

The Canadian Wheat Board (CWB) is the largest (in terms of the value of sales) and most influential marketing board. As the only legal exporter of western-grown wheat, barley, and oats, it is a major player in world grain trade. The CWB regulates producer deliveries through quotas, sets prices to producers, and controls access to the grain handling system.

The dairy and poultry sectors are strictly regulated by supply management systems that control production by quotas and set prices based on cost of production formulas. Imports are regulated by quotas and licensing requirements. Surplus dairy products are exported at subsidized prices, which are financed through producer levies.

Price and income stabilization programs are important components of Canadian agriculture. The western grain stabilization program (WGSP) provides cash flow support for western grain and oilseed producers. The agricultural stabilization act (ASA) provides price support for certain commodities: wool, corn, soybeans, industrial milk and cream, and wheat, oats, and barley outside CWB-designated areas. Other commodities, mainly horticultural products, can also be designated for support. In 1986, a voluntary tripartite program was begun for cattle, hogs, and lambs, replacing the previous ASA support. Under this program, the federal government, provincial governments, and producers contribute equally to a fund that makes payments to producers when market prices fall below established support prices.

The rail system is highly regulated and subsidized for western grain and oilseed exports. Transportation subsidies are the largest single federal expenditure on agriculture. Major expenditures include a subsidy on rail freight rates paid to the railroads, payments for branch line rehabilitation, and hopper car purchases and boxcar repairs. In 1984, the first significant change in many years was made to rail freight rates. The old "Crow rates," set in 1898, were raised. A fixed subsidy is now paid to the railroads.

Other government programs primarily benefit grain and oilseed farmers. A joint federal-provincial program provides subsidized crop insurance. Two other programs provide cash advances to producers of storable crops in the form of interest-free loans. Other programs provide drought assistance to livestock farmers, fuel tax rebates, and credit assistance. In addition, provincial governments offer numerous programs covering many commodities.

Agricultural Program Evaluation

Subsidized rail freight rates on grains and oilseeds for export have been the most significant policy measure affecting production patterns in western Canada. Subsidized rates mean farmers have received a higher farmgate price for their crops than if railrates were fully competitive. Production of grains and oilseeds for export has been encouraged at the expense of domestic feed use and processing to the disadvantage of the livestock and crushing industries. On the other hand, the low rates during the 1970's contributed to a deterioration in the grain transportation network, and actually worked to reduce exports. Recent increases in rates are designed to improve the rail network and remove some of the distortions caused by the old Crow rates.

The supply-managed commodities--dairy and poultry--are insulated from world competition through high support prices and restrictive border measures. The system of production quotas has led to substantial value accruing to quota holders. Quota costs have become capitalized in the value of land and inputs, raising entry costs for new farmers and costs of production. Although one objective of the dairy and poultry programs has been to maintain the family farm, the supply management programs have not been able to prevent the consolidation of farms into larger and larger units.

The dairy program has been able to prevent large surpluses of dairy products from accumulating, but at a large cost to consumers and taxpayers. In addition, the dumping of surplus products on world markets has contributed to instability in world dairy trade. The poultry and egg programs have also been costly to consumers and taxpayers. Poultry imports have actually increased since the imposition of supply management.

The stabilization programs have had little effect on resource allocation. Payments under these programs have usually been small, with large payments occurring sporadically. However, WGSP payments have been growing in this period of low prices, thus helping to keep some farmers financially viable. Provincial programs have likely contributed to increased output of some commodities, an example of which is pork.

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CHINA

Francis C. Tuan

China's agriculture, producing mainly rice, wheat, corn, pork, and vegetables to feed over 1 billion people, has made impressive progress in raising output levels as well as productivity. Recent rural reforms are largely responsible. The reforms, implemented since the end of 1978, have been very effective and the repercussions have conformed with long-term policy goals of China's agricultural sector. The primary goal has been to raise per capita production and living standards. Although the value of agricultural output in 1985 increased 3.5-fold over that of 1952, the contribution of agricultural production in recent years declined to about 28 percent of China's annual total output value of society (consisting of agriculture, industry, construction, transportation, and commerce), compared with 45 percent in 1952. The recent agricultural reforms have dramatically increased China's ability to feed and cloth its people and even temporarily enabled it to become to a net grain exporter in 1985 and 1986. However, China, with the world's biggest population and limited opportunity to expand arable land, is expected to gradually become a major U.S. overseas farm market.

The Economy

China has been ruled by the Chinese communist party since 1949. The country's economy, largely modeled on the Soviet Union's centrally planned system through the end of the 1970's, has been vitalized because reforms have reduced rigid government control. The economy is heading toward a more market-oriented system and making impressive progress.

Per capita GNP, roughly $300 as estimated by the state statistical bureau, is similar to that of many other developing countries. However, for about 30 years, China had high savings rates and heavy investment in the industrial sector. Over the same time period, agricultural production was tightly controlled by the central government, as in industry, through rigid planning. Agricultural productivity grew little because of inferior rural structure, poor managerial decisions, and misallocation of scarce agricultural inputs such as arable land and capital. In addition, China faces bottlenecks in other sectors such as energy and transportation.

A series of readjustments have recently been implemented to restructure industrial and agricultural sectors and to deal with inflation. The inflation was caused by price reforms and other economic programs such as subsidies on crop procurement and elimination of government fixed prices of livestock products. Relatively slow growth of the economy and its GNP is expected for the next several years given the problems and readjustments.

Despite a slowdown in the pace of reforms because of readjustment and recent disputes on reform validity raised by antireformers, the party seems to be determined to continue overall economic reforms and to maintain an open-door policy to the rest of the world.

The Agricultural Sector

China's has one of the largest agricultural sectors in the world. The sector employs 312 million laborers, 62.5 percent of the total labor force, to produce mainly rice, wheat, corn, pork, and vegetables.

Growth of agricultural production was generally slow over a long period of time prior to recent reforms. Eight years after the reforms were implemented, annual grain output increased 28 percent over the 1978 level. Wheat production grew 65 percent. Total meat production rose nearly 140 percent over the same period. China is now the biggest grain producer in the world and its red meat output ranks second behind the United States. The increases in grain output have helped China shift from a net grain importer to be a net exporter during the last 2 years. China's agriculture currently contributes about 41 percent to national income, almost as much as the industrial sector.

Policy Goals

Goals of China's economy have been to raise per capita production and living standards, maintain sustained growth to become an industrial country, and provide political security for the country.

China first emphasized and invested heavily in industrial development, creating a comprehensive heavy industry unusual for a country at China's stage of development. Industry is now the largest sector of the economy. Nevertheless, rapid development of industry was costly. Living standards rose very slowly and poor planning and lack of incentives led to large-scale waste of resources and only limited productivity growth.

China's priorities have changed sharply in the last 8 years. Policy now favors raising living standards and stresses expansion of agriculture and industrial production of consumer and export commodities. This new direction conflicts with the existing structure of industry and therefore changes have been made during the last several years. The major changes include:

- Sharp cuts in the government budget and cancellation of major construction projects, particularly in heavy industry.

- Closing of many small plants, particularly those that are inefficient users of energy and scarce raw materials.

- A much lower rate of investment and a major shift of investment toward light and export industries.

- A slowdown in growth of foreign trade, particularly in commitments for purchase of large plants, consumer goods, and agricultural products.

In the 1950's and early 1960's, agricultural policies had two dimensions: promoting both a socialist and a technical transformation of agriculture. The socialist transformation refers to strengthening state and collective forms of ownership and gradually moving agriculture toward a system of nationally owned state farms, equivalent to industrial firms. Technical transformation involves ongoing infusion of modern technology and supplies of modern inputs. Both were viewed as essential to the sustained growth of farm production and living standards. During the cultural revolution (1966-76), government policies stressed self-sufficiency, grain production, use of farm labor in capital construction projects, nonmaterial incentives, and rigid central planning. Relatively large emphasis was placed on the socialist transformation.

Policies implemented in the last 8 years emphasized regional crop specialization, more balanced growth among agricultural subsectors, greater investment in science and technology, more reliance on material incentives, and less direct central control. Furthermore, the commune system has been dismantled. Under these policies, emphasis has shifted to the technical side of agricultural development in order to raise agricultural productivity and efficiency. Expansion of rural markets, emphasis on individual self-interest and higher incomes, and limits on the role of the collectives are part of a temporary downgrading of the socialist transformation of agriculture. The latter likely remains as a long-range policy of the leadership.

Agricultural products have long been an important part of China's exports. China has historically been a net exporter of farm commodities. Major farm exports include rice, live animals and animal products, fruits and vegetables, and a variety of specialty products such as tea and spices. China's agricultural imports have been limited to a narrow range of products. For a period of time, three items--grain, cotton, and sugar--accounted for the largest share of purchases, particularly in the early 1980's. While agricultural imports were up in the early 1980's, China never made a full commitment to their continued growth. Larger grain imports were used to support urban consumption, freeing greater amounts of grain to support areas shifting acreage from grain to cash crops. The government appears to view rising farm imports as a threat to the growth of industrial and technology imports. Long-range agricultural plans have also put a high priority on development of farming areas which will market the surplus portion of their grain output. China hopes that this will increase government supplies and hold down growth of grain imports.

Agricultural Programs

Numerous measures have been imposed in the past 8 years to increase rural income, agricultural output, and marketing of farm products. Programs imposed to expand rural income include a significant upward adjustment of government procurement prices in 1979 for grains and livestock products, enlargement of private plots in poor areas in 1981, and resumption of rural trade markets (previously known as free markets). These programs have stimulated farmers' enthusiasm to produce more. Rural income, as a result, has risen sharply. After dismantling the commune system at the end of 1984, the central government reduced the quantity of goods purchased through the state procurement system in the following year. Farm households now sell output to government and in local markets. Grain, oilseeds, and livestock products are available from rural trade markets all over the country.

To increase the food supply, the government has relaxed its regional self-sufficiency policy to allow farmers to specialize in crop growing and livestock raising activities. The policy was supported initially by government programs guaranteeing grain rations to farm households which, for example, specialize in cotton production. This program together with others, such as granting fixed-price fertilizer as bonus, providing subsidized feed grains to farmers who sell live animals to the government, and lifting fixed prices on livestock products, have raised farmers' incentive to increase agricultural production.

Starting in 1979, the Chinese government embarked on a revolutionary program to reorganize farm production units and change rural institutions to revitalize the rural economy. The program included disbanding the commune system and instituting a contract system in which farm households could make economic decisions and allocate resources to raise output, reduce costs, and maximize income. Output and income have risen sharply.

Before reforms started, there were only a few regular marketing programs, including a government procurement and rationing system, to facilitate movement of farm products. Following progress in agricultural production, particularly in 1982-84, China began introducing various programs to support marketing not only within the country, but also to international markets. Private transport of agricultural products is now permitted between provinces. Food processing and feed manufacturing have also been encouraged by the government.

In the early 1980's, China imported grains, oilseeds, and cotton after signing trade agreements with several countries. These imports helped China initiate reforms in rural areas. For example, the increase in grain imports provided food to urban areas, leaving more grain to feed the rural areas as farmers increasingly specialized in cash crop and livestock production. After a series of bumper harvest years, especially since 1985, the government has facilitated exports of corn, oilseed, cotton, and other crops to help earn foreign exchange.

The increased grain output in 1983 and 1984 also triggered China's ambitious feed production plans and livestock sector development programs. China sought to buy equipment and technology to produce more and better feed. China has also signed animal quarantine procedures with several countries to import quality breeding animals.

Agricultural Program Evaluation

China's agriculture is in transition from an economy run administratively to one in which market forces play increasingly important roles. Before recent reforms were implemented, increases in overall agricultural production barely kept up with population growth.

Higher yields have generated almost all of the growth in production of grain crops for the last 8 years. Total cultivated area continued to decline. Yield increases for wheat, rice, and coarse grains were rapid, largely because of greater and more efficient use of inputs such as chemical fertilizer, improved varieties, better farm management, and more specialization. These changes have basically resulted from the new policies, programs, and measures.

Rising farm production and higher income have led to major changes in the level and composition of goods. Per capita grain consumption continues to increase. Also, the amount of rice and wheat consumption, indicating quality of diet, has increased more than 60 percent since 1978.

Total oilseed output has been rapidly growing in the last 8 years although growth leveled off in the last 2 years because of a planned decline in cottonseed output. Per capita availabilities of edible vegetable oil doubled in the last couple years, compared with 1978. As incomes rise, urban and even some rural consumers are shifting their preference from animal fat to vegetable oils. However, with about 40 percent of total oilseed output entering commercial channels, much of China's oilseed product is consumed in urban areas. The government annually provides urban residents 6 kilograms of vegetable oil at a subsidized price.

Cotton production has been a typical case in the development of China's agricultural sector since reforms were imposed. Before 1982, China imported huge quantities of cotton to meet the rapid growth of its textile industry. Since 1983, China has become a net cotton exporter and competes with the United States in the Asian markets. Pricing programs have played an important role in this change. The pricing programs were also effective when China deliberately lowered the level of procurement prices. Cotton output declined sharply in the last 2 years. Other cash crop production, including fruits and vegetables, also grew significantly because of increases in procurement prices in the last few years.

Livestock product consumption also grew, although per capita availabilities are still low compared with world averages. Pork output has contributed most of the increases in recent years despite poultry, eggs, and milk output growing rapidly in the last 3 years. Growth of livestock products will largely depend upon the availability of domestic grain supplies.

Labor productivity has impressively advanced, particularly because rapid development of rural industries helped to rural labor force to leave farming activities. Per capita net income of farmers also increased over twofold since reforms started. Peasants have invested heavily in housing, farm equipment such as small tools, and hand-guided tractors.

Agricultural commodities marketed through rural trade markets have steadily increased in volume and in quality. More leaner meat, grain, fruits, and vegetables are now readily available in the markets because farmers are enthusiastic about rural trade. They anticipate more cash income.

Agricultural production will proceed at a slower pace than in the early 1980's. The largest part of the positive effect of new policies, particularly of the responsibility system, has already taken place and the growth of input supplies, particularly good quality fertilizer and other chemicals, will be much slower. Opportunities for shifting area from grains to cash crops appear to be largely exhausted. Arable area has continuously declined in the last 8 years because of nonfarm use. A number of specific problems currently face China's leaders, including marketing, planning and management, land use, energy, and infrastructure.

Marketing System

The government announced its intention to eventually eliminate the procurement system. Other measures which prevent farm households from marketing their produce outside their own jurisdictions and in other provinces will also be eliminated. While institutional changes are underway, farm prices are still administratively set or controlled by the government. There is not a good way to accurately estimate the effect on production because of price and policy changes. China has a rising interest in studying the U.S. agricultural marketing system and price support programs.

Planning and Management

While the government still maintains certain control through China's decentralized planning system, it now must rely more on the price adjustments and other indirect levers of control to guide lower level decisions to increase agricultural production. How to reform agricultural prices and to use price support programs, subject to government budgetary constraint, are important questions for the government as it modernizes the agricultural sector. How to relate agricultural planning at the central government level with the management decisions made at the farm level will be critical to China's agricultural development.

Land Use

Large amounts of farmland, much of it of high quality, have been lost over the past 30 years to urban and industrial uses. Opportunities for land reclamation are limited and high costs make it increasingly uneconomical. The nearly accomplished land zoning and planning programs and other means of reducing loss of quality agricultural land are critical to China's agricultural production.

Energy Shortage

Crop residues used for heating and cooking mean that nutrients are removed from the soil. The search for fuel has also accelerated deforestation, increasing soil erosion and the threat of floods. Growing mechanization has also added a new dimension to rural energy problems as supplies of electrical power and diesel fuel are frequently short.

Infrastructure

The lack of transportation capacity to move agricultural commodities has become an important concern of the country, particularly after agricultural production increased sharply. In addition, storage capacity and ability to process agricultural products have also been limited. Transportation problems have been a major reason that China started exporting grains in the north in the last couple of years while importing grains in the south. Given continuous agricultural development and regional specialization, China needs to vigorously invest in development of its infrastructure to alleviate transfer, storage, and processing problems.

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REGIONAL SUMMARY OF EAST ASIA

Lois Caplan

East Asia comprises Japan, the newly industrializing nations of Taiwan and South Korea, the territories of Hong Kong and Macao (both scheduled to revert to Chinese control in the late 1990's), and North Korea. Densely populated with scarce land and natural resources, most of these markets rely heavily on imports of raw materials and agricultural products, while exporting mostly manufactured goods. Agriculture contributes a very small or diminishing share of the region's economies.

In contrast, centrally planned North Korea stresses economic self-sufficiency, limiting dependence on trade, by devoting a large share of the nation's resources to the agricultural sector.

East Asia is an important market for many U.S. agricultural products, mainly bulk commodities such as feed grains, soybeans, tobacco, and cotton. The United States has sent an increasing share of its total farm exports to the region (about 30 percent in the mid-1980's).

The East Asian economies experienced generally high growth over the last decade, except in 1985 when exports slowed and in 1986 when Japan's economy was hurt by the strong yen. The region enjoys high per capita incomes compared with other Asian countries. While the free ports of Hong Kong and Macao are known for their easy trade policies, the other East Asian countries have adopted more restrictive trade regimes, including tariffs, quotas, and various nontariff barriers. Japan's huge trade surplus of $52 billion with the United States in 1986 and the growing bilateral trade surpluses of Taiwan and South Korea have brought forth calls to liberalize their currency markets and to make faster progress in opening their markets.

Except for North Korea, with its large cooperative and state farms, agriculture in the East Asian countries is mainly private and small scale. Farmers in Japan and Taiwan obtain a large share of their income from nonfarm sources. Rice is the predominant crop, although fruits, vegetables, and other crops are widely cultivated. The region's livestock sectors have expanded rapidly over the last two decades, requiring large quantities of mostly imported feed grains and oilseeds. Agricultural production in Hong Kong and Macao is very small, as the territories import nearly all of their food requirements, mostly from China. Although East Asian diets are based on rice, fish, fruits, and vegetables, they have become increasingly diversified with growing amounts of eggs, dairy products, and meats.

Agricultural policies in the post-World War II era in East Asian countries centered on securing stable food supplies, increasing food self-sufficiency, and maintaining stable or low food prices. During the 1960's, policies shifted to increasing farmer productivity and incomes in order to help keep resources in agriculture in the face of rapid growth in the nonagricultural sectors. As world agricultural markets became increasingly unstable during the 1970's and 1980's, food security again became an important policy issue in Japan. Other policy goals there include maintaining the traditional "Japanese diet," realizing higher farm productivity, and protecting natural resources and the integrity of rural villages.

The governments of Japan, South Korea, and Taiwan have attempted to carry out their policy goals largely through intervention in domestic agricultural markets and through restrictive border measures. The governments are heavily involved in the procurement and marketing of food grains such as rice, wheat, and barley. While generally controlled less strictly, feed grains are restricted by import quotas, tariffs, and group purchases in Taiwan. Other agricultural programs include post-war land reforms, agricultural research and extension, land resource development and improvement, irrigation projects, and rural infrastructure development.

Self-sufficiency in agricultural products has generally not been achieved in East Asia, although high levels of self-sufficiency have been obtained for some commodities. Japan's overall food self-sufficiency rate has fallen, despite increased protection levels for important commodities like rice and beef. Expanding livestock sectors have made the region more dependent on imported feed grains and soybeans, as domestic feed and forage supplies are limited. High administered rice prices in Japan, Taiwan, and South Korea have promoted production, discouraged consumption, and caused surpluses in Japan and Taiwan since the late 1970's. To reduce surpluses, Japan and Taiwan initiated expensive riceland diversion programs and surplus disposal programs (subsidizing rice exports and using rice in animal feed).

Agricultural productivity has increased substantially in Taiwan and South Korea over the last several decades. Japan's farm productivity has not increased significantly since the mid-1970's, although it has kept up with gains in the nonfarm sector, helping to keep resources in agriculture. Some farm sectors in the region are more efficient than others. Examples include poultry and citrus production in Japan and pork production in Taiwan. Price stabilization measures have probably caused consumer prices to be higher than they would be without government intervention.

Excluding Hong Kong and Macao, agriculture in the East Asian countries remains heavily protected, despite sometimes substantial trade liberalization measures over the years. Because of strong government commitments to the farm sectors for social and political reasons, liberalization of agricultural markets in these countries is likely to be very gradual.

HONG KONG

Lois A. Caplan

Under the Sino-British Joint Declaration, ratified in May 1985, British sovereignty over Hong Kong will be transferred to the People's Republic of China in 1997. As a special administrative region, Hong Kong will be allowed a high degree of autonomy, except in foreign affairs and defense. China has promised that the colony can maintain its capitalistic economy and open lifestyle for 50 years after 1997. The Hong Kong economy, now worth over $35 billion, grew at a rapid pace during 1975-84, slowed to less than 1 percent in 1985, and expanded by 9 percent in 1986.

Hong Kong has become a leading manufacturing and financial center through its free enterprise and free trade policies, an industrious workforce, a sophisticated financial infrastructure, a modern and efficient seaport, and an excellent worldwide communications network. Exports are extremely important to Hong Kong's economy, amounting to 112 percent of GDP in 1986. The manufacturing sector still accounts for the largest share of the economy, although it has declined in importance. Clothing is the dominant industry, and other important industries include electronics, watches and clocks, textiles, metal products, and toys. Agriculture's contribution to the economy is less than 1 percent.

Hong Kong is one of the most densely populated areas in the world, with a population of 5.5 million living on 404 square miles. Only 9 percent of the area is arable. Major crops are vegetables, flowers, fruit, and other field crops, valued at $56 million in 1986. Rice production has given way to intensive vegetable cultivation, which is more profitable. Hong Kong supports a small livestock industry, principally poultry and pig raising, and some dairy farming.

Hong Kong must import 90-95 percent of its food and agricultural raw materials. Agricultural imports amounted to $3.6 billion in 1985. The United States is the second largest supplier of agricultural products to the colony, after China. Major imports include live animals and meat products, cotton, rice, wheat, coarse grains, and citrus fruit. Major agricultural exports and re-exports include fish products, fruit, vegetable preparations, and crude animal and vegetable materials.

The Hong Kong government generally favors a free trade policy. The government imposes specific duties on tobacco and cigarettes and alcoholic and nonalcoholic beverages. There are no tariff barriers or direct subsidies to producers. The major agricultural policy goal is to promote the social and economic advancement of primary producers through increased technical and economic efficiency, improved stability of production, and maintenance of orderly and efficient marketing.

Other policy goals include protecting consumers from high food prices by efficiently marketing local produce and maintaining a secure supply of fresh fish products. The agriculture and fisheries department promotes and regulates producer associations and oversees the orderly marketing of farm produce through such groups as the vegetable and fish marketing organizations.

Although very small, local farm production has contributed significantly toward meeting domestic demand for fresh foodstuffs and has a stabilizing effect on imported food prices. The Hong Kong government has emphasized a healthy food supply and a clean environment. Recent government initiatives in this area include banning the sale of poultry growth-stimulating hormones and the sale of fish, meat, and poultry containing synthetic hormones; stringent antipollution measures which affect livestock-producers; and a vigorous antismoking campaign.

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JAPAN

Bill Coyle

Japan's agriculture, centered on rice, livestock products, and vegetables, is declining in its importance to the country's economy despite highly protectionist agricultural policies. Productivity growth in other sectors of the world's second largest market economy has put adjustment pressure on its agriculture, requiring increasing levels of protection to prevent the movement of resources from agriculture. Despite these efforts, Japan's agricultural self-sufficiency declined from about 75 percent in 1960 to 45 percent in 1985. Japan is the world's largest net importer of farm products and by far the largest U.S. overseas farm market.

The Economy

Japan's economy is the third largest in the world, after the United States and the Soviet Union. It has a parliamentary form of government, headed by the liberal democratic party (LDP) since 1955. The longevity of the LDP, which derives much of its support from organized business and agricultural interests, has been an important source of national stability.

Japan's economic growth averaged about 9 percent a year during 1952-73. These high growth rates have been explained by gains derived from a large and highly educated workforce, low tax rates because of limited defense and social security expenditures, access to an open trading system and low-cost Western technologies, a high savings rate, and businesses' orientation toward long-term growth rather than short-term profit because of greater reliance on deficit rather than equity financing.

During the 1970's, several international shocks slowed Japan's economic growth. Greatly increased oil prices in 1973 led to rapid inflation and GNP decline in 1974. Competition from nations such as Korea and Taiwan threatened basic industries such as steel and textiles, and more recently, consumer electronics, automobiles, and high technology. Since 1975, annual real growth averaged less than 5 percent. Since the late 1970's, Japan's economic growth has largely resulted from expanding exports, rather than increasing domestic demand.

Japan's recently growing trade surpluses with some of its most powerful trading partners have led to trade friction and protectionist measures in those countries. During the 1980's, Japan emerged as a major exporter of capital as a result of a leveling off of domestic private investment and continued high savings rates. The strengthening yen in the mid-1980's stiffened competition for Japan's export- and import-competing industries, drawing attention to the nation's need to rely more heavily on domestic demand for growth.

The Agricultural Sector

Agriculture, centering on rice, livestock products, and vegetables, is one of Japan's most highly protected sectors. Nevertheless, Japan is the largest net importer of agricultural products in the world, accounting for about 9 percent of total world farm trade. Japan's dependence on commodity and other raw material imports arises from its comparative advantage in manufacturing and disadvantage in primary production. Japanese agricultural policies have reduced the tendency for Japanese agricultural resources to shift into more efficient sectors by protecting Japanese farmers from international competition. Protection levels since the late 1950's and early 1960's rose for important commodities like rice and beef. While protection slowed the decline in the country's agricultural self-sufficiency, the rate still dropped from 75 percent in 1960 to about 45 percent in 1985, one of the lowest levels among developed countries. Japanese agriculture contributes only 3 percent to national income.

Policy Goals

Current Japanese agricultural policy does not differ fundamentally from that of past post-war decades. The government treats agriculture as a special industry with a key role in Japanese cultural and economic life. The concern of the 1960's was to keep land, labor, and capital resources in agriculture despite rapid productivity growth in other sectors of the economyt: the concern of the 1970's and 1980's has been to cope with the instability of world markets. Several factors increased Japan's anxiety about its dependence on trade in general and about securing a stable food supply in particular: the worldwide shortfall in grain production combined with large U.S. grain sales to the USSR in 1972, the U.S. soybean embargo in 1973, the imposition of 200-mile fishing limits by many countries, and the internationalization of the world economy through growth in trade and capital flows. At the same time, Japan's emergence as a wealthy and powerful country drew attention to its closed markets, including its restricted agricultural markets.

In 1980, the agricultural policy council, an advisory group to the prime minister, produced a report titled "On the Implementation of the Basic Direction of Agricultural Policy in the 1980's," an important guide for current Japanese agricultural policy. The interrelated policy objectives expressed in this report include securing a stable food supply, maintaining the Japanese diet (characterized by high grain and fish consumption, low meat and fat intake, and relatively low total caloric consumption), realizing higher farm productivity, and protecting natural resources and the integrity of rural villages. The report states that a secure food supply should be achieved through increasing the country's food self-sufficiency, contributing to stability in world food supply, and continuing to maintain a national food reserve. Today's policy emphasis reflects a shift away from concerns about farm income and back to those of stable food supply and food self-sufficiency which predominated in the 1940's and 1950's.

Agricultural Programs

Measures taken to expand the country's food supply include administering high price supports through the use of strict border measures and improving farm productivity through various government land and rural development programs. The 1952 land law was amended in 1970, 1975, and 1980 to increase the fluidity of land rights and promote larger, more efficient operations. Other measures consisted of trade agreements (such as the Butz-Abe understanding of 1976-78 involving wheat, soybeans, and feed grains, and a multiyear agreement with Australia on sugar signed in 1974) and government support to diversify import supply. The government initiated a program in 1976 to increase government-held barley stocks and to subsidize expansion of privately held corn, sorghum, and soybean stocks. Accumulation of large rice stocks in the late 1970's diminished the urgency of this program. Since Japan is a food deficit country, its food aid contributions are mainly surplus domestic rice or purchased commodities from surplus countries for donation to needy countries.

Maintaining the "Japanese dietary pattern," which the government acknowledges as adequate, distinct, and healthful, is promoted by measures to stabilize or expand supply of rice, wheat for Japanese noodles, food-quality soybeans, and fish.

Japanese agricultural trade policy is used to support its domestic farm policy objectives. High commodity prices are maintained by insulating Japan's agriculture from international competition in a variety of ways. The government's food agency strictly manages rice, wheat, and barley imports. While the number of categories of agricultural commodities restricted by import quotas was reduced quite sharply during the 1960's and early 1970's, 19 categories still remain. They include dairy products, beef, and fresh oranges. Tariffs on bulk commodities are relatively low, while tariffs on fresh and processed fruits and vegetables range up to 30-40 percent. Tariff quotas apply to a number of agricultural items, including corn for industrial uses and barley for feed. Japan's strict quarantine regulations of plants and animals are sometimes considered to restrict imports.

Progress toward liberalizing the Japanese agricultural import market has been mostly confined to high-value and processed products. Japan still imposes import quotas on the same 19 categories that it did 10 years ago, though it has taken measures to eliminate quota restrictions on various, mostly minor products within these categories. The Tokyo Round of multilateral trade negotiations of 1973-79 resulted in reduced Japanese tariffs for more than 150 agricultural items and expanded quotas for beef, oranges, and citrus juice. Since 1979, Japan has implemented a number of additional trade packages involving tariff reductions and other measures aimed at stimulating agricultural product imports. Japan agreed to further expand beef and citrus quotas in understandings reached with the United States (grain-fed beef, oranges, and citrus juice) and Australia (total beef) in 1984. Japan's rice policy emerged as a nettlesome issue in the mid-1980's with the American Rice Miller's Association filing a Section 301 unfair trade practices petition in late 1986 citing Japan's near total ban on rice imports. The U.S. Government rejected the petition but pressured Japan to discuss its rice policy in the Uruguay round of multilateral trade negotiations.

The U.S. Government also entered into discussions with Japan regarding elimination of quota restrictions on 12 of the 19 trade categories still restricted by import quotas. A GATT panel was established in 1987 to resolve the dispute.

Agricultural Program Evaluation

Contemporary Japanese farm policy objectives have generally not been fulfilled. Despite calls for expanded domestic production of crops other than rice, Japan's agricultural output has shown virtually no increase during the 1970's and 1980's. Rice production has declined since peak harvests in 1967 and 1968.

High administered rice prices have encouraged production, discouraged consumption, and caused surpluses. They have also led to three rice land diversion programs (1971-75, 1976-77, and 1978-87) and two surplus disposal programs in the last 15 years. Citrus and vegetable production has shown no increase. Only livestock products have expanded significantly, growing rapidly over the past 25 years.

The increasing importance of livestock products in Japanese agriculture and the lack of domestic feed and forage supplies have made Japan increasingly dependent on coarse grain and oilseed imports.

Output per farmworker has changed little since the mid-1970's. Nevertheless, it has kept pace with the nonagricultural sector, leading to more stability in the use of farmland and labor than during the rapid growth period of the 1960's. Average livestock holdings increased steadily but average farm size remains at only slightly more than 1 hectare.

Although government support prices stabilized in the past several years, the disparity between domestic Japanese prices and world prices widened because of depressed world prices and the sharp increase in the exchange value of the yen during 1985-87. This increasing disparity is particularly noticeable for rice, still accounting for a third of Japan's agricultural output. It is also true of wheat, beef, and dairy products.

Japan does not equally assist all farm products. Some farm activities are more efficient than others. The poultry sector showed relatively high rates of productivity growth and required little border protection. The disparity between internal and world prices for chicken meat has declined steadily since the 1960's. Japanese citrus production is also relatively efficient as reflected in low wholesale prices relative to import prices.

Despite some efficient sectors, Japanese agriculture is generally among the more heavily protected in the world. Several studies show that the welfare costs of its agricultural policies amount to tens of billions of dollars. Protection has hampered two other policy objectives: promoting stability in world agricultural trade and promoting the Japanese diet.

The Japanese often argue that their steady annual imports of large amounts of agricultural products help to stabilize world agricultural markets. But, the highly insulated nature of the Japanese agricultural market means that changes in world prices are not always passed through to Japanese producers and consumers, shifting the adjustment burden from price changes onto world markets. As a result, world commodity prices are lower and more volatile than they otherwise would be.

Instead of promoting the Japanese diet, Japan's policy of high rice prices has probably accelerated the decline in per capita rice consumption. The consumer rice price increased in recent years while the producer price remained frozen. Per capita fish consumption remained roughly stable, but consumption of livestock products, particularly beef, rose.

Japan has at least three choices for agricultural policy:

- Maintain the status quo with a farm policy that sustains small-scale, high-cost rice production. Adopting this course is unlikely because of the anticipated decline in the political clout of farm groups, the increasing influence of Japan's export sector and consumer groups, and pressure from foreign food suppliers to liberalize its import market.

- Take a free trade approach. This approach is favored by some consumer groups and foreign interests. However, if this strategy were quickly adopted, its social dislocation cost would be intolerable. Free trade advocates cite global and Japanese welfare gains, but seldom discuss the costs. Some groups, notably producers, would sustain sizable income cuts. A rapid switch to free trade is unlikely.

- Pursue a middle course. A middle course would mean continuing to protect the national agricultural sector as much as possible while gradually liberalizing it, making it more efficient and competitive compared with the rest of the world. Japan is most likely to pursue this policy.

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MACAO

Lois A. Caplan

Macao is an island enclave settled by Portuguese traders in 1557. In 1979, the Portuguese acknowledged Chinese sovereignty and, in return, the Chinese allowed the territory to remain under Portuguese administration. A 1987 agreement between China and Portugal transfers Macao to Chinese control in 1999. The territory will become a special administrative region of China. China has promised that Macao, like neighboring Hong Kong, will be able to maintain its capitalistic system for 50 years after China resumes control.

With more than 400,000 people, mostly of Chinese origin, inhabiting only 6 square miles, Macao is the world's most densely populated territory. About 90 percent of the land is urban while 10 percent is agricultural. Once a thriving world trading center, modern Macao produces textiles, toys, plastic products, and electronic components. Gambling casinos are the territory's single largest source of government revenue. Exports totaled $756 million in 1983.

Rice and vegetables are the main agricultural crops. While local produce provides dietary staples such as poultry meat, pork, seafood, and vegetables, Macao relies mostly on imports for its food, mostly from nearby China and Hong Kong.

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NORTH KOREA

John H. Dyck

North Korea has followed a policy of self-reliance to an extreme degree, playing a much smaller role in world agricultural trade than its size would suggest. North Korea's isolation and secretiveness are such that even basic data on population and agricultural production are not released. Such data must be guessed. Major crops are rice, corn, and various fruits and vegetables. The proportion of GNP attributable to agriculture is unknown, but probably less than half. The country has a collectivized agriculture that benefits from extensive mechanization and irrigation, heavy use of chemical fertilizer, and intensive research and extension activities.

The Economy

Outside estimates of GNP vary widely. A floor for estimates might be $20 billion. The population is estimated at about 20 million. North Korea emerged from Japanese colonial rule in 1945 with an economy dominated by industry and mining, and had a large hydroelectric power base. The country's heavy industry has continued to expand since then. Large amounts of capital have flowed into agriculture. Light industry has apparently not received as much emphasis as heavy industry and agriculture. The transportation and communication networks are extensive. North Korea's political system emphasizes central planning and self-sufficiency in the economy. Heavy expenditures on the military have continued throughout the postwar period.

The Agricultural Sector

Major crops are rice, corn, fruits, vegetables, wheat, potatoes, sweet potatoes, and tobacco. Farming is done on large, mechanized farms, in contrast to the rest of northeast Asia. Little is known about livestock production, but much of the poultry meat, eggs, and pork is produced in specialized enterprises, often near cities. Sheep, dairy cattle, and goats are raised in hilly areas.

The Korean diet includes rice and riced corn (a rice substitute), vegetables, fruits, and limited amounts of livestock products. While nutrition is probably adequate, some foods such as rice are evidently in short supply and are rationed, such as rice.

Policy Goals

North Korea's ruling party has sought to establish a socialist economy in which class distinctions would eventually disappear. Growth, particularly in modern industry, has preoccupied the country, especially because of the destruction caused by two wars. Another major goal has differentiated North Korea's development from most other centrally planned nations: a commitment to economic self-sufficiency, which in turn allows political autonomy.

North Korea began in the late 1970's to invite more trade and investment from the rest of the world, a theme that has been repeated in the latest 7-year plan (1987-94). Unpaid foreign debts from the 1970's remain a serious obstacle to wider foreign economic involvement. Although reducing self-sufficiency, greater reliance on foreign capital and trade might stimulate growth. North Korea's leaders are perhaps more aware now of the problems of maintaining growth without trade.

After World War II, North Korea's drive for self-sufficiency confronted the fact that it had become a net food importer before the war. Unlike other centrally planned economies, North Korea embarked on a policy of building up the agricultural sector with the aid of the nonagricultural sectors. Besides self-sufficiency in food production, the establishment of socialist social relations in the countryside has been a major policy goal. The country's leadership has for years indicated a preference for state farms, owned by the state and operated by farmers with the status of workers. However, most farms remain cooperatives, owned by the farmers who live on them. This state of affairs perhaps shows an unwillingness by the leadership to jeopardize self-sufficiency by forcing through the ownership changes.

Agricultural Programs

Land reform divided the land among the mass of peasants in 1945-46. The country collectivized its farms into cooperative farms from 1953-58. Massive water projects--irrigation and flood control--began after World War II and continue to the present, along with extensive land reclamation from terracing, dike construction, and other methods. Agricultural mechanization with tractors, trucks, and other machines reportedly reached a satisfactory level by the late 1970's. High levels of domestically produced chemical fertilizers are used. Rural electrification and road building have benefited most areas. Higher education is supposed to serve all farms and substantial numbers of farmworkers and cooperative members work as technicians. Agricultural research is stressed.

North Korea has used some unorthodox raw materials and processes in its search for self-sufficiency. Corn processed to look like rice is a major food. Walnuts are pressed for oil on a large scale, reeds are harvested for paper and textile use, and the government encourages the use of wild plants for food and medicinal purposes. A limestone based fiber, vinalon, has become a principal element in textiles in North Korea, which can grow little cotton.

North Korea has little foreign exchange, and uses agricultural exports to earn exchange, or in barter for other goods. The country has long exchanged fresh fruit and vegetables, tobacco, and rice for Soviet goods, including small amounts of wheat and sunflowerseed oil. Other trading patterns have been more sporadic. Some rice is generally exported, while wheat, less expensive than rice, is imported. The overall level of agricultural trade is small.

Agricultural Program Evaluation

North Korea's agriculture has reportedly achieved high grains yields. Because farmland is scarce, labor and capital are used heavily. For example, corn is transplanted on a large scale with special machines and much labor so that it can grow in cooler areas. The entire rice area and some corn and wheat areas receive irrigation. Besides machinery, fuel, electricity, and fertilizers, the nonagricultural sectors frequently provide labor for special agricultural projects and for such seasonal tasks as transplanting.

Concentration of resources on agriculture helps achieve self-sufficiency, but probably hinders the growth of the whole economy. When part of the Japanese empire, North Korea's fuel and electricity powered factories producing chemicals, cement, steel, and other industrial products for Japan while workers ate food produced, in part, elsewhere in the empire. The Japanese system certainly distorted resource use, but North Korea's industrial past probably indicates that it has a comparative advantage in manufacturing, not in agriculture. Given free trade and an absence of military threats, the North Korean economy would probably grow faster if fewer resources were diverted to agriculture and nonagricultural exports were used to pay for agricultural imports.

North Korea would probably import more soybeans for meal and oil, dairy products, cotton, wheat, hides, and rice if it instituted free trade. Rice exports would end, but exports of fruits, vegetables, and tobacco might continue. The current policies that preclude such agricultural change are likely to continue as long as North Korea believes that war is a strong possibility. Even if policies were to change, however, North Korea would have to first successfully export manufactured goods and mineral raw materials to be able to import larger amounts of farm goods.

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SOUTH KOREA

Sophia Huang

South Korea's agriculture, moving toward self-sufficiency for rice and other farm products, has been heavily subsidized by the government since the late 1960's. While rice remains the most important crop, livestock, fruits, and vegetables have substantially increased their shares in both food production and consumption. The importance of the agricultural sector to the general economy is declining because of rapid industrialization and urbanization. Korea is slow in liberalizing its agricultural market. Despite its restrictive trade, Korea must import large quantities of farm products, mainly bulk commodities, to keep the livestock, flour milling, and export-oriented industries of textile and leather goods in operation. Korea was the fourth largest U.S. overseas farm market in 1987.

The Economy

Korea's real GNP growth averaged about 8 percent during 1962-86 with per capita GNP rising to about $2,300 in 1986. The driving force behind the country's economic expansion has been export-led industrialization, starting in the early 1960's following the rise to power of General Park Chung Hee. His presidency was uninterrupted from May 1961 until his assassination in October 1979. Under Park's presidency, the economy began to be guided by a series of 5-year economic development plans. In 1980, Korea was hit by some external shocks and adverse domestic developments, including the second OPEC oil price hike, poor harvests, and political instability following Park's assassination. However, strong economic growth resumed in 1981 and continued through 1987, with year-to-year variations from changes in export demand. Despite high economic growth rates, Korea had long suffered a deficit-ridden balance-of-payments position until 1985. Its external debt stood at about $45 billion at the end of 1986.

The Agricultural Sector

Korea's agricultural sector is characterized by small owner-operated farms with an average size of only 1.1 hectare. Rice is a dominant crop, while rising consumer incomes have created increased demand for and, in turn, production of livestock products, vegetables, and, to a much lesser degree, fruits. The introduction of high-yield varieties of rice in the 1970's plus increasing use of farm chemicals and machinery and improved quality of farmland through irrigation, drainage, and land development have increased yields and labor productivity.

Importance of the agricultural sector is declining because of industrialization and urbanization. But, the agricultural sector still contributes about 15 percent to GNP and employs about a fifth of the labor force. With heavy government assistance, Korea's agricultural sector is moving toward self-sufficiency in rice, horticultural products, and livestock products except beef. Despite high levels of self-sufficiency in some farm products, Korea depends almost entirely on imported wheat for milling, coarse grains for livestock feeding, and cotton and hides for manufacturing textiles and leather goods.

Policy Goals

The major goals of Korea's agricultural policies are to increase food security, keep farm incomes at a level close to nonfarm incomes, and maintain price stability. These goals, fairly constant over the years, have been adjusted from time to time as new issues and problems emerged in the course of economic development. Because agriculture is perceived as more than just another industry, the Korean government also pursues social, political, and cultural objectives through its agricultural policies.

During the 1950's, the government's primary efforts were directed toward the rehabilitation of its war-ravaged economy and the alleviation of inflation. The government, sensitive to the effects of food grain prices on the living costs of urban consumers and the general price level, pursued a low price policy for food grains through its intervention in grain marketing. The availability of U.S. grain under P.L. 480 between 1955 and the late 1960's (the program was terminated in 1980) helped Korea pursue this low price policy.

Agriculture was accorded a low priority in the early period of economic development because of the government's emphasis on industrialization. Not until the late 1960's when imports under P.L. 480 were changed to cash or credit transactions, causing a drain on the nation's limited foreign exchange reserves, was more attention directed to agriculture. The government then shifted its agricultural policy toward expanding domestic production to reduce foreign exchange expenditures on farm imports. Increasing efforts also were made to reduce the growing income disparity between urban and rural households. Korea's growing prominence in international trade has recently brought foreign pressure for liberalization of its agricultural markets.

Agricultural Programs

Korea's government has been extensively involved in domestic agricultural markets as well as in controlling imports to pursue its policy goals. Because of the dominance of rice and barley production, policies pertaining to food grains have been central to farm policy. The grain management law of 1950 remains today the basic legal authority for the government food grain policy. The primary intent of this law is to enable the government to secure sufficient grain from farmers so as to stabilize the national economy through control of grain distribution and manipulation of government stocks. During 1982-85, government rice procurement annually averaged more than 1 million tons. The rice is distributed to government institutions such as the armed forces, police forces, and public hospitals. The government also emphasized seasonal price stabilization through direct sales in the market during the off season.

The most significant policy measure pertaining to the government's grain procurement program is its purchase price policy. During the 1950's and much of the 1960's, the government held down prices paid to farmers as part of an effort to maintain general price stability. However, the price policy has been reversed, and the price paid to farmers has been raised substantially since 1969. Moreover, a dual price system for rice and barley was adopted. Under this system, a higher price is paid to farmers, while a price below the costs of acquisition and handling is paid by consumers. The price differential is financed by the government.

Much of Korea's protection for agricultural products has come from trade restrictive measures. The government limits agricultural imports through tariffs, quotas, and other trade barriers. Even though most grain and feed products are in the category of "automatic approval" items, they are subject to special laws such as the grain management act and the feed management act which give the government ultimate authority to approve or deny import licensing. All imports of wheat, feed grains, and soybeans and products are restricted by quotas. Midyear quota adjustments are possible depending on prevailing market conditions. The range of high value agricultural products allowed free entry into Korea is very limited.

In addition to marketing intervention and border measures, the government has been involved in a number of other agricultural programs such as land reform in the 1950's, input subsidies, coordination of research and extension, and land resource development and improvement. The government has carried out massive irrigation projects and other infrastructural improvements in agriculture, and has provided guidance to farmers making their own investments in farms and houses through its new community movement begun in the early 1970's.

Agricultural Program Evaluation

With limited land resources and a shrinking and aging farm labor force, Korea has increased agricultural production and diversified its agriculture, resulting in an improved, more varied diet. After decades of rice imports, the goal of rice self-sufficiency was more than achieved by the mid-1980's. However, the success of Korea's general economic performance and the rapid nonfarm income growth it generates makes it difficult to maintain comparable growth in farm income in the absence of large and sustained increases in agricultural productivity. Despite substantial improvement in farm income, nearly half a million rural youths have annually left farms for the cities.

The government has a strong commitment to increasing self-sufficiency in food and maintaining parity between farm and urban household income. Following the past policies of stressing resource development and commodity price supports to achieve self-sufficiency would almost certainly lead to persistent agricultural surpluses, particularly of rice, a heavy taxpayer burden, and misuse of resources in the economy. To achieve its income equity goal, the government would have to maintain commodity price supports at levels that probably would lead to increasing government subsidies and consumer food prices.

Korea's dual-price system for rice and barley has stimulated grain production and has raised farm income, while not fully passing on high prices to consumers. The price system is costly and has some adverse effects on the general economy. A large proportion of the price support has been financed by central bank borrowing which increases the money supply and places upward pressure on the general price level.

In fact, the expanding scale of the government deficit ($1.9 billion at the end of 1986) due to the dual-price system for rice and barley has emerged as one of the serious constraints on farm price policy. There was some evidence that the government had retreated from its grain support prices in 1983 and eliminated the wheat price support program in 1984. However, in 1987, an election year, the government announced a 14-percent increase in the government rice purchase price, the biggest price hike since 1981. But in the long run, the government would like to reduce its grain purchases gradually to reduce expenditures if this is politically feasible.

The government has acknowledged that constantly escalating farm prices to maintain agricultural income parity is not a sustainable policy in the long run. Because Korea's farm households obtain about a third of their income from off-farm sources, a much lower share than that reported in Taiwan and Japan, more effort is planned to develop off-farm income sources. The rural development fund was established in 1986 to develop rural industries, sideline businesses, and other nonfarm income sources for rural residents, among other purposes. Also, the sixth 5-year economic plan (1987-91) calls for financial and tax incentives for locating businesses in the rural area.

Korea is slow in liberalizing its agricultural trade policies. Despite the government's cautious move to open agricultural markets since the early 1980's, agriculture has been substantially excluded from market liberalization moves. With a fifth of Korea's population still on the farm, it is unlikely that the government will declare a sudden end to agricultural protectionism. For social and political reasons, the government contends that substantial liberalization of agricultural trade will have to wait at least until after 1990.

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TAIWAN

Sophia Huang

Taiwan's trade-oriented policies have spurred significant economic growth since the mid-1960's. Agriculture's contribution to the general economy is declining, while agricultural policy has shifted from taxing producers to subsidizing them. Over the years, Taiwan's agricultural policy has pursued the goals of increasing food security and improving farmer welfare, with shifts in emphasis to reflect changing economic and social conditions. Taiwan's agricultural programs, beginning with land reform and followed by various rural development programs, have effectively improved the nation's food production and farmers' welfare. Taiwan, however, depends on importing large quantities of raw agricultural products: wheat, feedstuffs, cotton, and leather. Taiwan ranked as the fifth most important U.S. overseas farm market in the 1987.

The Economy

Taiwan's island economy of 20 million people, with per capita gross national product reaching $3,800 in 1986, relies heavily on international trade. Ceded to Japan in 1895 and returned to China following World War II, Taiwan became the home of the national China government in 1949. The democratic republic government, which takes a strong role in guiding the economy, began planning the island's economic development in 1953.

The economy progressed rapidly under several consecutive economic plans. Real GNP growth averaged 9 percent in 1965-86. The island's export-expansion policy also drastically changed its export mix from mainly rice and sugar before the 1960's to electrical and electronic manufactures, textiles, metal products, and machinery in the 1980's. Except for the recession of 1974-75, Taiwan has consistently enjoyed a surplus in foreign trade since the early 1970's. The surplus with the United States, on which Taiwan depends for about half of its exports, has made Taiwan a visible target for foreign criticism of its trade barriers.

The Agricultural Sector

Using year-round farming and multiple cropping, Taiwan has produced a wide variety of crops, including rice, sugarcane, and various fruits and vegetables. While only a quarter of the island's 13,900 square miles is arable, it has subtropical and tropical climates and good irrigation.

Rapid economic growth has brought a marked change in Taiwan's agricultural sector. Its contribution to net domestic product dropped from 33 percent in 1960 to 6 percent in 1986. Production of many crops has declined, notably sweet potatoes, sugarcane, and coarse grains, while livestock and a broad range of fruits and vegetables has made steady gains to meet growing domestic and, in some cases, foreign demand.

In contrast to its overall trade success, Taiwan has run an increasing trade deficit in agriculture since the early 1970's. Rising production costs have made Taiwan's formerly prominent agricultural exports such as sugar, canned mushrooms, asparagus, and pineapple increasingly uncompetitive in world markets. Taiwan depends heavily on agricultural imports: feedstuffs to support domestic livestock production, cotton and hides for the export-oriented textile and leather goods industries, and wheat and powdered milk for food. Taiwan ranked as the fifth most important U.S. overseas farm market in 1987.

Policy Goals

Since the first 4-year economic plan started in 1953, Taiwan has pursued food security and farmer welfare. These objectives have continued to guide Taiwan's agricultural policy throughout a series of 4-year agricultural development plans, with shifts in emphasis to reflect changing economic and social conditions.

After World War II, Taiwan experienced hyperinflation and a large population influx from the Chinese mainland. Since rice was regarded as a wage good, a sufficient rice supply was necessary for economic stability and as a hedge against inflation. Rice and sugar were also important for earning foreign exchange needed in the initial stages of postwar economic rehabilitation and development. Thus, agricultural policy focused on increasing land productivity, especially for rice production, and on pursuing multiple objectives of food security, greater foreign exchange earnings, and price stabilization.

After the late 1960's, farmers' income declined relative to that of nonfarmers because of rapid industrialization. The supply of rural labor began to shrink as some farmers moved out of agriculture. Agricultural policy was then reoriented toward improving labor productivity, enhancing farmers' incomes, and narrowing the income gap between farmers and nonfarmers. The goal of increasing food security remained important, but it changed because of these economic conditions. The improving and increasingly diversified diet broadened the agricultural policy mix. Rice was no longer paramount. Issues related to livestock and feedstuffs began to gain the government's attention in its policy formulation on food security.

Agricultural Programs

Taiwan's postwar agricultural programs before the late 1960's were focused on increasing food production while transferring resources from the agricultural sector to assist in general economic development. Since then, agricultural programs have emphasized improving farmers' welfare. Rice policy was changed drastically to reflect changing economic and social conditions. Trade barriers were reduced substantially, but remained restrictive. Regulating feedstuff imports became one more program adding to the government's increasingly complex agricultural policy.

From 1949 to 1953, several of land reform measures were implemented to give incentives to farmers to increase rice production. Among these measures were a reduction in farm rent to ease the financial burden of tenant farmers, the sale of public lands, and the land-to-the-tiller program to make tenants owner-cultivators.

Four consecutive 4-year economic plans were carried out between 1953 and 1968. The chief target of economic planning for agriculture was to increase crop production by improving land productivity. In addition to introducing technical innovations, labor-intensive farming was emphasized because of abundant rural labor. Multiple-cropping systems were developed and widely practiced by farmers.

Since rice is a staple in the traditional diet and the most important food grain, production and marketing of rice have always been tightly controlled. The government operated programs which enabled it to control a sizable share of the rice marketed each year. Some methods used by the government to collect rice were a paid-in-kind land tax and a compulsory government procurement program. The effective rice price under these schemes was typically only 70-80 percent of the prevailing free market price. The government also procured rice through a rice-for-fertilizer barter program with an exchange ratio usually unfavorable to rice farmers. During the 1950's and 1960's, the average annual government procurement was 650,000 tons of paddy, which accounted for more than half of the off-farm rice. Approximately 50-60 percent of the rice collected was rationed to the armed forces and distributed to military dependents and civilian government employees. The remaining balance was either sold on the free market to stabilize rice prices or exported, a trade that the government monopolized.

Taiwan's agricultural development reached a turning point in the late 1960's when the supply of rural labor for the first time began to shrink. Agricultural programs were revised to emphasize improvement in labor productivity and subsidies to farmers. In 1973, the government carried out an "accelerated rural development program" (ARDP) to speed up the process of agricultural modernization. It brought improvements in farm credit and agricultural mechanization by providing financial and technical assistance.

In addition to the ARDP program, the government abolished programs detrimental to rice farmers, notably the rice-for-fertilizer barter system. The government also established a rice stabilization fund in 1974 to guarantee producer rice prices. Official procurement prices were raised to and then kept above free-market levels. A large rice surplus developed in the late 1970's as a result of increased incentives to rice producers. In addition to subsidized rice exports since 1978 and the rice-for-feed program since 1984, the government started a program (1984-89) to encourage farmers to divert riceland to other crops, particularly soybeans and feed grains which have low self-sufficiency ratios.

Aside from changes in rice policy, the government began to liberalize its trade policy in the mid-1960's. Along with other trade liberalization measures, the government reclassified coarse grain and soybean imports from the "controlled" to the "permitted" category in 1967. This change promoted increases in feedstuff imports to meet the expansion of the domestic livestock and poultry industries. Since 1970, three key agricultural imported commodities--corn, soybeans, and wheat--have been subject to the provisions of the regulation governing bulk commodity imports. In addition to tariffs, imports of bulk commodities are regulated by import quotas and through group purchases coordinated by a government licensing procedure. Also, the bulk commodities have been placed under a system of "uniform import prices." The price paid by domestic users for these commodities is administratively set at a level known as the "import base price" or "stabilization price" which is based on the international price of the commodity prevailing at the time, remaining fixed for a few months to over a year.

Agricultural Program Evaluation

Government land reform programs in 1949-53 had a positive influence on rural income distribution and laid the groundwork for agricultural development. Despite agricultural price policy being unfavorable to farmers in the early stages of Taiwan's economic development, significant increases in agricultural output and productivity were achieved because of public investments in research, extension, irrigation, and other rural infrastructure. Agriculture as the premier sector of the economy in the early period of economic development supplied resources to a budding nonagricultural sector, and rural areas became a major market for industrial products. Gains in agricultural productivity made possible the transfer of large amounts of capital and labor from agriculture to other sectors. Capital outflows were in the form of rents, interest payments, and taxes. The rice compulsory purchase scheme and rice-for-fertilizer barter program were implicit taxes.

After the 1970's, the consequence of rising government assistance to rice producers was too much production, leading to a costly rice diversion program and surplus disposal programs (mainly subsidized exports and rice-for feed). Rice production has dropped significantly, but the program is costly to the government. Rice producers have tended to shift into vegetables and fruits, not into soybeans and feed grains as was hoped, despite high guaranteed prices relative to world market prices for these commodities.

Agricultural protection is mainly through guaranteed prices and border measures. Assistance to coarse grain and soybean producers has had little effect on imports because of minimal domestic production of these products. Growth in domestic demand for livestock products coupled with livestock import restrictions have spurred domestic livestock production, supported by relatively unrestricted coarse grain and soybean imports. Taiwan's livestock industry, mainly hog and chicken raising, has been transformed from backyard operations before the 1960's to highly commercialized enterprises of the 1980's. Taiwan has become so competitive in pork production that it exports large volumes each year.

The government has modified its previous "more is better" policy by continuing the riceland diversion program. The goal of no more than self-sufficiency for rice by 1990 seems obtainable. Coarse grain and soybean production has increased substantially. However, maintaining a high level of domestic feedstuff production is viewed as impractical because of a severe land constraint. Thus, livestock production will continue to depend on feedstuff imports.

The uniform import price plan covering the major bulk commodities has insulated importers from international price fluctuations. The policy, however, reduces the elasticity of Taiwan's import demand for these commodities with respect to changes in world prices. While mandated group purchase practices have helped inexperienced individual importers in dealing with complicated international trade and given the government some control over bulk commodity imports, the bureaucratic rigidity of the practices has reduced the efficiency of this import operation. The government has recently substantially relaxed the import quota on bulk commodities and announced a full liberalization of these imports.

Taiwan has reduced many trade barriers, including tariffs and nontariff restrictions. The increasing trade surplus, particularly with the United

States, has brought the threat of international protectionism. Recent efforts to liberalize imports seem to point to further trade liberalization.

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REGIONAL SUMMARY OF EASTERN EUROPE AND THE USSR

Kenneth R. Gray

This section covers the USSR, Mongolia, and the centrally planned economies of Eastern Europe. All but Yugoslavia and Albania are members of the Soviet-dominated Council for Mutual Economic Assistance (CMEA). These countries, with a tenth of the world's population, are net agricultural importers, accounting in 1985 for over 11 percent of world agricultural imports compared with 4 percent of agricultural exports.

The East European collectivization of agriculture began following the installation of Soviet-type systems after World War II. The extent of private agriculture remaining differs in each country. No land is privately owned in Mongolia, but a quarter of the livestock is privately owned and may be grazed on public land. The share of USSR land in private use is only about 1.5 percent. The share ranges from 7-16 percent in Czechoslovakia, the German Democratic Republic (GDR), Bulgaria, Hungary, and Romania. In Poland and Yugoslavia, where popular opposition halted the collectivization drive, land is still privately owned. Private farms also lease land from the state. Shares of land in private use in 1983 were 76 percent in Poland and 68 percent in Yugoslavia.

Soviet-style economic planning and collectivization of agriculture have been moderately effective in mobilizing rural resources for industrialization in the early stages of economic development. But state planning of agriculture grows progressively less effective as economic development occurs, with labor and land becoming less abundant, and agriculture growing more technologically complex and capital-intensive.

The classical Soviet-type system involves centralized decisionmaking on virtually all matters which are decided by farms alone in market-economy countries. For example, in 1955 there were 600 separate directives issued to farms in Bulgaria. Centrally formulated plans have sought to determine farms' production and marketing targets, allocations of farm inputs, and even the area under specific crops, numbers of specific livestock, the nutrient mix of fertilizer, and other specifications. Goals of government policy are often expressed more in written plan directives than in the manipulation of the financial levers (prices, loan rates, tariff rates) common to market economies.

However, financial instruments are also part of state control of agriculture in the centrally planned economies. The role of such instruments is generally growing in importance. Because the state is unable to specify everything in detail, it has always established aggregate financial targets for farms, and set prices under the influence of which farms have made certain decisions, calculated profits, paid taxes, and borrowed capital. Yet, the fulfillment of marketing targets is more important to farms than profitability except in Yugoslavia and Poland where private agriculture predominates and has no obligatory plans, and Hungary, where plans stress farm profitability. Credit and financial grants are usually available to facilitate the state's purchase and investment plans and to cover any farm financial losses.

By the 1960's, centrally planned countries turned from the earlier objective of using agriculture to support industrialization to that of increasing per capita consumption. A related goal has been stable retail prices. These goals required increased investment in agriculture and large imports of agricultural commodities. However, by the late 1970's and early 1980's, most of these countries faced rising budgetary subsidy costs and severe balance-of-payments problems. They were increasingly forced to reexamine their policy of low retail prices, and sought ways to increase agricultural efficiency.

There were several attempts at reorganization to improve planned agriculture during the 1970's. These mainly involved the horizontal and vertical integration of farms with processing organizations and suppliers of inputs. Reorganization was aimed at coordinating various stages of food production in order to increase output and reduce costs. These new organizational forms proved generally disappointing, except in the GDR.

By the late 1970's and early 1980's, the USSR and several other of the centrally planned economies began to stimulate private farming, using close contractual relationships to integrate private farming and the initiative of small labor teams more purposefully with state and collective farming. These relationships have somewhat blurred the distinction between planned socialist and private farming activities.

Socialist policymakers have also sought to increase farm initiative and efficiency by reducing the role of central planning and increasing the importance of financial levers. However, changing Soviet-type farm systems has not been easy; efforts at decentralization have undergone many reversals. A major problem is the maintenance of rigidly controlled prices which do not allow supply and demand to operate. These prices mean obligatory sales plans and state rationing of inputs. Even in Poland, where private farming has not had obligatory targets since the early 1970's, farm inputs are still largely rationed by the state and full-fledged responsive marketing in the state sector is absent.

The foreign trade of the centrally planned economies was decentralized somewhat from purely state monopoly trading starting in the mid-1970's in Eastern Europe and in 1980 in the USSR. Individual production enterprises have been allowed to apply for permission to deal directly on foreign markets. However, although the number of authorized enterprises has proliferated, this development has occurred principally to facilitate export earnings and ease the hard currency crisis confronting the region. Agricultural commodity trade has not been decentralized to any significant extent, and is still determined largely by central plan in most of the countries. Even in Hungary, which has gone the furthest in that direction among the CMEA countries, most trade still passes through foreign trade organizations. In Yugoslavia, agricultural trade is restricted by government policy, through tariffs, quotas, and currency allocation, as it is in some market economies.

Prospects for extensive change in policies and systems grew for the entire region with Mikhail Gorbachev's accession to power in the USSR in 1985. The USSR has said that it wants to reform pricing and eliminate much of the existing detailed planning. In the USSR, the experiences of Hungary, Yugoslavia, and China--the most reformed socialist countries--have been cited as models.

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ALBANIA

Nancy Cochrane

Albania has been ruled by the communist party since 1944. The government and communist party were headed by Enver Hoxha from that time until his death in 1985. The country is now headed by Ramiz Alia. Hoxha broke with the USSR in 1961 and continued to pursue Stalinist policies, condemning the USSR and other CMEA members as "revisionists." At that time, Hoxha entered an alliance with the People's Republic of China, but broke that off in 1968, claiming that the Chinese were also pursuing revisionist policies. Since then, Albania has pursued isolationist policies, engaging in very little reign trade and stressing policies of self-sufficiency.

Total trade turnover (exports plus imports) is barely over $500 million per year. Primary exports are petroleum products, minerals (mainly chrome), and electrical energy. Its largest imports are machinery, iron and steel, and coal. Trade is very nearly in balance. The 1976 constitution prohibits the country from taking on foreign debt.

The Albanians have paid dearly for their years of isolation. Per capita GNP in 1979 was only $830, and Albania continues to be by far the most socially and technologically backward country in Europe. During the 1981-85 plan period, Albania, like so much of the rest of the world, suffered from slowing growth, exacerbated by a rapidly growing population. The economic situation has apparently become sufficiently worrisome to induce Alia to reconsider some of the hardline policies of his predecessor. He has attempted to stimulate productivity with salary bonuses and other incentives. On the international front, he has initiated economic and political relations with Italy, Spain, Federal Republic of Germany, Sweden, and other West European countries. He has also increased trade with the East European countries and has opened a railway link with Europe via Yugoslavia.

The agricultural sector's contribution to Albania's national income is about 30 percent and the sector employs about two-thirds of the total labor force. Grains, fruit and vegetables, tobacco, sunflowerseeds, sugar beets, and cotton are the major crops. Albania is a net agricultural exporter. Agricultural exports, mainly tobacco, fruits, and vegetables, make up about 20 percent of Albania's exports. Major agricultural imports are raw textile fibers, vegetable oil, hides, and oilseeds.

The overriding goal of agricultural policy is self-sufficiency. This goal became increasingly important during the second half of the 1970's as the break with China became imminent. By 1976, Albania became self-sufficient in grains. However, Albania continues to have problems providing an adequate level of consumption, particularly in the livestock sector. Policies in the early 1980's began to stress more intensive development of agriculture.

Agricultural programs initiated in the 1980's were aimed at raising the sector's share of investment, expanding irrigation and drainage, and accelerating the introduction of technological innovations. Programs for the livestock sector involved concentrating production into large complexes specializing in a single line of production: hogs, cattle, or poultry. Procurement prices were raised in order to raise incomes for agricultural workers and a system of bonuses for outstanding workers was introduced.

The private sector also began to receive more attention. While Albanian agriculture is almost entirely collectivized, cooperative farm members are allotted small plots on which to grow potatoes, beans, and other vegetables. However, private plot production is just for the members' own consumption. They are not allowed to sell any of their produce. Unspecified measures are being introduced to expand the production of private plots and make cooperative farm members responsible for meeting more of their own food needs.

Plotholders are not allowed to hold their own animals. Plotholders were forced to turn over their animals to their brigades for collective herding during the 1970's. There was considerable resistance to this policy as plotholders slaughtered their animals rather than give up ownership. However, Alia, on taking power, reaffirmed this policy. Cooperative members are to meet their own meat requirements with these herds, allowing the cooperative farms to supply the needs of urban dwellers.

Albania has been successful in maintaining its isolationist position and avoiding large food imports. However, the cost has been high. Because of the poor quality of Albania's agricultural land (only 6 percent of Albania's territory is good agricultural land) and the lack of incentives for workers, Albania has difficulty producing sufficient food to provide an adequate level of consumption. Because of its rapidly growing population, the situation will become much more critical in 1990's. The government has recognized the need to stimulate production, especially in the livestock sector. But measures taken have been much too cautious to have any real effect.

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BULGARIA

Nancy J. Cochrane

Bulgaria derives 15-20 percent of its national income from agriculture and is a net exporter of agricultural products. Livestock production accounts for slightly more than half of gross agricultural output and is an important source of export earnings. Other exports are fruits, vegetables, and tobacco. Most exports go to other CMEA members. Though Bulgaria is a surplus agricultural producer, its agriculture suffers from overly rigid planning, inadequate investment, and escalating costs. Since 1979, the government has, with limited success, introduced several measures intended to raise productivity, control costs, and provide greater incentives to workers.

The Economy

Bulgaria has been ruled by the communist party since 1946. Roughly 75 percent of its foreign trade is with other CMEA members, 50 percent with the USSR alone. It is a net agricultural exporter and a major supplier of agricultural products to the other CMEA members. Of all the East European CEMA members, Bulgaria follows the Soviet lead most closely.

Bulgaria's per capita GNP in 1985 was $6,420, higher than in Romania and Yugoslavia, but considerably lower than in other countries of Eastern Europe. Yet, in terms of the availability of food and other basic commodities, the living standards of Bulgarians are probably higher than in Poland and the USSR. Food stores are well stocked, although there are occasional weather-related shortages.

The Agricultural Sector

The agricultural sector produces 15-20 percent of national income. The agricultural labor force has steadily declined. Its share was 45 percent in 1970, 25 percent in 1980, and just 21 percent in 1985. Common in developing countries, this sort of decline in the agricultural labor force has created serious productivity problems because it is the younger, better educated workers who have left for the cities.

Bulgaria's agriculture was collectivized after the communist party took power. During the 1970's the state and collective farms were combined into large, horizontally integrated organizations known as agricultural-industrial complexes (APK's). The socialized sector today produces roughly 75 percent of Bulgaria's agricultural production. The remainder comes from the private sector, which consists mainly of half-hectare plots allotted by the APK's to their members.

Crop production had a higher share in gross agricultural output than livestock during most of the post-war period. However, the emphasis began to shift to livestock in 1970 and by 1980 the livestock sector had a greater share. Major crops are wheat, corn, barley, sunflowerseeds, tobacco, fruits, and vegetables.

Agricultural exports comprise about 20 percent of total exports in value. Most go to the USSR and other CMEA members. Major exports are livestock products, fruits and vegetables, tobacco, and wheat. Bulgaria imports corn, cotton, sugar, and oilseed meal. The oilseed meal and much of the corn must come from the West and imports of these commodities are constrained by the hard currency shortages plaguing all Eastern Europe. The United States supplies a significant share of the corn, but Bulgaria buys most of its oilseed meal from Brazil and Argentina which are more amenable to countertrade arrangements.

Policy Goals

Bulgarian government policy for most of the post-war period emphasized rapid industrial development at the expense of agriculture. Industrial production grew 106 percent, in 1970-80, while agricultural production grew only 21 percent. Despite the importance of agricultural exports, industry's share in total investment grew from 29 percent in 1970 to 42 percent in 1980, while agriculture's share declined to 12 percent from 15 percent.

Bulgaria's foreign trade policies aim at maximizing exports and restraining imports. Unlike other Eastern European countries, Bulgaria has managed to keep its foreign debt under control. Its present net debt is only about $1 million. However, this low debt level has been accomplished by restricting badly needed imports of capital goods and technology from the West. As a result, the poor quality of their manufactured goods is a major obstacle to increased exports to the west. Agricultural exports to the West are constrained by EC barriers.

A major obstacle to improving export performance in the late seventies has been the rigidity of the central planning system. This rigidity led to input supply and profitability problems and a lack of incentives to produce quality output. Foreign trade was handled entirely by monopoly foreign trade organizations (FTO's) which isolated production enterprises from world markets.

Policies since 1979, embodied in the "new economic mechanism" (NEM), have been aimed at increasing factor productivity, providing for intensive rather than extensive development. Measures have been introduced to reduce central planning, give enterprises greater autonomy, link wages to productivity, and generally provide more incentives for producing higher quality output.

Agriculture was the first sector in which the NEM began to be implemented because it is such an important hard currency earner and because it had been so neglected. Overall goals were to boost agricultural exports and to provide for self-sufficiency in basic food products. Measures were introduced to increase productivity, control escalating costs, give enterprises more of a stake in their own performance, facilitate technological innovations, and allow more flexibility in planning at the enterprise level.

Agricultural Programs

The NEM included the following measures relevant to the agricultural sector:

Reduction in planning indicators. Government planning indicators issued to enterprises were reduced from 35 to 4. These four are compulsory sales to the state, export earnings and limits on imports, contributions to the state budget, and limits on the use of certain inputs. Enterprises are free to make their own decisions regarding everything not specified in the plan and are allowed to contract with other organizations for the supply of inputs and the sale of production above the stipulated sales to the state.

Decentralization. The number of APK's created during the 1970's was increased and their size reduced. The ministry of agriculture and the food industry was abolished and replaced by the more streamlined national agro-industrial union (NAIU) whose governing council was to be made up of representatives from the enterprises under it.

Self-financing. All APK's and the brigades under them, all scientific organizations, and all other enterprises under NAIU are required to cover their production costs and make a profit. They are no longer to look to the state for financial assistance. Wages are to be more closely linked to productivity. The wage fund is to be the residual after all other financial obligations are met.

Incentives to private producers. APK's are required to sign contracts with their plotholders, whereby the APK provides seeds, fertilizer, young animals, feed, and other inputs. In return, plotholders sell finished output to the APK at agreed-upon prices. The APK's are to allocate additional land to plotholders who want to grow their own fodder. Cooperating plotholders receive a higher price for their livestock.

Changes in foreign trade organization. APK's are given foreign exchange earning targets and are allowed to retain a percentage of above-plan foreign exchange earnings. Most trade is still carried out by FTO's subordinated to the ministry of foreign trade, but the FTO's are required to contract with production enterprises. Links between the FTO's and production enterprises are said to be very close. Several measures were introduced to promote exports. Imports remain tightly controlled by the central government.

Program Evaluation

The NEM has not been fully implemented. Many production units still do not operate on a self-financing basis. Wages are too high, given poor productivity gains. Costs have escalated and, despite hefty rises in procurement prices, many enterprises continue to operate at a loss. Despite the reduction in planning indicators, 80 percent of agricultural production is still mandated by central planning agencies. Furthermore, producer and retail prices remain fixed by central authorities; there was never any intention to allow market forces a price-setting role.

The period just following the NEM implementation was marked by a continued slowdown in agricultural growth. In 1981-85, gross agricultural output rose 8 percent, versus an 11-percent rise in 1976-80. The entire rise was in the livestock sector, in which output rose 23 percent in 1981-85. Crop production fell 6 percent.

The poor average crop production in 1981-85 was caused by 3 consecutive years of drought. The effects of the drought of 1983-85 were worse because of serious shortcomings that remained in socialized agriculture. Average investment in the agricultural sector continued to decline during the first half of the 1980's. The effect of inadequate investment was dramatically illustrated during the drought when the irrigation system proved woefully inadequate. There had been no expansion of the system since 1979 and maintenance had been neglected. Shortages of financial resources are exacerbated by the low level of technological skill of most agricultural workers.

The poor crop production of recent years combined with the increasing emphasis on livestock has had a negative effect on Bulgaria's agricultural trade. Exports of tobacco, fruit, and vegetables have stagnated because of production shortfalls. Exports of livestock, though rising in volume, have suffered from sagging world prices. But agricultural imports have risen sharply. Large quantities of protein meal have had to be imported to support the expanding livestock sector.

The Bulgarians introduced new measures in 1986 and 1987 in an attempt to reverse these trends. Many of these measures simply restated NEM principles. But the main thrust of recent government action has been repeated reorganizations and shuffling of key officials. In March 1986, NAIU was demoted from ministerial status and a new ministry of agriculture and forestry was created. Then, in December 1986, this new ministry was abolished and replaced by a council on agriculture and forestry, modeled after the new USSR superministry GOSAGROPROM. Implications of these reorganizations are not yet clear.

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CZECHOSLOVAKIA

Robert Cummings

Agriculture plays a minor role in the Czech economy which has a long industrial tradition. Following imposition of a communist government, agricultural land was collectivized, private activity severely restricted, and centralized planning introduced. Several farm reform efforts have not succeeded and agricultural management is among the most conservative in

Eastern Europe. A wide range of crop and livestock commodities are produced. Per capita consumption of foods is among the highest in Eastern Europe. Attaining a balance between agricultural imports and exports is the main policy goal.

The Economy

Czechoslovakia has long been considered the industrial heart of central Europe. Spared much of the damage of World War II, Czechoslovakia retained one of the world's top industrial economies. Czech economic performance and living standards within Eastern Europe today are second only to those of the German Democratic Republic.

A coup by the communist party (CPCS) in 1948 placed the country firmly under Soviet influence and marked the beginning of the decline of Czechoslovakia's place in the world economy. Officials adopted an inward-looking, Soviet-style economic strategy. Large investments were made in heavy industry and infrastructure projects, foreign trade was oriented to meeting primarily the needs of the war-torn Soviet economy, and the agriculture sector was collectivized and subjected to the same discrimination as in the Soviet Union and the rest of Eastern Europe. By the early 1960's, the growth rate of the Czech economy was the lowest in Eastern Europe, and the country's products were fast losing their world competitiveness.

Fundamental market-oriented reforms were approved by the CPCS in 1965 but implementation was prevented by party conservatives. The invasion of Warsaw Pact forces in August 1968, and the subsequent ouster of premier Alexander Dubcek in 1969, ended the reform efforts. The Czech economy remains one of the most orthodox in Eastern Europe. Czech officials have expressed open skepticism of the applicability to Czechoslovakia of Gorbachev's modernization policies.

The Agriclutural Sector

Agriculture contributed approximately 11 percent to national income in the mid-1980's, one of the lowest shares in Eastern Europe. The agricultural growth rate is among the slowest in Eastern Europe, reflecting the slow population increase and policies restricting growth in per capita food consumption.

Landownership is almost entirely in the hands of state or collective farms. Nonetheless, private agriculture plays an important role. Most private farms are concentrated in the mountains where large collective farms are impractical. Emphasis there is on livestock production. Thus, roughly a quarter of Czechoslovakia's milk, pork, and eggs is produced on private farms.

Czech agriculture is highly diversified with grain, oilseeds, fruits, vegetables, tobacco, sugar beets, hops, and flax. An extensive and well-developed livestock sector provides one of the highest levels of per capita meat and dairy consumption in Eastern Europe. Farming principally takes place on the forest soils of the Bohemian plateau of western Czechoslovakia and in the slightly more humid plains of southern and eastern Slovakia. Most meadow and pasture lands are located in central and northeastern Slovakia.

Policy Goals

Maintaining planned growth through more efficient use of inputs is the main economic policy goal. Central planners maintain extensive power in the economy despite widely publicized initiatives for greater farm and enterprise autonomy. Officials have rejected the reform path of Hungary, opting instead to refine traditional central planning techniques. Even the Soviet Union's more conservative reforms begun in the mid-1980's met resistance, with some segments of the CPCS warning of a possible return to the political and economic upheaval of 1968.

The primary goal of Czech agriculture is self-sufficiency in terms of balanced agricultural trade. Officials pursue higher domestic production, stable per capita food consumption, and reduced imports. Long-range, investment-intensive agricultural policies were revamped early in the 1980's amid expectations of declining input supplies. Emphasis then turned to pragmatic policies in order to increase output at the least cost: relaxation of a farm consolidation campaign, elimination of excessive plan indicators, enforcement of legal requirements for preserving farmland, and a positive reassessment of private production.

Agricultural Programs

Czech planners set production and procurement targets for major crops and livestock products, although only the procurement targets for grain and slaughter livestock are mandatory. Despite promises of increased local management autonomy in the "new system of planned management of the national economy" (1982) and discussions on a new cooperative farm law in 1987, little distinguishes Czechoslovak agricultural programs from the orthodox planned model.

Farm programs stress more efficient use of inputs and technology and the quality of output rather than volume increases. This is especially so in livestock production, where growth is restrained to reduce feed imports. Producer and input prices are set centrally and used extensively to influence cropping and livestock patterns. Specific price developments are frequently contradictory, however. Input prices are increased in response to rising costs in industry, but corresponding increases in producer prices frequently lag the rise in input prices in order to hold down retail food prices. Subsidies are required for both farms and food processors to guarantee planned production.

Private producers, overwhelmingly cooperative and state farmers working on their own time, are considered the most efficient at cultivating labor-intensive crops and raising livestock. Programs encourage private production in these commodity areas through contracts with state and cooperative farms. The farms sell inputs to private producers and purchase the output.

Agricultural Program Assessment

Yields of major crops rose steadily through the mid-1980's, per capita consumption approaches West European levels for some foods, retail prices for staples are relatively low, and the living standard on farms is competitive with that of industry. Improvements in farm income and production technology and a young, educated farm labor force are largely responsible.

The costs are high, however. The goals of retail, producer, and input price policy are conflicting. The result is an extensive array of producer and retail price subsidies. In the early 1980's, for example, over 50 percent of state farm operating revenues came from government loans and grants and 10 percent of the federal budget went to retail food price subsidies.

Reducing subsidies and making farms self-financing require fundamental policy changes going well beyond agriculture. The conservative bias of officials and the economic setbacks encountered by neighboring Hungary during its lengthy reform process indicate little movement toward fundamental reforms.

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GERMAN DEMOCRATIC REPUBLIC

Francis Urban

The German Democratic Republic is a developed industrial country with a highly centralized socialist economy. Agricultural production does not meet domestic needs and a substantial quantity of raw and processed products, particularly livestock feeds, must be imported. In 1985, nearly 8 percent of all imports were farm products. Current government policies eschew dramatic shifts from the established system, but are nevertheless going through a "reform of small steps" toward some decentralization of decisionmaking.

The Economy

The nation's per capita real gross national product, the highest in Eastern Europe, was estimated in 1985 at $10,450, compared with a regional average of $6,830. The country's advanced, though not usually state-of-the-art, industries compensate for a relatively poor natural resource base. Apart from low-grade coal and potash, most of the country's raw materials must be imported. Industrial success also enables the country to maintain a high standard of food consumption; farm imports supplement domestic farm output. The economy is centrally planned with 92 percent of the labor force working in the socialized sector. Within the scope of annual and 5-year plans, managers of producing units have only limited authority and their first priority is the fulfillment of the plan targets. Beginning in the early 1980's, all industrial, construction, and transportation enterprises were vertically integrated into giant trusts (kombinaten), which replaced previously ineffectual industrial branch associations. There are about 150 such trusts operating, each employing 20,000-30,000 people. Despite some negative aspects, they have achieved a more successful linking of research, production, and marketing than the previous organization.

The Agricultural Sector

Agriculture and forestry employ 10 percent of the labor force and contribute about 8 percent of national income. Principal crops are wheat, rye, barley, potatoes, sugar beets, and rapeseed. The livestock sector consists of cattle, hogs, sheep, and poultry raised on corn silage, hay, potatoes, feed beets, and oilseed products. The country is not self-sufficient in farm products and imports substantial quantities of grains, oilseed meals, sugar, cotton, and other products.

The socialized farm sector, consisting of cooperatives and state farms, controls 96 percent of the agricultural land. Since the early 1970's, vertical integration of cooperative and state farms has been pursued in accord with a policy aimed at industrializing agricultural output. Wholesale purchase, transport, storage, and application of fertilizers and plant protection agents are provided by cooperative agro-chemical centers, while agricultural machinery is serviced by state-owned stations. Most land improvement and rural construction work is performed by interfarm cooperative organizations.

Policy Goals

Compared with those of most other Eastern European countries, government economic policies are distinguished by their orthodoxy. The principal goal is the maintenance of sustained and stable economic growth within a highly centralized and planned economy. Further improvement of the living standard is also a major policy concern.

Attempts in the 1960's to introduce decentralization and autonomy in the operation of individual enterprises were abandoned in the 1970's in favor of a more efficient centralized system. Nevertheless, gradual changes are being introduced. Producer prices are to be adjusted to better reflect production costs and provide more effective incentives. By the restoration of profit as one of the economic indicators, management will likely have to become more responsible for the financial results of its enterprises.

Emphasis is placed on "key technologies" such as micro-electronics, data processing, automation technology, nuclear energy, and laser equipment. These sectors, counted on to improve productivity, consequently enjoy investment priority. However, attention is also being paid to consumer goods. Quality is to be more strictly regulated and selection of goods is to be widened. There is also a cautious encouragement of the small private sector in the form of easier licensing procedures, fewer operational restrictions, and better access to inputs and credits.

Although the country is a net importer of agricultural commodities, it emphasizes food self-sufficiency in terms of balanced farm trade. The main goal of the farm sector remains increased output and productivity in order to supply the population with wider variety of food and other farm products at stable prices. Producer prices have been regularly adjusted upward toward this end. Consequently, the maintenance of stable retail prices entails continued heavy food subsidies, accounting r nearly a fifth of the national budget.

Agricultural Programs

Agriculture operates within a tight framework. Agricultural cooperative councils, organized at the regional level, are the principal administrative units in transmitting central plan directives to farm organizations and in coordinating production of cooperative farms. Their role has been strengthened at the expense of farm autonomy. The councils are also supposed to transmit the views of production managers to planning authorities.

Cooperative and state farms are being consolidated into large agro-industrial complexes that transform plan directives into an internal distribution of tasks. In line with the policy of industrializing farm output, the complexes are expected to introduce the latest technology and appropriate production techniques. These agro-industrial complexes may lead to the disappearance of cooperative and state farms. Nevertheless, the contribution of private plots is encouraged and assisted.

The highest agricultural priority is to increase crop production. Since there is no unused agricultural land, great importance is attached to more efficient use of resources and introduction of the latest technology to improve yields. At the same time, livestock production is to continue to expand only at the moderate rate of recent years, so that the gap between livestock output and domestic resources would be minimized.

Because progress in the farm sector is considered highly satisfactory, major investments in new fixed capital are supposed to be concentrated in other sectors of the economy. Agricultural investments are to be limited to introducing specific technological innovations and upgrading existing facilities.

Agricultural Program Evaluation

Agricultural programs and policies introduced over the last three decades have been the most successful in Eastern Europe in terms of creating a modern farm sector, assuring plentiful food supplies, and providing a relatively high standard of living for the rural population. The success is attributable to the combined effect of better seed varieties and animal breeds, more and better equipment, educated workers, advanced management techniques, favorable producer prices, and superior modern physical infrastructure. Attainment of success in farming has enabled the country to avoid dramatic changes in its farm programs and policies.

The policy of self-sufficiency has reduced the level of imports, but the country will nevertheless remain a substantial importer of feed grains and other feedstuffs: up to 2 million tons of grain and a million tons of protein feeds, including soybean meal, each year. Although the longstanding goal of increasing grain production has been satisfactory, it has been less so than expected. Growth of the livestock sector, too, has been slower than planned. The difficulty in financing hard-currency feed imports is liable to remain a long-term problem, and the origin of such imports will depend on the availability of hard currency and opportunities for barter trade.

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HUNGARY

Robert Cummings

Hungary has the most technically developed agricultural system in Eastern Europe. The country's excellent land endowment and long farming tradition have helped make it a net agricultural exporter. Thirty percent of all hard currency export earnings come from agriculture. Hungarian agriculture moved away from its centrally planned origins in the mid-1960's and output responded well. General economic reforms were introduced in 1968 and Hungary has the longest experience with economic reforms of any centrally planned economy except Yugoslavia. High costs and inadequate labor and capital productivity restrain agriculture, however, requiring large subsidies to maintain output, exports, and rural employment.

The Economy

Hungary's per capita GNP is third in the region, behind the German Democratic Republic and Czechoslovakia. The country has a rich agricultural tradition. Farming accounted for the bulk of economic activity until the communist government, installed after World War II, adopted Soviet-style economic development emphasizing heavy industry, autarky, and capital transfers out of agriculture. Hungary is a resource-poor country except for its agricultural land and some bauxite and uranium deposits. Substantial raw material imports come largely from other East European countries and the Soviet Union. Hungary's new economic mechanism (NEM) of 1968 is the model against which reforms in other centrally planned economies are often compared. The economy currently operates under a modified form of central planning: officials set macroeconomic targets and adjust prices, interest rates, and import financing to achieve these goals. Individual enterprises and farms have latitude in product selection and marketing. But government intervention remains, particularly in strategic areas such as grain and meat production and basic industries.

The Agricultural Sector

In the mid-1980's, an estimated 23 percent of GNP came from farming and about 20 percent of labor was engaged in farming. Major commodities produced are grain, sunflowerseed, sugar beets, livestock and meat, wine, and fruits and vegetables. The country is a net agricultural exporter, primarily of wheat, meat, and processed foods. Farm goods are a major source of foreign exchange.

Landownership is almost entirely in the hands of state or collective farms. These farms specialize in field crop or large-scale livestock finishing operations. Despite public landownership, the private sector contributes approximately 15 percent of total agricultural output. Most of this production comes from the private plots of state and collective farm members plus auxiliary farms of urban dwellers. Private producers' share of output is extremely high for labor-intensive crops such as potatoes and vegetables (69 percent in 1984) and livestock breeding (23-58 percent, depending on animal type). Private production is integrated into socialist agriculture through production contracts, although producers are free to market goods through local private markets.

Policy Goals

Balanced economic growth in tandem with further expansion of economic reforms are Hungary's main economic goals. Officials are committed to expanding economic rather than administrative tools in directing the economy. Domestic prices are to reflect more nearly prices on the world market and these prices will form the basis of decisions on resource allocation. Economic growth is to come primarily from higher productivity.

Officials retreated from the NEM in 1973 following the oil price explosion and subsequent dislocations in the world economy. Central planners insulated the Hungarian economy and sustained growth with the help of large foreign borrowings. National income increased at an annual average rate of 5.6 percent in 1973-1978, and external debt rose from $1.1 billion (net) in 1973 to $6.3 billion in 1978 as a result.

Rising debt, slowing economic growth, and trade deficits forced a return to the NEM principles at the end of the 1970's. Foreign borrowing was sharply cut in the early 1980's, and domestic consumption, investment, and imports fell as the economy was forced to rely more on its own resources. Average GNP growth in 1980-1985 fell to just over 1 percent per year.

Maintenance of a productive, internationally competitive farm sector is the main goal of Hungarian agriculture. Policies seek to reduce domestic production costs by decentralizing farm management and giving individual production groups responsibility for production decisions and cost control. Farms are also encouraged to diversify into nonagricultural fields such as furniture manufacturing and other light industry to improve profits.

Agricultural Programs

Hungarian central planners draw up annual and 5-year plans. These plans cover the major crop and livestock commodities, foreign trade activities, production costs and prices, and farm income. But, these plans are only indicative. With the exception of strategic commodities such as grain and meat, there are no binding production targets. Cropping and livestock patterns are not assigned to farms. Producer and input prices and taxes are used to influence farm activities.

Collective and state farms produce almost exclusively for the food industry and for export while private production is more oriented to direct supply of local markets. The exception is the extensive supply of young livestock to socialist feedlots by private producers.

State farms tend to be highly specialized. Several farms have built on their specialization and management leeway to develop proprietary "production systems," marketing them to other farms. A production system is a complete program for crop raising. A farm develops seed and provides technical guidelines, assistance, and machinery to clients as necessary.

Reduced state financial support for collective and state farms was supposed to accompany wider farm management authority. Still, most socialist farms continue to receive subsidies. More onfarm management has not brought hoped for improvements in efficiency and cost reduction, and prices paid by food processors are regulated to keep retail prices low. The drive to keep agriculture's roles as an export earner and a stabilizing factor in rural employment has also forestalled efforts to put farming on a self-financing basis.

Agricultural Program Evaluation

Economic reform in agriculture predated the NEM and the retreat from reform in the 1970's for the most part bypassed farming. Much of the impressive output achievements in farming can be attributed to this reform experience. However, despite impressive commodity yields, average annual growth in agricultural output in 1981-85 was only 0.8 percent versus 2.5 percent in 1976-80. Past policy has not adequately addressed Hungarian agriculture's high labor-to-capital ratio, and the relatively high level of inputs used per unit produced. Officials now recognize cost control as one of the main goals for farm policy.

A major shortcoming of farm policy is its inability to control subsidies. Higher procurement prices spur output but they are financed in part by higher subsidies rather than full increases in politically sensitive food prices. High taxes on profitable firms pay for the subsidy bill, discouraging efficient producers and distorting resource allocation. Nonfood sectors as well as the food sector are also subsidized. In the mid-1980's, for example, total consumer and producer subsidies accounted for a quarter of the national budget.

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MONGOLIA

Miles Lambert

The People's Republic of Mongolia is a one-party, socialist state ruled by a presidium chosen from among the legislative body of elected communist party members. Agriculture, a major component of the economy, accounts for at least 40 percent of GNP and over 50 percent of the workforce. About four-fifths of the value of farm output is produced in the livestock sector, and consists of sheep and beef meat, dairy products, wool, and skins. Grain is the principal product of the crop sector.

In 1982, Mongolia's imports amounted to about $1.4 billion, while exports totaled $550 million. Imports are almost entirely industrial goods and consumer durables, with the exception of some luxury farm goods. Exports, on the other hand, are largely agricultural, consisting mostly of animal products, although some grain is exported.

Mongolian policies are strongly influenced by the USSR, with which it is closely aligned. The USSR provides considerable material support to Mongolia, and is by far its largest trading partner, accounting for nearly 80 percent of foreign trade. This relationship allows Mongolia to carry a relatively large foreign trade deficit. In recent years, however, the USSR has encouraged a broadening of Mongolia's trade relations, both within the CMEA group, of which Mongolia is a member, and with nonsocialist states. Foreign trade is a state monopoly.

Mongolia seeks to build an "agrarian-industrial" economy. The country's considerable mineral resources are to be developed. Exports of nonfarm goods are to increase and imported consumer durables are to be partially replaced with domestic goods. Agriculture is to be modernized partly in order to release scarce labor resources for those purposes. Also, farm output is to be less heavily dominated by the livestock sector. Vegetables and fodder are to receive priority attention, with extension of arable area the principal means of increasing output. Agriculture is conducted almost entirely by socialized production units that are guided by state plans and paid through state-set procurement prices.

Mongolia has been able to transform itself from a nomadic, pastoral economy into a country of sedentary animal husbandry. It has even become a net grain exporter. The notion of Mongolian "self-sufficiency" in agriculture, however, is an illusion, as evidenced by the country's agricultural goals. The emphasis on vegetable production suggests pentup demand, frustrated by the state in its conduct of foreign trade. Animal products are exported because of foreign trade exigencies, rather than because of inability to absorb them in domestic markets.

POLAND

Francis Urban

Poland is the largest country in Eastern Europe. Though industrialized, its agricultural sector remains important, accounting for 16 percent of national income and employing nearly 24 percent of the labor force. The sector is dominated by private farms. The current goals of agricultural policy are increased availability of food, self-sufficiency in grain production, balanced agricultural trade, and increased exports to service external debts.

The Economy

Poland has been run by the communist Polish united workers party since 1948. The party adopted a socialized and centrally planned economic system, closely patterned after the Soviet model. Industry and commerce were nationalized, except for small service and artisan establishments. Emphasis was laid on rapid industrialization based on capital-intensive heavy industries. During the past four decades, Poland has changed from an agrarian to a largely industrial country, producing textiles, chemicals, transportation equipment (automobiles, ships, aircraft), machinery, and a wide variety of precision and electronic equipment, including computer hardware. The country is also a major producer of coal, sulfur, and copper and has substantial deposits of lead, zinc, and iron.

Despite advances, the Polish economy was brought to near collapse at the end of the 1970's by a combination of factors such as forced industrialization without sufficient expenditure on infrastructure, increasingly rigid and inefficient planning mechanisms, neglect of agriculture, and social unrest. Heavy international borrowing in the 1970's to expand industrial production without reference to rapidly changing world economic conditions burdened the country with huge foreign debts. These debts had risen to $33.5 billion by the end of 1986. Polish foreign trade, relatively modest but growing, accounted for 4 percent of GNP in 1985 and was valued at $23.3 billion (exports plus imports).

The Agricultural Sector

Legislation passed between 1944 and 1950 nationalized all farms exceeding 100 hectares (247 acres) in western and northern Poland (former German lands) and farms exceeding 50 hectares in eastern and southern Poland. Church and forest lands exceeding 25 hectares were also nationalized. However, attempts after 1948 to collectivize peasant farms failed because of stiff resistance by farmers and were abandoned after 1956. As a result, small private family farms dominate Polish agriculture, controlling nearly 77 percent of agricultural land. The remainder is in state farms and, to a lesser extent, cooperatives. Very small private farms of 0.5-2 hectares occupy about 6 percent of agricultural land. Larger farms, 2-10 hectares, occupy 50 percent of farmland. Their number is decreasing. Farms exceeding 10 hectares, on the remainder of the land, are growing in number.

Principal crops are rye, wheat, barley, oats which are grown on about 57 percent of agricultural land. Wheat cultivation is increasing at the expense of rye and oats. The country is approaching self-sufficiency in grain production. Both potatoes and fodder crops (hay, silage corn, alfalfa) are grown on about 30 percent of farmland each. Other important crops are rapeseed, sugar beets, pulses, fruits, and vegetables. Hogs account for the largest part of livestock inventory, followed by cattle, sheep, and horses. Poultry production is also important, representing 12 percent of total meat production. Livestock products account for 46 percent of the total gross value of annual farm production.

Less than 10 percent of Poland's foreign trade is agricultural. Major agricultural exports are livestock and livestock products and fruits. Principal imports include hard and durum wheat, protein feeds, and meat. The U.S. share in Polish agricultural trade stood at 1.6 percent of imports and 11.6 percent of exports in 1986, down from 21.8 and 12.8 percent in 1980.

Policy Goals

Poland's principal policy goal is to reactivate a stagnant economy. Under the combined pressure of external debt crisis and the solidarity movement, a reform program was introduced in an effort to dismantle the "command and quota system" of the economy and replace it with more a flexible, decentralized market-oriented model. The reform stressed the principles of enterprise autonomy, self-government, and self-financing. Wider wage differentials to improve production efficiency were also provided for. However, implementation of the reform has been partial, with disappointing results.

The government initiated discussions in 1986 on the second stage, or "intensification," of the reform. New laws were passed to encourage joint ventures with foreign companies, prohibit certain state monopolies, allow some enterprises to export directly, and let exporting firms retain a portion of hard currency earnings for their own use. Other measures under discussion include more serious enforcement of a recent bankruptcy law, more private and mixed private-state ventures, the chartering of commercial banks independent of the government, an increased role for worker self-management, smaller corporate taxes, larger pay differentials, and more freedom for enterprise directors.

Current Polish foreign trade policies have been formed under the pressure of the large foreign debt service. These policies aim at maximizing exports and restraining imports. However, export expansion was held back by the system of monopoly foreign trade organizations until the reforms introduced since 1982 relaxed the restrictions and allowed some producing firms to engage in foreign trade on their own account. The trend to liberalize foreign trade and improve the quality of goods offered for export will likely continue.

Despite its importance in the Polish economy, the farm sector was seriously neglected by successive communist governments. Investment was insufficient, private farmers were discriminated against in input supplies and delivery of social services, social amenities in rural areas remained poor, and there was an exodus of younger people to urban centers. Under pressure to improve food supplies, the government increased farmers' incentives throughout the 1970's, but continued to discriminate against private farmers. Domestic food supplies were supplemented by agricultural imports from the West and reductions in food exports.

A reverse in policy was made in 1981, under pressure of an acute economic crisis. The most important measure taken was a constitutional amendment of 1983 guaranteeing the existence of private farms. The government also promised equal access for inputs to private farmers, state farms, and production cooperatives. To deal with the hard currency shortages and the foreign debt problem, the government is trying to reduce agricultural imports, while boosting domestic production by increasing farm prices and improving the supply of inputs. A tax law implemented in 1985 introduced a new flat tax on land, based on soil quality and proximity to urban centers. In addition, a tax on the income of highly profitable specialized farms may increase the tax burden of more efficient farmers and negatively affect production.

Agricultural Programs

Current Polish farm programs have been formulated since 1981 in efforts to stem social unrest and increase the efficiency of the farm sector. The programs provide for equal treatment for private, state, and cooperative farms in the supply of inputs and other services, as well as in prices paid for deliveries to state procurement agencies. Farm success would be judged basically by profitability measures.

Centralized direction has been abolished and state and cooperative farms have been given more autonomy, particularly in financial matters. State influence on the farm sector is to be indirect through timely updating of procurement prices, changes in prices for capital goods and inputs, and tax measures. Subsidies are to be gradually eliminated, except for some activities of general concern such as seed production and raising pedigree stock.

Potentially profitable farm operations are to be encouraged through such incentives, as greater depreciation allowances and favorable taxes. Farm investment is to be covered by profits. Unsuccessful farms will be allowed to go bankrupt. Remuneration of employees on state farms is to depend on the farms' financial performance, since wages are to be paid from profits. Limitations on cooperative farm members' income have been lifted. Income distribution is to be decided by members without state interference. The stability of private family farms has ostensibly been ensured by a 1983 constitutional amendment guaranteeing equality to the several sectors of agriculture.

Agricultural Program Evaluation

The agricultural policy and programs pursued in Poland in the last four decades have not scored any major successes. Attempts to socialize farming failed, while also forcing the dominant private sector into a prolonged stagnation. Although Poland is approaching food self-sufficiency, that circumstance reflects constraints on trade rather than saturation of consumption. The country will, in any case, remain a significant importer of wheat, protein feeds, and cotton. The effect of the new policy initiatives for agriculture depends on their implementation. Though the constitutional amendment of 1983 provides guarantees to private farmowners, it stops short of recognizing private agriculture as a permanent element of the Polish economy. Moreover, the principle of equality was not fully adhered to in the first half of the 1980's.

Current programs have not overcome the problem of inefficiency in Polish agriculture, rooted in the preponderance of very small-size and fragmented farms. Most farms are too small to ensure their owners full employment and adequate income. At the same time, they are too large to allow owners to seek gainful other employment. This farm structure is responsible for the relatively high rate of employment in the sector, its technical backwardness, and low labor and land productivity. The increase in the number of larger farms (exceeding 10 hectares) is a positive development.

The question of the supply of inputs and services remains unresolved. Polish industry supplies farmers with a mere 5 percent of their total inputs, compared with 30 percent in EC countries. Also, modern machinery and spare parts are in perennial short supply and of poor quality. Investment in transport, storage, and food processing is also insufficient. Though current programs call for a sharp increase in food production, the back-up facilities in the food production chain are not yet capable of handling the increases. The government has failed to allocate promised investment amounts to the food producing complex.

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ROMANIA

Robert Cummings

Romania is a major agricultural producer in Eastern Europe. Wheat, corn, sunflowerseed, and sugar beets are the dominant crops. Livestock production is also extensive. Romanian agriculture is centrally planned but the small private sector is a significant producer of meat, fruits, and vegetables. An estimated 28 percent of GNP comes from agriculture. Recent policy stresses reduced imports and higher output of all commodities. Domestic consumption is also restricted and any production increases are for export in order to reduce foreign debt. The importance of international farm trade now centers exclusively as a foreign exchange earner. Imports are down as a result, and the U.S. export market in Romania has shrunk considerably since the early 1980's.

The Economy

Romania is among the least industrialized economies in Eastern Europe, despite rapid development following World War II. The Romanian communist party, headed by Nicole Ceausescu since 1965, governs the country. An extensive personality cult surrounds Ceausescu. With the exception of Albania, he directs the most orthodox communist economic and political system in Eastern Europe.

The communist party formalized its political control shortly after World War II. Subsequent economic development resembled that of the Soviet Union: rapid heavy industrialization, collectivization of agriculture and resource transfers to industry, and centralized economic planning. Central authorities oversee all economic activity down to the plant, farm, and retail market levels. Fulfillment of gross output targets is the main measure of economic performance. Profit plays a minor role in economic decisionmaking.

The Agricultural Sector

Romanian agriculture as a share of GNP declined steadily following World War II. Approximately 28 percent of GNP now comes from agriculture, mainly from grain, oilseed, sugar beet, and livestock production. Farm employment is down to less than 30 percent of the workforce from 50 percent in 1970. Romania is a traditional major net agricultural exporter, particularly of grain. But, production setbacks, poor management, and the decline of the sector's size have produced food shortages and much reduced exports.

Over 85 percent of agricultural land is in the socialized sector as either state or cooperative farms. Private agricultural land is in hilly areas where large-scale mechanized farming is impractical. Cooperative and state farm families have small private plots, the produce of which can be sold on regulated private markets.

Policy Goals

Rapid industrial development remains the main economic goal. The Romanian communist party stresses development of heavy and raw materials industries at the expense of agriculture and light and service industries. Development was swift in the 1950's and 1960's. Annual GNP growth in 1951-63 was 6 percent, for example, dropping to just over 5 percent for the remainder of the 1960's. Industry's share in GNP grew steadily, reaching nearly two-thirds by 1985.

Domestic and external constraints severely curtailed growth in the late 1970's, however, bringing on a severe economic downturn during the 1980's. The large increase in world oil prices and world recession in 1979-80 severely reduced net hard currency earnings. Romania's net debt peaked in 1981 at $10 billion. Investment returns from such massive foreign borrowing proved insufficient to service the maturing debt. Officials made rapid repayment of the debt a major goal and imports and domestic consumption declined as a result. Tightening supplies of labor, capital, and raw materials also slowed growth as did the cumulative effects of years of economic mismanagement.

Various economic reforms have been introduced but none have fundamentally changed economic management nor improved performance. The leadership remains committed to the guiding role of the communist party, denying the applicability of Hungarian- or Soviet-style economic reform to Romania.

The overriding farm policy goal is increased production across all commodity groups. Higher output is to displace imports and support rising exports, preferably to convertible currency markets. Improved output is to come through higher labor discipline and efficiency and use of improved production technology.

Overall, the government is trying to improve agricultural productivity by imposing the results of scientific and technical research administratively, and by ordering changes in organiztion. Nowhere is there serious discussion of altering existing price, wage, and credit policies.

Agricultural Programs

There are no agricultural programs analogous to those in the United States. Production, purchase, and use of all commodities, delivery of inputs, as well as prices are controlled by the ministry of agriculture and the planning commission. Even the private sector is controlled. Private producers frequently sign production and delivery contracts with state and collective farms that effectively tie their activities into planned agriculture. Central involvement is most pervasive in the grain and feed-livestock sectors and least in fruits and vegetables.

Central planners develop annual and 5-year plans for crop and livestock production for each collective and state farm. The center and farms negotiate targets, but the final targets are legally binding on producers. The plans also guarantee inputs for each farm, although farms frequently do not receive the guaranteed levels because of chronic shortages. Plans are transmitted to farms through regional planning organizations or directly to large producers.

Prices for farm output and inputs are set by the state at fixed levels. Increases in producer prices for output are moderated in order to hold down costs in the food industry while input prices usually rise to cover higher costs. Extensive subsidies from the national budget cover resulting farm losses. Retail food prices in socialized outlets are set administratively and prices on cooperative and free markets fluctuate with supply and demand, but only within a set range.

The most recent economic reform began in 1979. The new economic mechanism (NEM) covers the entire economy and its major effect on agriculture was a substantial change in farm structure. Cooperative farms became further integrated with state farms through the establishment of agro-industrial councils (AIC). AIC's are designed to integrate and unify all agricultural activities in a region, including food processing, under a single management authority.

The "self supply program" was introduced in 1980 in response to declining agricultural performance. The program maximizes sales of farm goods to state procurement centers while minimizing outlays from central stocks for the retail food market. The program maintains tight state control over resources, contains strict enforcement methods, and amasses exportable food stocks by restricting domestic supplies.

Agricultural Program Evaluation

Romanian agricultural programs have not sparked improvement in farm performance. Substantial increases in grain yields and production have been reported, but the statistics are questionable. Continuing food rationing makes the results highly suspect. Livestock performance has stagnated and feed supplies are grossly inadequate, in part because of the sharp decline in agricultural imports.

Although agricultural exports generally declined in 1980-85, production shortfalls mean a still substantial share of total output is allocated for export. Rationing of some foods, particularly meat and other livestock products, remains widespread. Per capita consumption of meat has likely declined from early 1980's levels. Extensive controls over the marketing of private sector output compound the poor food supply and encourage producers to produce only for their own needs and to meet their contract agreements with state and collective farms.

Romania's role in world agricultural trade is severely reduced because of restrictions on imports. Farm imports in 1984 ($660 million) were less than half those of 1980. Imports from the United States in 1981-85 were a third lower than in 1976-80. There is no prospect for reversal of this trend because lower domestic food consumption, the debt burden, and tight convertible currency supplies will restrain imports from all sources.

The organizational bias of Romanian farm policy ignores longstanding financial problems. Unprofitable farms are widespread as are subsidies from the central government. Retail food price subsidies are also extensive. Food prices on private markets are intentionally kept low to relieve pressure on family budgets despite the inherent disincentives for private producers. Agricultural investment continues to be skewed in favor of large-scale irrigation and infrastructure projects, while poor machinery and spare parts availability create bottlenecks.

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SOVIET UNION

Robert B. Koopman

Soviet agriculture has suffered from slow growth and rapidly rising production costs over the past 20 years. Soviet policy goals have focused on improving growth, increasing per capita consumption, improving factor productivity, and, more recently, reducing imports. The programs implemented to reach these goals include changes in investment strategy and price manipulation. Agriculture's share of GNP, at around 20 percent, is much larger than in most industrialized nations. The Soviet Union is among the top three producers of meat, wheat, potatoes, sugar beets, fish, and cotton in the world. Artificially low retail prices, however, result in considerable excess demand for most agricultural products. As a result, the Soviet Union accounts for about a sixth of world grain imports and annually imports nearly a million metric tons of meat.

The Economy

The Soviet Union is the second largest economy in the world after the United States in terms of overall GNP, though it ranks much lower in per capita GNP. The communist party of the Soviet Union (CPSU) is the only political party. Although party and governmental bodies are nominally separated, the CPSU determines all governmental policy. The Soviet Union is the oldest and largest example of a centrally planned economy. All major decisions regarding resource allocation are determined by central government directive.

Soviet economic growth has slowed substantially since the mid-1960's. The slow growth is attributed to inefficient input use and little technological innovation. The Soviet system does not reward efficient input use nor introduction of technological change. Planners increasingly rely on imports of Western technology and machinery to spur innovation. Hard currency to pay for the imports generally comes from exports of raw materials, principally oil and gas. Soviet manufactured goods are of low quality with little consumer acceptance on the world market.

Since the 1920's, Soviet economic policy has favored development of heavy industry over agriculture, services, and transportation. Industry has received the major share of investment resources, material inputs, and planner's attentiveness at the expense of the other sectors. Since the early 1960's, however, agriculture's share of investment and material inputs has grown considerably, reflecting the leadership's desire to improve the sector's performance.

The Agricultural Sector

The USSR is among the world's largest producers of grains, meat, milk, potatoes, fish, and cotton, but is still among the world's largest importers of grains and meat. Cotton is its only major agricultural export. Soviet agriculture contributes 20 percent to GNP while employing 20 percent of the labor force and 27 percent of capital investment, exceptionally high figures for an industrialized nation. Soviet agriculture is currently viewed as a major hindrance to the country's development because it absorbs large quantities of inputs with only marginal production gains, denying much needed inputs to the industrial, service, and transportation sectors.

Policy Goals

Recent economic objectives have focused on increasing production growth rates, transforming growth from extensive to intensive means, improving quality of goods produced, and encouraging technological innovation. The primary agricultural policy goal since the early 1960's has been increased production. A closely related goal is increased per capita consumption of meat, fruits, and vegetables to bring Soviet consumption patterns and levels up to Western standards. Soviet per capita meat consumption is 55 percent of the U.S. level, while fruit and vegetable consumption varies significantly by season and region.

In the early 1970's, the Soviets started to rely on agricultural imports to maintain per capita consumption growth. Prior to 1970, Soviet agricultural imports were kept to a minimum because reliance on nonsocialist countries for agricultural imports was viewed as a symbol of the system's failings, and exposed domestic goals to foreign political manipulation. Thus, great emphasis was put on agricultural self-sufficiency. Through the 1970's and early 1980's, however, the Soviets loosened the self-sufficiency constraint for grains and a wide variety of other agricultural commodities. The change was due in part to slow growth in domestic production and in part to increased hard currency earnings from oil and gas exports to the West. The self-sufficiency goal, however, has taken on new significance since the mid-1980's because of declining export earnings and the experience with the U.S. grain embargo.

Modernization, another agricultural goal, requires increased use of agrochemicals, fertilizers, and machinery. Modernization of farming is viewed as a necessary precondition to self-sufficiency.

Increased factor productivity is also an objective of great importance. Unproductive input use combined with a huge influx of inputs resulted in spiraling production costs. The Soviets hope to improve input productivity and release inputs, especially labor, for use in other sectors. Reducing skyrocketing consumer subsidies is a major goal. As production costs rise, subsidies to farms increase while retail prices remain nearly fixed at mid-1960's levels.

Agricultural Programs

Soviet programs include redirecting investment funds, manipulating prices paid to producers, expanding marketing opportunities for socialist farms, reorganizing the state agricultural administrative apparatus, changing the laws regarding private plot producers, increasing incentives to improve input use, and trying to implement better planning.

Agriculture's priority for investment funds in the 1960's and 1970's focused on supplying farms with industrial inputs, particularly machinery, agrochemicals, and reclaimed land. By 1980, however, bottlenecks and low-quality production in the input supply industries in combination with the food processing sector's low level of development led to a change in investment allocation away from the farms to these downstream and upstream sectors. Onfarm investment policy now focuses on balancing the supply of machinery and its complementary inputs.

The state increased prices paid to producers in an effort to improve quality and increase the quantity of agricultural production. The Soviets tried to maintain farm profitability in the face of rising input prices through a series of price increases. Soviet policy toward input manufacturers allows them to raise prices of goods sold to farms while farms selling their output to the state face less frequent price increases. Soviet planners more recently have, on a limited basis, increased the emphasis on using changes in relative prices to directly influence the mix of output toward higher quality products. This approach has been used to increase procurement of food-quality wheat, reversing a trend toward feed wheat production.

Farms and local authorities have been given wider access to nonstate marketing outlets to improve the quantity and quality of foodstuffs delivered to the public. The nonstate markets have generally higher prices that are influenced by supply and demand. The higher prices provide incentives to increase supply and discourage waste. Products bought in these nonstate networks help reduce the state's subsidy burden.

Changes in the organizational hierarchy are also being used in an attempt to increase factor productivity and overall output. Creation of the state agroindustrial committee (gosagroprom) was an attempt to improve the quality of planning and improve coordination among members of the agricultural input supply organizations (these are separate from the input producers), farms, and food processing industry.

The state is also expanding the private sector's role in food production to help compensate for fluctuations in socialist sector production. Laws have been changed to allow private plotholders to raise more livestock. Plotholders may now raise unlimited numbers of livestock as long as they have contracted with socialist sector farms for the animal products. The contracted output counts towards the socialist farms, plan fulfillment and the plotholder is paid by the farm for raising the animals. The state has increased its insistence that socialist sector farms provide more of the necessary feed and veterinary supplies to assist the plots. The state also demands that input industries produce tools and machines specifically designed for use on small plots.

The state has implemented programs to increase factor productivity and encourage better use of inputs and services on the farms. Thus labor remuneration and service organization fees are to be based on their direct contribution to the harvest result rather than just the execution of intermediate steps. Any savings in input use relative to the plan are to be shared with workers to encourage thrifty use of inputs. The use of contracts between the farms and smaller labor teams within the farms has been promoted since 1982. In 1986, such contracts began to be made extensively with families who were rented land, buildings, and machinery.

The reorganization of administration places more emphasis on improving the economics behind planning decisions. This is evidenced in the livestock sector by increased use of fodder for feed rather than grains, and a switch from meat production growth by inventory expansion to growth by increased animal productivity. The better balance in farm input use also reflects the emphasis on better planning, as planners not only plan input production but also try to make sure the inputs are combined efficiently.

Agricultural Program Evaluation

The Soviets have substantially failed in attempts to increase self-sufficiency and stabilize yields. Production and factor productivity growth remains slow while the retail price subsidy burden continues to grow. Agriculture is still considered a poor investment for scarce resources, using valuable resources at a time when both the industrial and defense sectors need more inputs to meet the challenge of the West's modernization. Some progress has been made in per capita consumption, but growth declined dramatically in the late 1970's and early 1980's. What little growth was attained in the later periods resulted from increased imports of meat and grains. Large-scale agricultural imports continue to absorb valuable hard currency that could be used to purchase Western technology and machinery.

The programs used to reach overall agricultural goals have been unable to overcome the systemic restrictions of the centrally planned economy. The investment strategy that initially poured more inputs onto the farms failed because farms were not encouraged to effectively use the inputs. The lack of a strong profit motive combined with state support preventing financial failure means that farms can continue to demand increasing amounts of inputs and not suffer the consequences of poor input use. Thus, the investment programs are costly in financial terms and disappointing in production terms.

The use of contracts between private plotholders and socialist sector farms has been moderately successful in improving livestock production. Expansion of this practice continues. Other state programs have apparently been more rhetorical than real, with little or no increase in socialist farm support for plotholders; specialized equipment for plots is still scarce. As a result, private plot contribution to agricultural production remains unchanged. At the same time, contract relationships in which families use state land and machinery have apparently had significant success and are being widely promoted.

Factor productivity has not improved. Increments of capital and material inputs continue to bring smaller increases in output. The poor productivity of new inputs is partly due to the lack of farm manager incentives and partly due to a lack of labor and service organization incentives. The centralized system guarantees the majority of a worker's and service organization's income regardless of their effect on the harvest.

Retail price subsidy growth remains unchecked. Continued state use of producer price increases to stimulate production combined with stable retail prices have made it impossible to reduce subsidies. Soviet policymakers hoped that increased factor productivity would decrease production costs, reducing pressure to increase procurement prices and holding the line on retail price subsidies. But, retail subsidies have increased fourfold in recent years.

Soviet agricultural policies have been ineffective in bringing about increased production, stable yields, increased factor productivity, and lower retail subsidies. While somewhat effective at raising per capita consumption, the policies have been enormously costly to the economy. Slowing economic growth in all sectors of the economy and the concomitant increase in demand for scarce inputs pressured Soviet planners to improve the agricultural sector's performance. Soviet agriculture's claim on labor and capital resources is uncommon for a country of its level of industrial development. Further need to use hard currency resources to import agricultural products and the inability to free up agricultural resources for use in other sectors of the economy pose substantial obstacles to modernization of the Soviet industrial sector.

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YUGOSLAVIA

Nancy Cochrane

Yugoslavia, while a socialist country, is not part of the Soviet bloc. It pursues a foreign policy of nonalignment and practices a quasimarket form of socialism known as workers' self-management. Two-thirds of its agricultural production comes from the private sector. The remaining third comes from the large, vertically integrated and more productive kombinats. Yugoslav agriculture suffers from low productivity in the private sector and profitability problems caused by controlled prices and raging inflation. The goals of agricultural policy are self-sufficiency, increased efficiency in the socialized sector, and integration of the private and socialized sectors.

The Economy

Yugoslavia is a federation of six republics and two autonomous provinces. It is made up of five major nationalities, plus several significant minorities. There are four official languages, along with sizable groups who speak other languages, including Albanian, Hungarian, Romanian, and even Turkish. There are also significant economic disparities, with the relatively rich republics Croatia and Slovenia in the north and extreme poverty in the south, particularly in the autonomous province of Kosovo. The federal government must balance all these conflicting national, ethnic, and economic interests and is relatively weak as a result.

Although ruled by the communist party, Yugoslavia is not a centrally planned economy and is not a member of the Council for Mutual Economic Assistance (CMEA). Josip Broz Tito, who led the country from 1945 until his death in 1980, broke with Stalin in 1948 and shortly thereafter introduced workers' self-management and a quasimarket form of socialism. At the same time, Tito initiated a foreign policy of nonalignment.

Since Tito's death, Yugoslavia has been governed by an eight-member presidency, with one member from each republic and province. One member of this group is selected as president for a term of 1 year. The prime minister is the head of the federal executive council and has a term of 4 years. Representatives from all eight republics and provinces must unanimously agree to every federal decision. This cumbersome process has virtually paralyzed federal action and produced an extreme lack of unity among regions.

Yugoslavia has recently suffered from severe economic problems. Per capita GNP in the mid-1980's has been second lowest in Eastern Europe. The inflation rate in some years was close to 100 percent. Yugoslav international trade suffered huge deficits in the late 1970's and early 1980's. These deficits were financed by foreign borrowing, and Yugoslavia's foreign debt reached $19 billion in 1983. The government is forced to seek refinancing practically every year.

The Agricultural Sector

The agricultural sector produces about 13 percent of GNP and employs around 20 percent of the labor force. Most agricultural production comes from the plains in the northeast, relatively small in area but extremely fertile. The rest of the country is quite mountainous and ill-suited to large-scale production. Major crops are wheat, corn, sunflowerseed, soybeans, and sugar beets. Yugoslavia is a net agricultural importer in most years. Major exports are red meat, canned pork, corn, tobacco, fruit, and wine. Yugoslavia imports soybeans and meal, cotton, hides, vegetable oil, sugar, and, in some years, wheat.

Two-thirds of the agricultural production comes from the private sector. Private farmers hold 83 percent of the arable land and comprise over 90 percent of the agricultural labor force. The maximum size of a private farm is 10 hectares, but the average farm is only 3.2 hectares consisting of as many as nine plots. Productivity is low in the private sector, the result of extreme fragmentation, inadequate investment, and difficulties in obtaining inputs.

The socialized sector consists of slightly over 2,700 vertically integrated conglomerates known as kombinats. These are socially (not state) owned and self-managed. These organizations have considerably more autonomy than do the state and collective farms in a true centrally planned economy. They are required to operate at a profit, but they do receive subsidies for certain inputs and for unprofitable lines of production such as beet sugar. The socialized sector is mainly involved in large-scale production of grains, oilseeds, sugar beets, hogs, and poultry. The more labor-intensive products are left to the private sector.

Policy

Economic policies are aimed at achieving a positive trade balance and reducing debt burden, controlling inflation, and overcoming the extreme disunity in its domestic markets. These problems arose because of the inability of the federal government to prevail over the conflicting agendas of the republics and provinces.

The goal of international trade policy has long been to control imports and promote exports. These goals were strengthened in the foreign exchange legislation passed in 1986. Prior to this legislation, enterprises had been allowed to retain 50 percent of their foreign exchange earnings and to use them for necessary imports. These firms were also selling some of this foreign exchange to other enterprises at premium rates on a "grey market." The result was excessive import growth. With the 1986 legislation, firms must now exchange all foreign exchange for dinars and then apply for import rights, which are awarded on the basis of export performance and national priorities. The legislation also provided for surcharges and quotas on the import of certain goods, including most agricultural commodities.

Domestic measures have been aimed at promoting enterprise efficiency and controlling the escalation of wages and prices. Unprofitable firms are now to be liquidated. Wage increases are not to exceed productivity growth. Lack of success in these directions resulted in the passage of the intervention law in 1987, which rolled back wages to their level during the last quarter of 1986. With 100-percent inflation, this action constituted a drastic cut in real wages.

The government has also introduced several amendments to the Yugoslav constitution intended to strengthen the federal government and reverse the tendencies towards extreme decentralization. These amendments are two-pronged: they restrict the power of republic governments to legislate in areas under federal jurisdiction and they, in effect, reduce worker participation in enterprise decision processes.

Agricultural policies aim at achieving self-sufficiency in the production of basic foods. The government desires to improve the diet and basic living standards of the population, but at the same time restrict imports. Efforts are especially being made to bolster Yugoslavia's sagging livestock production, which has recently suffered severe profitability problems. Thus, the government is using various policy tools to promote domestic production of feeds and reduce the need for imports. Livestock producers are encouraged to increase use of forages. High priority has been placed on the expansion of oilseed production.

For much of Yugoslavia's post-war history, policies were also designed to increase the share of the more efficient socialized sector in agricultural output and reduce the role of the private sector. However, the government has recently backed away from such policies and is now attempting to raise productivity in the private sector. This is being done mainly through measures promoting cooperation between private farmers and the socialized sector.

Agricultural Programs

Agricultural production and trade goals are laid out in annual and 5-year plans. However, these plans have no legal force, but represent only the government's desired priorities. To induce producers to comply with these goals, the government uses procurement prices, input subsidies, tariffs, import quotas, and similar measures. The government has also attempted to gain more control of private sector output by encouraging cooperation with the socialized sector.

There are two sets of prices for agricultural commodities: (1) the selling price, the maximum that can be charged, and (2) the protective price, which is guaranteed in the event that market prices fall below that level. The protective prices are set by the federal government. Until 1985, selling prices were also set by the government, but are now established through "self-managed agreements" among all participants in the "reproduction chain" of a given commodity.

To compensate for the rapid rise in input costs, the government has introduced a variety of input subsidies. Subsidies ranging from 10 to 30 percent are provided for the purchase of fertilizers, plant protection agents, and high quality seed. Socialized organizations and private producers who cooperate with the socialized sector also benefit from subsidies on tractor fuel.

Subsequent to alignment of interest rates with inflation, as mandated by International Monetary Fund, the government has also provided interest subsidies for capital investment.

The frequent rises in procurement prices have caused domestic producer prices to be substantially above world prices. This situation has made it more difficult to control imports, since producers of feed concentrates, vegetable oil, and other processed goods find it cheaper to import the needed raw materials than to buy them on the domestic market. The government response has been an elaborate system of import surcharges, quotas, and other import controls. Many agricultural commodities are subject to "equalization taxes," equal to the difference between world and domestic prices and intended to protect domestic producers. In some years, these taxes have been waived for commodities considered crucial to the economy. These taxes are also sometimes waived for imports financed through commodity credit programs, including the U.S. Commodity Credit Corporation GSM-102 program. Imports of other agricultural commodities, including soybean meal, are under quota.

The government is not able to exert any direct pressure on the private sector, which is responsible for two-thirds of Yugoslavia's agricultural production. The government sometimes has difficulty in fulfilling its plans because private farmers refuse to sell their output if they do not like the prices. At times, for example, the country has had to import wheat even though the total crop was more than enough to meet the needs of the population; the private wheat producers found it more economical to feed the wheat to their livestock. The response has been various measures to induce private farmers to sign contracts with socialized organizations. Such contracts are similar to those in other socialized countries: farmers contract to sell their output in return for easier access to inputs, favorable credit terms, and similar benefits. Farmers are also encouraged to join cooperatives, roughly analogous to marketing cooperatives in the United States. The cooperatives buy their members' output and sell it to the processing organizations. In return, the cooperatives provide health insurance, pensions, veterinary, and other services to their members.

Raising the maximum size of private farms has long been a goal, but so far done only in mountainous and other less fertile areas. However, a proposed amendment to the constitution will raise the maximum for all farmers. The government is also trying to address the problem of fragmented farms by facilitating consolidation and "rounding off," whereby farmers exchange some of their plots for others that are contiguous to one another.

Agricultural Program Evaluation

Despite the government's continuing efforts to provide attractive procurement prices for important commodities, the price rises are quickly nullified by accelerating inflation. The government will announce a substantial price increase at the time of planting. But, by the time the crop is harvested, input costs have risen so rapidly that producers still have difficulty realizing a profit.

The cost-price squeeze is particularly critical in the milling and meatpacking industries. Livestock procurement prices were raised to compensate for the high cost of corn, but government efforts to avoid drastic rises in food prices prevented meatpackers from raising their prices to a level that would cover their costs. Flour mills are in a similarly difficult situation.

Import controls introduced with the 1986 foreign exchange legislation did help to conserve foreign exchange. However, they do not appear to have negatively affected agricultural imports. The effect has been an increase in countertrade. This trend has actually benefited Yugoslav exporters since, with domestic prices so much higher than world prices, they could suffer huge losses exporting directly for cash. However, the increased emphasis on countertrade has hurt U.S. exports to Yugoslavia, particularly of cotton. Yugoslavia has turned increasingly to Egypt and China for cotton, delivering tractors, automobiles, and spare parts to Egypt and performing construction work in China.

Yugoslavia's private sector initiatives have had limited success so far. Farmers have been reluctant to join cooperatives; only 300,000 belonged in 1985. About half of Yugoslavia's 2.5 million private farmers cooperate in some way with the socialized sector. But, there have been numerous complaints that prices paid are too low and that the socialized organizations have failed to provide the inputs and services stipulated in their contracts. While Yugoslav economists have shown that large farms approaching the 10-hectare maximum are more productive even than the socialized sector, others have questioned the value of raising the maximum when the average farm is only 3.2 hectares. To date, efforts to consolidate holdings have run into logistical problems in setting up exchanges of equivalent plots of land.

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REGIONAL SUMMARY OF LATIN AMERICA AND THE CARIBBEAN

John E. Link

The countries of Latin America and the Caribbean vary widely in all aspects of their economies. Total population is about 395 million people, nearly 70 percent urban, and growing at about 2.4 percent per year. Per capita income is higher than in many other developing regions, averaging $2,140 in 1986. Income distribution among countries and within countries is heavily skewed.

Latin America and the Caribbean have 170 million arable hectares (420 million acres) of which 8.5 percent is irrigated. Agriculture accounts for about 11 percent of gross domestic product and has been growing in the 1980's at slightly over 2 percent per year. The region is a net exporter of arm products, minerals, fuels, and fish, about 30 percent of the region's exports abd about 12 percent of its imports. Major agricultural exports include coffee, sugar, soybeans, beef, cotton, cocoa, corn, bananas, and wheat.

Monetary policies are designed to improve the balance of trade and to curb inflation. Currencies have been devalued frequently of multiple exchange rate systems instituted to maintain trade competetiveness. Foreign exchange proceeds usually have to be surrendered to the central banks.

Imports are restricted in several ways, the most common being the use of import licensing, exchange licensing, and/or centralized purchasing. In Mexico, Columbia, and Venezuela, import licenses are needed for most bulk commodities. <u>Ad valorem</u> duties or specific tariffs are also used to limit imports and are in use in most countries of the region. Certain items, usually luxury as defined by the government, are directly or indirectly prohibited. Many farm imports are controlled by granting monopoly importing authority to state trading agencies or selected firms. A prime example of this is in Brazil where the government imports all wheat.

Export taxes are levied on many of the major agricultural exports and are a major source of government revenue. In addition, export licenses are required for many commodites in the region. Many countries use a combination of taxes, licenses, and foreign exchange controls to regulate exports. Brazil is a good example, having taxes on some of its major exports and requiring permission from the central bank for foreign exchange, which amounts to licensing. Another example is Colombia which taxes its coffee exports and requires licenses. Mexico establishes a quota for live cattle exports, has duties on some exports and also has a minimum official export price for some commodities. A few governments have attempted to encourage exports by providing export rebate certificates giving producers some income tax credits.

Agricultural goals and priorities in practically all countries are concerned with the expansion of agricultural production for both domestic and export markets, national food self-sufficiency of import substitution, the stabilization of food prices, rural development, and improving nutritional levels. There are no programs to curtail production of farm commodities in excess supply. But, several coffee producers have attempted to control production through the regulated basic food prices at the producer, wholesale, or retail level. Rural development, encompassing the e specific goal of increased farm production, is a policy priority in mos of the region. All countries recognize the need to improve nutrition, but this policy goal has not received a priority as high as that given to expanding production.

Governments in the region have intervened in agriculture with many programs. These range form land reform, control over the allocation of resources, input subsidies on the supply side, and macro-policies affecting exchange rates, value of currency, and debt and inflation.

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ARGENTINA

Jorge Hazera

Argentina is a major exporter of wheat, corn, sorghum, soybeans, oilseed byproducts, and livestock products, mostly beef and sheep. Horticultural exports include citrus fruit, deciduous fruit, and canned deciduous fruit.

As a temperate climate country, Argentina produces, exports, and imports many of the same crops as the United States. Argentina is the world's second largest exporter of grains, oilseeds, and oilseed byproducts, accounting for 10 percent of world trade or these products, compared with 40 percent for the United States.

Argentine economic policies tax the competitive agricultural export sector and subsidize the manufacturing sector, largely closed to international trade.

The Economy

Rich in natural resources, Argentina is self-sufficient in petroleum. It exports more than half of its farm output. Technology and human capital are also well developed. Adult literacy is high among its 30 million people; schooling is widely available. The country has a relatively long history of industrial activity, including industries of considerable sophistication such as its nuclear sector. Beginning in the 1940's, the country's industrial sector had sustained growth, induced first by shortages of industrial goods during World War II and supported later by protective trade policies. Argentine industrial development was unstable and elusive; nonetheless, it moved forward. Beginning about 1960, the economy began to stagnant, due largely to protectionism and inflation.

Nominal GDP is expected to be around U.S.$85 billion in 1987, with per capita income around U.S.$2,700. Manufacturing accounts for an estimated 25 percent of GDP and 20 percent of the workforce. Government services account for 17 percent of GDP and 17 percent of the workforce. And, agriculture accounts for 15 percent of GDP and 12 percent of the workforce.

Taxes on agricultural exports provide about 10 percent of central government revenues. These taxes vary by commodity but generally run 10-20 percent of the world price. Exchange rate controls are an important consideration, since exporters are required to convert dollar earnings at the official exchange rate, which is often 10-20 percent below the market exchange rate. Export taxes in conjunction with exchange rate controls drive a wedge between fob export prices and domestic prices. Wholesale grain prices generally run about 75 percent of the world price.

The Agricultural Sector

The grain handling and transportation sector adds another 10 percent of GDP to the 15 percent contributed by agriculture. Agricultural exports total about $U.S.$5 billion and contribute nearly 80 percent of foreign currency earnings. The principal agricultural exports include wheat, corn, sorghum, soybeans, oilseed products, livestock products, food, tobacco, hides, skins, and textiles.

Policy Goals

Economic policies have generally subsidized industrial development and import substitution with receipts from the agricultural export sector. Export taxes and exchange rate policies have reduced agricultural commodity prices relative to world prices, while import taxes and other protectionist policies have raised farm input prices. Argentine farmers responded to these policies by maintaining a low-cost structure. They rotate crops and pastures, for example, instead of using imported fertilizers and herbicides.

Despite a history of subsidies and protective tariffs, most state-sponsored industries still run large deficits and many private companies depend on protectionist policies. Agriculture, on the other hand, remains surprisingly competitive despite burdensome taxes and government intervention. Argentines generally recognize that traditional economic policies have adversely affected agricultural growth. The current debt crisis may help promote privatization of state-run industries and the unshackling of the agricultural sector. On the other hand, declining world commodity prices may defeat efforts to revitalize the agricultural sector.

Agricultural Programs

Agriculture has always been Argentina's economic mainstay. Argentina was dominated economically and politically by large, export-oriented landowners from the colonial period until World War II. With the onset of the war, grain marketing was nationalized by the Peronist government to counter what was believed to be a monopsony created by the Allies. In addition, this new order implemented a major economic policy shift; that is, transfering resources from agriculture to industry. To do this, the government collected receipts from the agricultural sector via border taxes, including export taxes and exchange rate controls.

Border taxes on agricultural exports are still widely used. Export taxes are administratively convenient, since agricultural exports account for nearly 80 percent of foreign currency earnings. These taxes account for 15-20 percent of government revenue. Moreover, border taxes complement national industrial policies by reducing domestic prices to about 75 percent of world prices, lowering beef and wheat prices, lowering the cost of living, and maintaining a lid on wage rates.

Argentina has used a price support program since the late 1930's, but exchange rates, export taxes, and inflation have worked at cross purposes with the price support program, rendering it largely ineffective. In addition, railroads and port elevators are largely government owned and operated. Charges for grain handling and transportation can easily offset the support price since these prices are paid only upon delivery to grain board terminals and producers must bear the delivery costs. Finally, the government often announces support prices after planting time, or fails to index support prices to inflation, resulting in support prices falling below market prices before harvest due to inflation erosion. For all of these reasons, producer planting decisions are often based on market prices and price expectations, without much consideration for the government price support program.

Argentina is a price taker in the world market and border taxes drive a wedge between world prices and domestic prices. Hence, support prices are normally below world prices. When support prices are higher than spot prices, however, producers often forfeit their rights to the support price level by selling to the private trade at a lower price in order to obtain immediate cash. This is because the grain board pays only about 70 percent of the amount due at the time of delivery with the remainder paid within a few months, by which time inflation erosion has reduced the support price below the spot price.

Due to the practice of selling below the support level, a dual price system was introduced in the late 1960's. That is, in addition to the support prices, minimum trading prices were established. Private sales below the established minimum trading price, expressed as U.S.$ per metric ton, were illegal and unprofitable.

Minimum trading prices, also known as index prices or reference prices, are still used. These prices are used as the basis for calculating border taxes. The Buenos Aires fob price is often the same as the minimum trading price, but fob prices can move above or below the reference price. Since exporters are obligated to convert their foreign exchange earnings at the official government rate, exporters must obtain at least the index price in order to avoid exchange rate losses.

Agricultural Program Evaluation

In the last decade, Argentina has moved to revitalize agriculture. The military government pursued these policies in the favorable environment of rising world commodity prices and the 1980 U.S./USSR grain embargo. The current democratic government, on the other hand, is attempting to revitalize agriculture in an environment of declining world prices and burdensome foreign debt obligations.

Despit border taxes which run as high as 50 percent of the export price, commodity prices in Argentina are highly correlated with changes in world prices. This is because nearly two-thirds of Argentine agricultural production is exported.

Several factors work against a normal response to lower world prices by the Argentine farm sector. Since there is a sizable margin between Argentine farmgate prices and Argentine export or world prices, the transmission of lower world prices to lower farmgate prices in Argentina can be mitigated. When this happens, Argentine farmgate prices do not decline along with world prices, and Argentina is able to sustain agricultural exports and market shares.

Transmission of low world prices to Argentina can be offset by the following factors:

(1) Argentine farmers produce at very low costs, so Argentine farmgate prices can rise and still remain well below world market prices.
(2) Export taxes and exchange rates reduce domestic prices in Argentina, so farmgate prices can increase if border taxes are reduced or eliminated.
(3) The internal cost of marketing agricultural products in Argentina is very high (despite the proximity of the farm production regions to export terminals), so Argentine farmgate prices can increase if grain handling costs are reduced.

Government policies have tended to depress crop prices and increase input prices, precluding introduction of such farm inputs as fertilizer. So, soil structure, fertility, and yields have been maintained by carefully planned crop and livestock rotations. However, rotation schemes have recently been changed to continuously double-crop wheat and soybeans. Many farmers have depleted the soil's organic content by eliminating rotation of crops with pasture. In particular, share-crop farmers, very active in the heart of the Argentine corn belt region (northern Buenos Aires and southern Sante Fe provinces), are less conservation oriented than farm-owner-operators. Moreover, returns still favor extensive land use over intensive land use.

Crop yields have been relatively high, considering the low level of inputs (fertilizer) used by Argentine farmers. The business environment in Argentina is so risky that farmers hesitate to bear the additional weather-related risk of increased input use.

Flooding has recently become more acute. Standing water from flooding in recent years has become a serious problem in the Pampas (grain belt), particularly in western Buenos Aires province. About 10 percent of the farmland traditionally planted to wheat can be affected; sunflowerseed areas have also been affected.

The government gave up its monopoly of port elevators in 1979 by selling off some of its grain elevators to farm cooperatives and by allowing the private sector to build its elevators. Grain-loading capacity and efficiency increased markedly. In addition, important legislative measures were introduced that improved the institutional efficiencies of the grain handling infrastructure, including the 1981 grain law which gave the national grain board authority to schedule the internal movement of grains to port. The law was to improve the efficiency of the marketing system. Resolution no. 1828, passed in 1982, was designed to improve the operations of the grain market by introducing substitutability into grain buyers/sellers contracts.

The government of 1976-83 began to liberalize agriculture by eliminating differential exchange rates and by reducing agricultural export taxes. The unified exchange rate reduced the domestic price of agricultural commodities relative to world prices, but the reduction in export taxes was only temporary.

The current government is trying to open up the economy by reducing protectionism for industry and by unshackling the agricultural sector. It is proceeding cautiously by phasing in reforms, being careful to minimize social and economic disruption. In 1985, to control inflation, stabilize the economy, and establish the appropriate conditions for longer term growth, the government took a series of corrective measures known as the Plan Austral. These measures included reduced currency transactions, exchange rate liberalization, currency devaluations, reduced deficit spending, and wage-price controls. So far, the plan has been successful in reducing inflation from about 1,000 percent to 100 percent, and generating slow, yet steady, economic growth.

The differential between the market exchange rate and the official rate has been reduced to about 15 percent, and export taxes on agricultural products have been reduced. Lower export taxes have only partially offset declining world prices and have diminished the government's maneuverability to offset additional price declines. Foreign exchange reserves and government revenues have fallen since agricultural export earnings account for 80 percent of foreign exchange earnings and agricultural export taxes account for about 15 percent of central government revenues.

The government's most dramatic initiative on agricultural policy, the land tax, is currently tied up in the legislative process. Its chances of becoming law are uncertain. According to the proposed legislation, land taxes, based on the value of the land without improvements, will offset income tax and wealth tax liabilities. However, the land tax proposal does not address the offsetting effect of the land taxes on agricultural export taxes, which account for 70 percent of the taxes paid by the agricultural sector. Farmers are concerned that overall taxes will rise, unless the government explicitly renounces its authority to impose export taxes.

BARBADOS

Richard N. Brown, Jr.

Barbados is one of the most popular tourist attractions in the eastern Caribbean. Literacy and per capita incomes are among the highest in the region. Tourism, light industry, and agriculture dominate the economy.

Agriculture, however, has been geared to export production for more than a century. Raw sugar sales account for most of the agricultural income.

Cane sugar production remains the sole survivor of the island's colonial heritage. But the industry is in trouble because of high production costs and low world prices. Nevertheless, this picturesque island of limestone s ils and nearly treeless hills is ideally suited for perennial grass crops such as sugarcane. Recent attempts to grow commercial row crops have been disappointing.

Per capita incomes exceed U.S.$4,500 per year and are growing steadily. But, underemployment remains a problem. Food is plentiful, although moderately expensive in supermarkets. Most food items found in stores are imported, including many fresh fruits and vegetables.

Business and government leaders have long been interested in import substitution but few if any incentives have been enacted. There may eventually be attempts to phase out the sugar industry and expand other segments of agriculture. But, centrifugal sugar production appears to have stabilized at approximately 100,000 tons per year.

The government, like its recent predecessors, is committed to an economic strategy based on export growth in the private sector with support from the public sector. This includes both tourism and agriculture. Agriculture, however, remains in a dilemma because input costs are relatively high by U.S. and world standards.

The climate, topography, and soils of Barbados are not well suited for the efficient production of the wide variety of annual food products consumed daily. Most of the food items sold in supermarkets, whether fresh, canned, or processed, are imported either from the United States and Europe, or from neighboring islands.

Government restrictions on food imports are minimal although some temporary restrictions may be placed on agricultural imports any time a foreign exchange crisis arises. But as long as tourism, sugar manufacturing, and other export industries remain vigorous, any attempts by the government to restrict imports or increase retail prices will be resisted.

Labor is well organized and commands a high degree of pay comparability in agriculture. Many agricultural laborers, having followed seasonal harvests in the United States, demand similar wages for similar work in Barbados.

Small and medium family farms with sizable proportions of sugarcane area are not likely to quit sugar production quickly because economically viable agricultural options are limited.

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BELIZE

Nydia R. Suarez

Belize is highly dependent on agriculture which, together with forestry and fishing, accounts for about 25 percent of GDP, about 45 percent of employment, and over 75 percent of domestic merchandise exports. Almost half of agricultural value added and agricultural exports are derived from sugar. The rest of agriculture is comprised of citrus, bananas, corn, rice, beans, and livestock for domestic consumption. Of the total land area of 2.3 million hectares, about 53,000 is suitable for agriculture, with another 1.1 million in permanent pasture and forest.

In the colonial days, Belize's economy was centered around exploiting the tropical forests of logwood and mahogany. Logging flourished while all export-type agriculture was prohibited by law. Early in the 1950's, when the supply of lumber began to diminish, sugarcane farming became important. The sugar industry has been deeply affected by depressed world prices. But, Belize has been partially protected by the fact that about 65 percent of its sugar is exported to the United States and the EC at preferential prices under quota agreements.

Belize is strongly trade-oriented with high per capita exports of agricultural products and an even higher rate of imports of food and other consumer goods. Wheat is the most important agricultural import. The major trading partners are the United States, the United Kingdom (from which Belize obtained its independence in 1981), and Mexico.

The development strategy of the government, specified in its 5-year plan (1985-89), is to proceed with agricultural diversification, along with the redevelopment of import substitution. The major problem is infrastructure, particularly roads and electricity. A shortage of manpower, price control systems, and restrictive trade polices also limit agricultural diversification and economic growth.

Agricultural land tenure is represented by four major groups: private lands (37 percent), forest reserves (28 percent), national lands (25 percent), and government-leased lands (10 percent). The government believes that large amounts of the larger private landholdings are being speculatively held. A series of land tax measures including licenses to purchase rural land larger than 4 acres were introduced to discourage such speculation. This licensing is really a lease/purchase arrangement, with the licensee expected to invest in farm development and land improvement. The land tax laws were changed in 1983 requiring an annual payment of 1 percent of the unimproved site value.

Agricultural marketing systems are diverse and include direct exports by producer associations and individual firms, private sector marketing of domestic crops, and the Belize marketing board, a public sector wholesale agency for grains. The board acts as an administrative pricing agent for corn, rice, and beans and is the sole importer of canned milk. The board, operating profitably for many years, has been subject to considerable review and restructuring over the past 2 years. Other parastatal enterprises include the Belize meats limited and the banana control board.

Credit to the agricultural sector is provided by commercial banks, the development finance corporation, and by a small number of farmer cooperatives. Agricultural lending by commercial banks is predominantly to large, well-established farming operations, particularly sugar and citrus farms. The development finance corporation lends primarily to small farmer groups.

Price controls are applied to a variety of imported and locally produced goods either in the form of a maximum percentage of ad valorem markups which can be added to costs of production or landed costs of imports. The ministry of commerce and industry has administered the price control system since 1972. Because the policy system of price controls has not been developed through a comprehensive review of costs, the commodities most affected by the controls are those sold in the most competitive markets. The system tends to benefit producers, not consumers. The country also has a tariff structure based upon the CARICOM common external tariff. In addition to the tariff structure, the country requires import licenses for a considerable number of items and also has quantitative restrictions for some others.

The government has created a separate ministry of agriculture to oversee general policy formulation, research, and extension services to further improve public support for the agricultural sector. The government has also reorganized the Belize marketing board. The presence of the parastatal led to inconsistencies in policy application like the simultaneous application of price controls and quantitative restrictions on imports and the system of import licenses. These programs were associated with a significant consumer welfare loss. In addition, the government is divesting itself from some deficit-run parastatal agencies.

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BOLIVIA

H. Christine Bolling

Bolivia is one of the poorest countries in South America, with a chronic shortage of food. Its principal crops are corn, potatoes, and sugarcane. Agriculture provides a fifth of the GDP. Bolivian agriculture, however, has been able to meet only about 82 percent of the nutritional need of the population. Bolivia depends on wheat imports to partially fill the food gap, and exports coffee, sugar, and soybean meal. Bolivia has been in economic chaos in recent years. Present policy aims to overcome economic depression.

The Economy

Bolivia faces unstable world prices for tin and natural gas which have accounted for 95 percent of its export earnings. Bolivia also illegally exports cocoa/cocaine whose earnings have been estimated to be as high as all other exports. The years 1978-82 were extremely unstable when Bolivia had nine different presidents. The changeover from 18 years of military government to a democratically elected government, however, did little to solve Bolivia's economic problems. Recent external shocks to the Bolivian economy include the collapse of the tin market in October 1985, the drop in oil prices (directly affecting Bolivia's sales of natural gas to Argentina), and the efforts to interdict cocoa processing in July 1986. The current government, elected in August 1985, faces falling per capita GDP, extremely high inflation, and rapidly growing foreign debt.

The Agricultural Sector

Agriculture provides nearly one fifth of the GDP and over 40 percent of the employment for the country's work force. Bolivia has two basic agricultural climates: the mountainous climate favorable for corn and potatoes and the tropical climate in the interior favorable for sugarcane. Cattle raising is the principal livestock enterprise. Nearly 60 percent of Bolivia's agricultural production is in the Santa Cruz area east of the Andes. But, this highly productive area is remote from principal markets.

Policy Goals

The government's economic program aims at economic stabilization and reform and a reorientation of incentives to market-determined levels. Government fiscal policy favors operating on a cash basis, with tight controls on expenditures and taxes. The complex import tariff structure was replaced with a uniform rate of 20 percent, equalizing protection across sectors. Now there is a uniform export rebate of 10 percent applied against direct and indirect taxes.

In the foreign sector, the program established an auction system for foreign exchange which has effectively unified the official and parallel markets. Access to the official exchange market is unrestricted. Controls on imports, exports, and other foreign exchange transactions were lifted. Export licensing had previously been required for most agricultural products (beef, corn, rice, and soybeans). Some exports of unprocessed goods (wool) had been prohibited. Export licenses for rice and sugar have been reintroduced. Bolivia established CERTEX, an export incentive program, but it was discontinued.

Agricultural Programs

Agricultural policy has undergone a fundamental change, the most important being the reduction in government's role in agricultural price fixing and marketing. Producer and retail prices were formerly fixed by the government, but producers negotiate through their associations (national association of oilseed producers for soybean and wheat growers) with the millers and processors. The ministry of campesino affairs and agriculture performs as arbitrator. Dairy products are processed at government-owned dairy plants, but producer and retail prices are no longer controlled by the government. Rice is officially distributed through Empressa Nacional de Arroz, but the organization markets only a small portion of the production. Retail prices are determined by market forces, except for bread which is fixed by the government.

Sugar mills have marketing quotas set at a level to fill internal and export demand. A joint producer/sugar mill organization, national association of sugar marketing, stabilizes the wholesale price which, because of high costs of production, is well above the world market prices.

Among agricultural imports, virtually all commodities are charged 20 percent *ad valorem*, but licenses are not required. Wheat, however, has no import duty and is imported by the ministry of industry and commerce. Rice and sugar are officially prohibited for imports. The 20-percent duty was also extended to fertilizer, insecticides, and machinery.

On the export side, traders are now given pesos by the central bank in exchange for earned hard currency.

Agricultural Programs Evaluation

Many of the current problems of Bolivia agriculture are intertwined with the difficulties of the general economy. The economy was operating under the pressure of hyperinflation, devaluations, a strong parallel currency market, and the strong presence of a black market and contraband trade activity. Bolivia is returning to a free market economy, even though the interim period is one of adjustment for most sectors of the economy. Bolivia has long-term problems complicated by the vulnerability of a less-developed country depending on the international market for primary commodities.

BRAZIL

Edward W. Allen

Economic policy in Brazil has encouraged industrialization through import substitution, favorable terms for foreign capital, an overvalued exchange rate, and strict control of trade and currency transactions. Taxes on agricultural production were an important source of revenue to finance industrial development.

Brazil, producing a wide variety of both temperate and tropical crops, is one of the largest suppliers of agricultural products to the United States, and is a major competitor in third-country markets. Brazil is also an important market for U.S. wheat.

Agricultural policy in Brazil has three major priorities: food for domestic consumption, exports for foreign exchange, and alcohol for energy. These priorities conflict with each other and policies frequently change as one priority becomes more urgent than the others.

The Economy

Brazil is the largest noncommunist developing economy, with the world's tenth largest GDP. Its 140 million people inhabit an area larger than the continental United States. Real GDP in 1967-76 expanded rapidly, with annual growth of over 10 percent. High oil prices, high interest rates, and low commodity prices contributed to reduced growth rates in the late 1970's and early 1980's. From 1981-1983, Brazil experienced recession. In 1984, growth of 4.3 percent was led by exports. During 1985 and 1986, domestic consumption expanded, pushing GDP up by over 8 percent. The change, in 1985, from 21 years of military dictatorship to a democracy contributed to policies that encouraged domestic consumption.

One of the important obstacles to continued fast growth is Brazil's large foreign debt, at $108 billion about half the level of GDP. The suspension of payment of the interest on the commercial portion of the debt and the failure of the "cruzado plan" anti-inflation program have greatly increased economic and political instability.

The Agricultural Sector

Brazil is one of the world's largest net exporters of agricultural products. Coffee, soybeans, orange juice, sugar, cocoa, tobacco, and meat are major exports, while corn, dry edible beans, manioc, rice, and wheat are grown for the domestic market. Primary agricultural production contributes about 13 percent to GDP and 25 percent of employment, but agricultural products account for about 40 percent of Brazil's export revenues.

Brazilian agriculture has a diverse structure. Many small farmers survive on subsistence agriculture, without clear title to their land and without access to inputs or credit. Some large landowners run extensive cattle operations. Brazil has a dynamic modern agricultural sector, based in the southern part of the country, composed of a blend of well-organized cooperatives of small farmers and large capital-intensive corporate farms.

Corn (12-14 million hectares), dry beans (5-6 million hectares), and manioc (2 million hectares) are grown throughout Brazil, much of it by small farmers. Rice (5-6 million hectares) and wheat (3-4 million hectares) for domestic consumption are largely planted by modern farmers, particularly among the cooperatives in the southernmost state of Rio Grande do Sul, where soybean (9-10 million hectares) production first expanded. Coffee (2 million hectares) and cotton (3 million hectares) are traditional exports of the southeastern states of Parana, Sao Paulo, and Minas Gerais. Brazil has one of the world's largest cattle herds, but foot and mouth disease limits beef exports. Favored by low feed costs, poultry production has grown rapidly, reaching about 1.7 million tons.

Brazil is the world's largest sugarcane producer, but only a third to a half of the cane is used to produce sugar. The majority of the cane is used to produce ethanol. Some alcohol is mixed with gasoline, but most is used in cars specially designed to run on pure alcohol. Since almost all new cars in Brazil use only alcohol, sugarcane area has expanded rapidly to over 4 million hectares.

Policy Goals

In 1964-8_, the military government allowed the executive to change and implement policy by decree, resulting in many abrupt changes in the conduct of agricultural programs. Underlying the changes have been contradictory goals. Agricultural policy tries to maintain farmer income while providing plentiful supplies of inexpensive food to consumers. Policies have encouraged agricultural exports, but export taxes on agricultural products are a basic source of funding. Since 1975, the alcohol for energy program has placed another major demand on Brazilian agriculture.

The democracy assuming power in 1985 still governs under the constitution written for the military government, giving the executive decree-law power. The fundamental contradictions in agricultural policy remain unresolved. However, during 1985 and 1986, foreign exchange constraints were less severe, and economic policies were oriented toward increasing consumption, including food. Income redistribution was also a priority and on the agricultural front gave rise to a major land reform program. The cruzado plan anti-inflation program sought to increase incomes and employment while eliminating inflation through price controls. Price controls eventually caused enough economic distortions to disrupt the economy and derail exports. In 1987, lack of foreign exchange forced Brazil to suspend payment of interest on its foreign debt. The difficult debt negotiation with the international banks and the return of record high inflation since the collapse of the cruzado plan have left Brazilian economic policy in a shambles.

In 1985 and 1986, agricultural policy was consumer oriented. When drought caused crop losses in 1986, the government used massive imports of food to try to keep consumer prices from increasing. Foreign exchange constraints will likely force agricultural policy to return to more export promotion.

Agricultural Programs

Brazil maintains a minimum price support program and provides loans to farmers at below-market interest rates. A 13-18 percent value-added tax is applied to agricultural products. Price controls occasionally distort agricultural markets. Research, extension, and crop insurance programs have been important for some crops in some regions. Input subsidies were important, but have been phased out. Coffee, cocoa, and sugar producers have special independent programs. Export and import controls are often changed and import tariffs, though high, are often waived.

The minimum price support programs, covering most major crops, have recently become more important as the democratic government has increased minimum prices for major food crops in order to encourage production. The support prices include direct purchase or storage loans much like the U.S. program, where loans can be redeemed if the farmer wishes or forfeited to the government at the minimum price. Most crops are supported near or below U.S. loan rates, with the notable exception of wheat.

The government makes loans available to farmers to finance crop production costs, livestock inventory, and some longer term investments, as well as the crop storage program. The crop production loans are the largest program. In 1987, funds were made available at 10 percent above the inflation rate. Disbursement and repayment terms are variable, depending on farmers' relationships with their bankers. But, disbursements usually occur in three parts, starting with soil preparation and ending at harvest, with repayment due 6 months after disbursal. This program represents a significant subsidy, because farmers would have to pay 40-80 percent higher interest rates if they borrowed at commercial rates. Moreover, if problems arise, such as drought, repayment of the government loans is allowed to fall into arrears.

The amount of funds available for production loans, storage loans, or investment have been reduced during the 1980's. Moreover, the interest rates charged farmers have been increased over the 1980's until the rates are close to the government's cost of borrowing. Only in the impoverished northeast and in the Amazon are rates still subsidized below the inflation rate.

Brazil's export programs do not offset the high export taxes. Government involvement is greatest for coffee, sugar, and cocoa. The government controls and taxes coffee exports through the Brazilian coffee institute. The institute for sugar and alcohol controls production and trade but, due to low world prices, the major trade intervention is to subsidize exports. For other exports such as soybeans, differential export taxes encourage exports of processed products in order to increase the value added in Brazil. Tax rebates for exporting have been mostly phased out, but a major existing program provides companies who commit to reach a certain level of exports with authorization and financing for imports.

Authorization to export or import is controlled by the government through Cacex, a part of the bank of Brazil, where trade must be registered and foreign currency exchanged. The ad hoc opening and closing of registrations often keep world prices from being transmitted into the Brazilian market. Whenever the government wants to lower domestic prices and increase domestic supplies, it tends to cut off exports and open imports. In the short run, this technique increases domestic supplies because stocks cannot be exported. But, in the long run, it discourages production. In order to fight domestic price increases, the government occasionally imports commodities, such as corn, to sell at a loss on the domestic market.

Agricultural Program Evaluation

Total area planted continues to expand despite low world prices for most agricultural commodities. However, per capita food consumption did not improve significantly from 1975 to 1985. The Brazilian population is now over 70 percent urbanized as agriculture has provided workers for other sectors of the economy.

Brazilian policies, especially the research programs, input subsidies, and subsidized credit, have successfully aided the great expansion of cash crops in the southern part of Brazil. Soybean production expanded from less than a million tons in 1969 to over 18 million tons in 1985. Frozen concentrated orange juice has grown from nothing to generate about U.S.$1 billion per year in export revenues. Commercial poultry production has grown from 0.2 million tons in 1970 to 1.6 million tons in the 1980's. Commercial mixed feed production has expanded at a rate similar to poultry production.

Modernization and high capital investments have often been associated with the entry into the sector of multinational corporations. Technical adaptations and transfers have been promoted through the government's agricultural research institute, EMPRAPA. However, the export processing programs have depressed farm prices in order to encourage investment in processing.

Recent planted area expansion has been most dramatic in the savanna grasslands in central-west Brazil. This area was not traditionally suitable for crop production because of soil chemical imbalances. Recent application of advances in soils science has allowed the soil limitations to be overcome, but at a moderately costly investment. This area now is able to take advantage of its plentiful rainfall and mild climate, with dramatic results: in 1986, Mato Grosso state had the highest average soybean yields. The minimum price support program is especially important to Mato Grosso, because it is far from markets and transport costs are high. The minimum price supports are not adjusted for transportation costs, so many producers in this remote area find it attractive to sell to the government.

Not all government programs have been successful. For many decades, Brazil has been trying to encourage wheat production. The climate is warm and humid, especially during the wheat harvest, encouraging harmful rusts and smuts. Despite low yields, the government support price of U.S.$240 per ton has encouraged farmers to increase wheat area. Procurements in 1986 reached 5.6 million tons, but the government's cost was very high. Wheat has been the only major crop that the government subsidizes to consumers. Wheat was easy to administer, because it was the only crop for which the government did all the purchasing, both foreign and domestic. As wheat products have become the cheapest food for the urban poor, it has become difficult to raise the price without risking political unrest. Consumption subsidies have ballooned. The wheat subsidy has become a major contributor to government deficits.

Brazil powers most of its new cars on hydrous ethanol produced from sugarcane. This energy-conserving program has been very expensive. With petroleum prices much lower than expected, this massive program is not producing an adequate return on the resources devoted to it. Due to petroleum price uncertainty, foreign exchange constraints, and large sunk costs, Brazil continues to pour subsidies into the ethanol program.

The greatest failing of agricultural programs has been among the poor rural subsistence farmers, especially in northeast Brazil. Malnutrition remains a major problem. Research, extension, financial programs, and land settlement schemes have failed to reach the over 20 million farmers classified in the 1980 agricultural census as squatters. Over the last 15 years, the average yield of the basic staple of the poor, dry edible beans, has been declining. Basic food crops are generally taxed at 13 percent.

With vast untapped resources of arable land, cheap labor, and well-trained agronomists, Brazil has the potential to expand its agricultural production more than any other country. How rapidly production and exports increase will depend on many factors, including: the availability of funds for investment, growth of income and food demand, level of international agricultural prices, renegotiation of the international debt, and reduction of the government deficit.

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CHILE

H. Christine Bolling

Chile has a well-developed industrial sector, but also depends on agriculture for export earnings. Agriculture, providing 6 percent of Chile's GDP, is principally a temperate zone (Mediterranean climate) agriculture. Wheat and dairy products account for 22 percent of the agricultural GDP. Corn, potatoes, sugar beets, grapes, poultry, and eggs are other principal agricultural products. Chile is an important exporter of fresh deciduous fruits. Wheat has been Chile's principal agricultural import. In its goal to curb foreign exchange expenditures, Chile is aiming for self-sufficiency in wheat production.

Chile is an upper middle-income country. Since 1973, a military government has been in power. The Chilean economy has been export oriented, with copper, fishmeal, and table grapes providing the largest share of its export earnings. The current government has reversed many policies in an effort to reduce the size of government, remove tariff barriers, withdraw direct government involvement in industry, and allow the economy to expand under free market forces. The early 1980's downturn in the global economy, low world copper prices, and heavy borrowings left Chile with the highest per capita foreign debt in Latin America. Other problems have included hyperinflation, but Chile has controlled inflation in recent years. Chile has also retreated from efforts to liberalize trade.

Recent policy goals have been to encourage commercial agricultural production, increase self-sufficiency, and increase export earnings. Earlier Chilean governments had considerable interest in land reform, but the government reversed the expropriation of nearly 10 million hectares during the Frei and Allende eras by returning much of the land to former owners.

Chile has a relatively open agricultural economy, but it has protected some sectors. Wheat (except durum), sugar, vegetable oil, and milk are the most protected, through support of producer prices. Wheat and vegetable oil prices are regulated through an import price band system whereby producers receive approximately 85 percent of the band's floor price. The government helps support prices by purchasing production through Sociedad Commercializadora de Trigo, a quasi-government corporation (90 percent funded by the government) which replaced the activities of a private cooperative federation.

The government supports producer milk prices at a level equal to the minimum import price. The sugar beet price support system, established in 1982, was the government's first step to shift from an open economy orientation to policies emphasizing import substitution. In 1986, the price band replaced a fixed surtax on sugar imports. Producer prices are guaranteed in contracts between the producer and Industrial Azucarera Nacional, the national sugar corporation that processes Chile's sugar beet production. The corporation also offers subsidized financing for inputs, services, and labor.

Chile underwent a period of trade liberalization in the 1970's, but has since retrenched. Many recent changes in trade policy have been in response to Chile's devaluation of its currency. Chile now has a uniform import tariff that applies to all commodities from all sources. Importers must wait 120 days to obtain foreign exchange.

The import price band system applies to wheat and vegetable oil where minimum prices denominated in dollars are set. The floor price for wheat is quoted in dollars and is the landed price at Chilean mills including freight, insurance, ad valorem duty, and incountry transportation charges. Dairy products have a minimum import price plus a 15-percent specific surtax plus the uniform import duty. These prices are based on international price trends for those specific commodities.

Chile also has preferential treatment to Brazil and Argentina for crude soybean oil through the Association Latinoamericana de Integracion agreement.

In slightly over a decade, Chilean government policies have run the gamut from liberal to conservative policies, and the wide swings have created adjustment problems of their own. Chile's grain-oilseed-dairy policies of price supports may prove to be expensive, particularly when international prices for these commodities are low. Devaluation of Chile's currency has been advantageous to Chile's export-oriented deciduous fruit and grape industries. Inflationary pressures and the need to realign currency values are important policy issues.

COLOMBIA

H. Christine Bolling

Nearly 20 percent of Colombia's GDP originates from agricultural production. Coffee provides over half of Colombia's total export earnings, but rice, corn, potatoes, bananas and plantains, and cotton are principal crops. Dairying is the principal source of income from livestock industries. Colombia has attempted to diversify its export base by increasing shipments of fuel oil, flowers, clothing, and textiles. Colombia's agricultural policy goal has been to reach self-sufficiency through active government intervention. Government intervention affects all sectors. The price supports and coffee storage programs have been costly for the government.

Colombia is an upper middle-income country and one of the more industrialized among Andean countries. It still has a relatively small modern sector superimposed on a broad traditional base. After an economic slump in the early 1980's, the Colombian economy is again strengthening.

Policy Goals

Since 1967, Colombia has generally encouraged exports as a means to expand the economy, although it has simultaneously used an import substitution policy to hold down foreign exchange expenditures. Colombia's agricultural goal has been to reach self-sufficiency.

Agricultural Programs

The Colombian government intervenes extensively in agriculture, particularly at the producer level and in foreign trade. Price supports for agricultural products, coffee export taxes, and price fixing in the input and output markets are the government's principal policy instruments.

The ministry of agriculture through the Institution de Mercadeo Agricola (IDEMA) supports prices and purchases and sells storable commodities. Through IDEMA, a farm support price is announced at planting time for rice, sesame, barley, edible beans, corn, sorghum, soybeans, wheat, potatoes, cotton, and anise. IDEMA is also the exclusive import agency for basic deficit agricultural products--wheat, sorghum, corn, soybean meal, and dried milk--and for export surpluses. Until recently, IDEMA had more influence on the market through its role as the exclusive importer of these major commodities than through its role as purchasing agent.

Oficina de Planeamento del Sector Agropecuario (OPSA), a branch of the agricultural ministry, intervenes between cotton producers, cane producers, cocoa bean and sisal producers, and their processors in negotiating farm prices. FEDERCAFE, the national federation of coffee growers, has been charged by the government with administering the coffee policy and setting farm-level coffee prices.

Most fertilizer is imported, is charged a 3 to 7 percent import tariff, and is subject to high port handling and domestic transport costs. Farmers receive institutional subsidized credit. The FPAP (agriculture finance fund) and Caja Agraria (agriculture development bank) account for 70 percent of the institutional funds lent to agriculture.

Colombia's overall trade policy has been dominated by the exchange rate mechanism. For many years, the Colombian peso was overvalued. In the 1980's, because of the internal inflation and balance of payments through 1985, Colombia has opted for a crawling peg devaluation.

Colombia has historically had a restrictive import policy and has loosened trade restrictions only when it was enjoying considerable economic growth. In most years, however, Colombia's trade policy reflected the need for belt-tightening to halt the decline in international foreign exchange reserves. The government maintains control over imports through the Colombian institute of foreign trade (INCOMEX), allocating a monthly quota of foreign exchange to INCOMEX. INCOMEX uses prior licensing, import tariffs, allocation of foreign exchange among authorized imports, and variable exchange rates. IDEMA purchases most agricultural products, and INCOMEX grants import licenses for these products after consulting with IDEMA and the agricultural ministry.

Grains and oilseeds are also officially subject to import duties which are waived when IDEMA is the sole purchaser of these basic imports. However, IDEMA charges the equivalent amount and uses these fees as operating expenses. Import duties include ad valorem on the c.i.f. value of the shipment, surcharges for the export promotion fund (PROEXPO), the coffee promotion fund, and the consular tax. Imports are also subject to a sales tax for most essential foods.

Colombia also has a 6-month import quota on wheat and soybean oil. Some agricultural products like hogs are on the prohibited list of imports. Inputs like tractors, certified seed, and pesticides are also tightly controlled.

Colombia became a full member of the General Agreement on Tariff and Trade (GATT) on October 3, 1981, and is a beneficiary country under the U.S. Generalized System of Preferences (GSP). Major products benefiting from GSP include syrup and molasses, candy, and many nonfood products. U.S. imports of cut flowers, yams, and candied fruit from Colombia were excluded from preferential treatment as of March 31, 1981. Colombia also has agreements with its neighbors through ALADI and the Andean Pact agreements, which provide preferential tariffs.

Colombia has taken an export-oriented stance since its 1967 trade reforms. Since an overvalued exchange rate favors imports over exports, the government introduced tax rebate certificates (CERT's) to compensate exporters for the distortions in relative prices generated by Colombia's import substitution policy. Exporters of rice, sugar, livestock products, tobacco, cotton, and flowers (except exports to the United States) received CERT's at the time of export. Sugar, flowers, bananas, cotton, rice, and tobacco are also eligible for export credit from PROEXPO, Colombia's export promotion agency.

Colombia has used coffee exports as a major source of government revenue. It has also used its tax structure and bank deposit requirements to cushion effects of a large inflow of revenues in boom years that could potentially cause inflation. So, most of the coffee policy is trade related. Private exporters buy coffee from farmers. But, in so doing, they must pay an <u>ad valorem</u> tax on exports that goes into the national coffee fund and the national treasury. Coffee exporters must also pay a repatriation tax (reintegro). Reintegro is the minimum price per bag of green coffee that must be deposited at the central bank to legalize any coffee exports. Coffee exporters must also pay a retention tax which is partly paid in kind (parchment coffee) and partly paid in the national currency. The International Coffee Organization also sets a coffee export quota and the Colombian government also requires export permits. Cotton, wool, and rice also require export permits. Other government controls include a minimum export price on cotton.

Agricultural Program Evaluation

Colombia's controlled economy has affected all sectors, but the programs have been generally expensive for the government. For many years, IDEMA was charged with supporting producer prices while keeping consumer prices low. This process eventually meant that IDEMA could not cover its own costs and it sometimes fell behind in paying support payments to producers. Caja Agraria had similar problems when it was required to supply services in excess of resources; it had to be bailed out by the central bank.

Because Colombia's domestic prices are significantly higher than those of its neighbors, the government has had to deal with contraband imports of many agricultural products, making it difficult to implement agricultural policy.

High retail prices have resulted from trade barriers which distorted production and marketing costs of most agricultural commodities. Colombia's tight rein on agricultural imports has had other effects. Limitations on mixed feeds have constrained the livestock industry, particularly poultry. About a fifth of the ingredients are imported, including fishmeal, vitamins, and other minor ingredients.

The overvalued exchange rate has influenced Colombia's policies, and countervailing measures have been introduced to compensate for the effects of the exchange rate. A higher real effective exchange rate for imported commodities translates to a lower real effective exchange rate for exporters, and is equivalent to the imposition of a tax on exportables. The Colombian government consequently has had to introduce the CERT's to alleviate the exchange rate influence on its major noncoffee export commodities and increase tariffs on the import side. The import substitution policy has limited economic growth and employment and has affected income distribution.

Another disadvantage of such a controlled economy is the loss of economic efficiency in failing to react to world market price signals. The controlled policy toward coffee for example has not allowed producers to adjust to the downturns in international coffee prices. Colombia has built up large stocks and has had diversification programs for some time. But, one must weigh the costs of stock buildups against the gains in foreign exchange earnings.

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COSTA RICA

Nydia R. Suarez

Agriculture continues to be one of the most important sectors of the country's economy, currently generating about 20 percent of GDP and accounting for about 30 percent of total employment. Costa Rica's wide range of climates permits cultivation of a variety of crops. Those produced mainly for export--coffee, bananas, cacao, beef, and sugar--predominate over those grown primarily for domestic consumption: rice, beans, corn, and pulses. Since the early 1980's, the government has promoted increased production of nontraditional exports like macadamia nuts, melons, pineapples, and cut flowers.

Costa Rica's major imported food items are wheat and flour, processed milk, canned fruits, and vegetable preparations. Wheat, not produced by Costa Rica, and flour are the country's most important agricultural imports.

The Economy

Costa Rica, a middle-income country, until 1977 sustained an average real GDP growth rate exceeding 6 percent per year for nearly three decades. During that period, Costa Rica achieved one of the higher levels of per capita income in Latin America. Growth in income was fairly equitably distributed, health services became widely extended, infant mortality declined sharply, and annual population growth dropped from 3.7 to 2.4 percent. After 1979, however, the real GDP declined and was accompanied by double digit inflation, huge public sector deficits, adverse shifts in the terms of trade, and an enormous external debt. The public sector deficit grew to 12-20 percent of GDP from 1979 through the mid-1980's. Much of this deficit growth was attributable to the autonomous public agencies. The government borrowed heavily to meet both the fiscal and foreign exchange deficits. Slower output growth in agriculture and the inefficiency of many public sector and private industrial enterprises exacerbated the situation.

The country's economic history reflects an image of a democratic republic and entrepreneurial achievement. But, underlying problems such as an extremely high external debt and political turmoil in Central America may affect the country's economic and democratic stability.

The Agricultural Sector

Agriculture plays a dominant role in the economy. Although its share of the GDP has declined since early 1970's, the agricultural sector has accounted regularly for over 60 percent of foreign exchange earnings and has remained the principal source of government revenue. The sector can be divided in two subsectors: the modern which produces and exports coffee, bananas, sugar, beef, and cocoa, and the traditional which produces rice, beans, corn, fruits, vegetables, milk products, poultry, and eggs. Medium size and large farms produce 70 percent of the value of agricultural output. About 90 percent of the value of production of large farms is exported (60 percent for medium size farms). About 70 percent of the value of production of small farms is used for domestic consumption.

Policy Goals

Although the economy is based on the private enterprise principle, the government has taken an active role in the economy through regulations and public sector corporations since the civil war of 1948 and the constitution of 1949. The economic development goals have been based largely on expansion of the agricultural sector.

For many years, Costa Rica was a model of development. World prices for its basic exports were favorable. A 6-percent annual economic growth rate was attained. But in the late 1970's, the nation was struck by a series of severe economic blows. Oil prices and interest rates skyrocketed while world market prices for Costa Rica's traditional exports--bananas, coffee, sugar, and beef--fell. Regional political turmoil undermined Central American common market trade. These events, combined with a heavy debt burden, led to a rapid economic deterioration. All these difficulties were compounded by Costa Rica's high level of industrial protectionism, overvalued exchange rate, and subsidized interest rates. In early 1980, the government confronted the growing crisis with a program of across-the-board austerity measures. Among the policy's reforms were amendments of the central bank law and passage of a new monetary law in 1984. The revised central bank law expanded the scope of private banking and increased central bank allocations for the private banks.

Under the old monetary law, loans were required to be repaid at the official local currency rate of 20.5 colones to the dollar. With a free market rate of 52 colones to the dollar, investors were reluctant to accept repayment at the low official rate when the real value of the currency was as much as a third less. Artificial rates of exchange effectively suppressed investments and new lending. The new law stipulates that all loans must be repaid in the same currency in which they are borrowed, helping to restore investor confidence.

The export incentive law, passed in February 1984, removed taxes and other disincentives to producers and exporters of nontraditional products for a 12-year period. This law is the backbone of the Costa Rican export promotion strategy.

The country's administration inaugurated in May 1986 has proposed a new agricultural policy plan. The most important aims of the plan are: stimulate national production to satisfy internal demand, increase production and productivity of traditional and nontraditional products for export, offer consumers a large variety of food products at prices compatible with their incomes, generate more employment in the agricultural sector, supply more credit when necessary, and improve the agricultural system.

Agricultural Programs

The agricultural sector and policy are supported by the ministry of agriculture and several other autonomous institutions. The ministry is responsible for agricultural research and extension, including genetic seed production. However, resources for agriculture have been traditionally limited and appear to be declining in relative terms. In the early 1980's, only 0.26 percent of the national budget went to agricultural research and 0.34 percent to agricultural extension. Only about 10 percent of farmers have access to extension services of the ministry.

The national production council, established late in 1943, is responsible for the marketing of agricultural products including price setting and the production and sale of certified seed. The council was made responsible for estimating production of staple food commodities and arranging for their imports to avoid shortages or speculation. Upon recommendation of the council, the central bank authorizes the purchase of seeds, fertilizers, insecticides, fungicides, agricultural equipment, and other items essential to the promotion of national agricultural output. Also upon the council's recommendation, the bank authorizes exports of corn, rice, or beans when in surplus.

The national production council maintains support prices on such commodities as rice, beans, corn, sorghum, and sesame at generally above world market prices and operates storage facilities such as silos, granaries, or refrigerated warehouses for agricultural and industrial products to regulate supplies and maintain prices at reasonable levels.

The council and the ministry of finance are the two government institutions playing a major role in determining price policy for basic grains. The council has wide discretion with respect to the number and kind of agricultural products subject to its market intervention policies. But, it has chosen to concentrate on basic grains which represent a substantial proportion of the value of agricultural output. The key feature of council market intervention policy is the price support program which guarantees minimum purchase prices to farmers for basic grains. The council also has monopoly control over imports and exports which effectively protects the domestic market from the international market. The national production council also owns a network of retail sales outlets distributed throughout the country in which it sells staple goods to consumers.

Most agricultural prices are set and controlled in one way or another. The farm price for basic grains is set by the council in advance of the cropping season, while the wholesale and retail prices are set by the council in conjunction with the ministry of finance. Tobacco farm prices are set by a board called La Junta del Tabaco and coffee prices are set by La Oficina del Cafe. The Liga de la Cana controls the marketing and prices of sugarcane production and processed products. Most other retail prices are set by the MEIC.

Some of the other means used to carry out policy objectives in the agricultural economy include planting credits, crop insurance, minimum salaries, technical production assistance, and animal and plant health programs.

Agricultural Program Evaluation

The government economic policy adjustments and austerity measures of the early 1980's successfully stabilized the economy. Inflation fell from annual rates of 100 percent in 1982 to below 20 percent. Unemployment declined from 10 percent in 1982 to a current level of less than 7 percent. The GDP rose by 6.6 percent in 1984 following a 7-percent decline in 1982. Costa Rica's nontraditional exports to markets outside the Central American common market were up nearly 27 percent in 1984 over the previous year's total.

However, the same strategies which Costa Rica pursued successfully in an earlier period left some barriers to future development. Agricultural production expanded by bringing new lands into production, and local manufacturing efforts, first directed to the domestic market and later to the Central American common market, were promoted to achieve substitution of imported industrial goods. The public sector played a key role through investment in infrastructure. At the present time, extensive agricultural land development is checked because of limited remaining unexploited land suitable for agriculture. Import substitution is no longer a viable growth strategy, and the public sector which has long lived beyond its means continues to be a destabilizing resource drain.

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CUBA

Richard N. Brown, Jr.

Prior to the 1959 revolution, of commercial agriculture and industry were owned and operated by the private sector. Nearly everything is now owned and operated by the state. Prior to the revolution, food was plentiful but many families lived in ignorance and poverty. Since the revolution, many staples have been rationed, but the poorest have better living standards. They have better incomes, housing, and working conditions and increased access to medical and educational facilities.

Cuba is a centrally planned socialist dictatorship. Castro was the revolutionary leader in the 1950's and has been the chief of state since 1959. Except for some small farms and businesses, practically all agricultural and industrial resources are now owned and operated by the State, either collectively or cooperatively, and most national policies are geared to the development of the ultimate socialist state.

Economy

Cuba, with its 11.1 million hectares of land and 10.2 million people, is the largest island country in the Caribbean. In 1985, national income, measured as gross social product (GSP), was approaching $30 billion, or $3,000 per capita a year at current exchange rates. This puts Cuba among the middle-income countries of the Caribbean.

The Cuban economy is critically dependent on trade to get the inputs it needs to maintain the productive capacity of agriculture and industry. Its primary imports are petroleum, machinery, chemicals, and some foods such as wheat, but the United States has not traded with Cuba since 1960 when the embargo was imposed.

The foreign trade deficit, growing steadily in recent years, has been partially financed with tourist dollars, foreign capital, public debt, and other standard instruments. In 1985, exports totaled U.S.$6.6 billion and imports totaled U.S.$8.8 billion, leaving a trade deficit of U.S.$2.2 billion.

Sugar, accounts for nearly 75 percent of export sales as it has for several decades. Sugar exports will remain the key to Cuba's financial solvency over the next few years, because planners are attempting to push annual sugar production to 10 million tons.

Cuba imports all of its wheat and wheat products and part of its feed grain, oilseed, and livestock product requirements. Cuba also imports nearly all of its petroleum and a high percentage of its machinery and durable products. Considerable industrialization has occurred in Cuba but imports are still critical to the Cuban economy. Russia and centrally planned countries support the economy.

The Agricultural Sector

Although total national income has been growing faster than the population since the revolution, per capita incomes are relatively low compared with some high-income economies in the Caribbean. Total agricultural output fell dramatically in the early 1960's and only recently regained prerevolution capacity. But per capita food production still has not returned to prerevolution levels.

Agriculture is the dominant force in Cuba's economy, although it generates less than 15 percent of Cuba's GSP. Industry, which includes most agribusiness activity including sugarcane milling, accounts for 55 percent of total GSP. Construction, commerce, transportation, and government account for the remaining 30 percent.

The value added in agriculture is primarily generated in three subsectors: sugar, livestock, and domestic food crops. Sugar manufacturing and food processing account for 25 percent of total economic activity. The value added by tobacco, beverage, and leather processing industries is combined with the value added by sugar manufacturing and food processing, accounts for about 50 percent of total GSP.

Since the revolution, sugar and citrus production for export has been increasing steadily, but export production of other commodities has not increased appreciably. Fresh fruit and vegetable production, formerly exported to the U.S. winter market, is now primarily used to feed the domestic population. Citrus, for export to Eastern European markets, has been the fastest growing subsector in the past 5 years.

Policy Goals

Based on the trends of the past 10-15 years, per capita food production might regain its former capacity about 1990. However, the government has recently been trying once again to implement the last phase of the revolution by forcing all remaining small farmers into cooperatives. This includes the recent closing of the independent farmers' markets opened on a trial basis a few years ago.

National policies have three primary goals: modernize and industrialize the economy, increase the standard of living for all residents, and increase Cuba's self-sufficiency without reducing its export capacity.

Agricultural goals are to expand annual sugar production to 10 million tons, organize all independent producers, and increase output and production efficiency. Import substitution and self-sufficiency continue to be primary national goals.

Goals are implemented by national, regional, and local planning boards which allocate all resources, including labor. Prices of nearly all goods and services are set and supplies, if limited, are usually rationed. Rationing is widely used, both formally and informally. Surplus production, if any, is typically programmed for export to a specific market such as Eastern Europe or the USSR.

Government-owned businesses and corporations control nearly all production. Government-owned trading companies control buying and selling, including foreign trade. If the government does not want something produced or imported, then the item is typically listed as unavailable, or omitted from the list of available items. Services such as communications and transportation are also totally controlled by the government. Police services are used to enforce all regulations.

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THE DOMINICAN REPUBLIC

Richard N. Brown, Jr.

The Dominican Republic produces nearly enough food for its own needs. However, it continues to import some processed foods and a number of temperate zone crops not adapted to the local climate and soils. The country has also been importing more vegetable oil and oilseed products to supplement limited domestic supplies. The Dominican Republic historically has been able to export enough sugar and food products to pay for imports.

Although agriculture has declined in importance, it remains the dominant force in the Dominican economy. Industrial development and diversification are progressing, but sugar remains the primary industry, accounting for 30-40 percent of export earnings. The Dominican Republic displaced Cuba as the chief foreign sugar supplier in the U.S. market in the 1960's and was doing fairly well until the United States drastically cut its global sugar quota in the mid-1980's.

Economy

The Dominican Republic, with 6.5 million people, occupies 4.9 million hectares on the eastern side of the Caribbean island of Hispaniola (Haiti occupies the other side). Literacy and incomes are above average for this part of the world. Until recently, per capita incomes were growing steadily along with the economy.

GNP in 1986 increased less than 1 percent, compared with 3-5 percent during the 1970's. Per capita real income has fallen at an alarming rate and is now estimated to be less than U.S.$1,000 per year. Unemployment is rising and inflation has become a serious problem since the world sugar market collapsed in 1981-82. Nevertheless, the Dominican economy performed much better than expected in 1986, as total export income remained strong even with declining sugar sales.

GDP is estimated at U.S.$6.5 billion. Annual imports average about U.S.$1.3 billion and exports average about U.S.$0.8 billion. Petroleum and industrial products dominate imports, but sugar, coffee, and a few other agricultural products dominate exports. The economy will likely grow rapidly when global markets for its products improve.

The United States remains the primary trading partner of the Dominican Republic. About 80 percent of its agricultural imports are supplied by the United States and 70 percent of its agricultural exports are purchased by the United States.

The Dominican Republic holds the largest share of the U.S. global sugar quota. Prior to 1983, when U.S. annual import needs were about 3-4 million tons, the Dominican Republic's 17-percent share was valuable. By 1988, it will be nearly worthless unless U.S. sugar policy is rewritten. The 850-950,000 tons of sugar the Dominican Republic exported each year in the late 1970's and early 1980's supplied more than 30 percent of the country's export earnings.

Food imports primarily diversify diets and fill production shortfalls. Agricultural exports continue to exceed imports by more than a 2-1 margin. A complex set of government policies has been implemented over the past 20 years to maintain agricultural self-sufficiency.

Policy Goals

Twenty years ago, agriculture accounted for 40 percent of national income, 55 percent of employment, and 90 percent of export earnings. Agriculture now accounts for less than 20 percent of national income, 45 percent of employment, and less than 70 percent of export income.

In the 1960's, the primary goals of government policy were to expand and diversify the agricultural and industrial sectors to reduce the economy's dependence on traditional exports such as sugar, coffee, and cocoa. Today's goals are the same, but the urgency has intensified. In the past, merchandise exports exceeded imports by a healthy margin. Today, the country is in debt and merchandise imports exceed exports by about U.S.$500 million a year. Government management of imports and exports has become a primary shortrun national goal.

Agricultural Program Evaluation

Although government policies and objectives have not changed appreciably in the past 20 years, the policy tools employed have been broadened and refined considerably. Recent changes seem to be having a measurable effect on the economy. Most of the changes, however, are inflationary, which lowers the standard of living without creating very many new employment opportunities.

The latest policy changes have tightened government control of production, marketing, and consumption to the point where diversification from traditional crops may finally be realized. Sugar production has fallen by a third in the past 2 years, while production of fruits and vegetables is increasing. However, the continuing depressed state of the world sugar market may affect sugar production more than domestic policies do.

Despite the controls imposed on agriculture and industry in the past few years, the Dominican economy remains open to private developers and investors, both domestic and foreign. However, like most developing economies, the agricultural sector is highly regulated. The following agencies play a major role in the economic life of the country:

SEA--The state secretariat of agriculture provides resources to implement and enforce a wide variety of agricultural policies.

CEA--The state sugar council manages all government-owned sugar mills and estates which produce more than half the annual cane sugar crop. Two private companies produce the balance of the annual crop.

INAZUCAR--The Dominican sugar institute facilitates the marketing of all Dominican sugar and byproducts, both at home and abroad.

INESPRE--The price stabilization institute, a very powerful agency, is responsible for setting and enforcing producer and consumer prices and controlling all food imports.

Banco Central--The central bank controls the financing of all imports and exports, the collection of import and export taxes and duties, the enforcement of currency conversion policies, and the management of the public debt. It also regulates money supplies among other things.

BAGRICOLA--The agricultural development bank provides low-interest credit to farmers and peasants.

IAD--The land reform institute assigns plots of state land to peasants and helps them market their products.

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ECUADOR

H. Christine Bolling

Ecuador, located on the equator, is a large producer of tropical products. It is the world's largest exporter of bananas and a major exporter of cocoa beans. Coffee, cocoa beans, and potatoes (in the highlands) are the principal crops. Beef and dairy are the principal livestock enterprises. Agriculture provides 14 percent of the GDP. The government is undertaking a significant shift in agricultural policy to a free-market orientation, a departure from past policies. The main government agricultural policy, however, is continued promotion of agricultural self-sufficiency.

The Economy

Ecuador is a lower middle-income country that has undergone economic decline in recent years as the value of petroleum, its major export, fell. Petroleum provides two-thirds of Ecuador's export earnings, about a tenth of GDP, and about a third of government budget revenues. Ecuador also has been burdened by a heavy foreign debt. The external debt crisis has forced the government to reschedule debt and curtailed the country's ability to import.

Policy Goals

Ecuador's general economic policy is currently circumscribed by the provisions of an agreement signed by Ecuador and the International Monetary Fund to relieve Ecuador foreign debt burden. The program generally includes austerity measures such as ending subsidies, raising interest rates, tightening credit, reducing the budget deficit, and restricting imports.

Ecuador's economic policies have taken wide swings from a controlled economy to a free-market economy. The government's 1986 policy initiatives represent a sharp departure from the past, as Ecuador's agriculture adjusts to a free market economy. The general agricultural policy aims for self-sufficiency.

Agricultural Programs

The new policy initiative consists of (1) ending official prices and letting the free-market mechanism operate, (2) privatizing the majority of government storage facilities and ending large government market operations, (3) restricting government involvement to that of a market supervisor and overseer, (4) establishing a national agricultural commodity exchange, (5) providing more credit and technical assistance, and (6) providing price stabilization measures for corn, rice, soybeans, and sorghum, and reference and release prices for wheat.

Prior to 1986, the ministry of agriculture, through its national agricultural products marketing and storage company (ENAC), administered prices of 20 basic commodities and products. ENAC still buys wheat and sells rice on the international market.

The government also plans to purchase warehouse receipts for basic commodities and maintain these amounts in storage until prices reach specified release levels through a price band system. For wheat, corn, sorghum, rice, and soybeans, 1-month's consumption level will be maintained to offset possible supply interruption.

The government guarantees the producer a minimum price for milk. Dried milk is imported by Empresa National de Products Vitales (EMPROVIT) and mixed with fresh milk or sold at a lower price as reconstituted milk. There were no price controls on cheese, butter, or other manufactured dairy products.

The government held domestic diesel fuel prices constant at a low level from 1971 to 1980. As inflation persisted, real prices of petroleum products fell significantly. Long distance transport costs (in real terms) fell, thus reducing inland prices of imported and bulky commodities.

A subsidy for diesel fuel also lowered transportation costs of such imported inputs as fertilizer. Costs of mechanization on the farm are also lower than what they would have been. The ministry of agriculture also had a program covering the operating costs but not capital and depreciation costs on machinery hire services that it provided to farmers, thus lowering mechanization costs to some farmers.

Farmers have also benefited from subsidized interest rates. Most of the credit was provided by Banco National de Fomento (BNF). Interest rates have been consistently below the inflation rate.

Until the devaluation of the 1980's, many agricultural trade policy decisions were made in the context of an overvalued exchange rate. During the 1970's, Ecuador maintained a fixed exchange rate even though its rate of inflation was 20-25 percent higher than the inflation of its major trading partners. Accompanying this overvaluation was extensive tariff protection, particularly for industry.

Wheat, however, is imported duty free at the official exchange rate. Most agricultural inputs like fertilizer are imported duty free or with a 3- to 10-percent import duty.

Virtually all of the commercially milled wheat is imported. To bridge the gap between domestic and international market prices, the government subsidized the price of imported wheat to millers. Beginning in 1973, millers were compensated for any increase in import price that was above a reference price ($137 a ton from 1973 to 1982; $195 a ton in 1983). Because of these subsidies, the price of wheat flour to bakers was constant.

During the early 1980's many commodities like dried milk, butter and cheese, potatoes, and corn were shifted from the list with higher tariffs to the prohibited list. The tariff on barley was lowered in 1983, but imposition of the free-market exchange rate on barley imports has made barley relatively expensive to import.

Agricultural Program Evaluation

The general exchange rate policy has affected Ecuador's agriculture. The fixed exchange rate with high inflation meant that imported goods become less expensive relative to nontraded domestically produced goods. Farmers lost parity since they paid higher prices for consumer goods but received below world prices for their products. Domestic wheat production declined because it was competing with duty-free imported wheat valued at an overvalued exchange rate and then transported to the mills at a subsidized transportation cost. Other enterprises like dairy, potatoes, and barley were more protected by trade barriers.

Differentials in credit use benefited capital-intensive industries. For example, dairying received more credit which enabled it to make rapid gains in productivity. Some land shifted out of wheat and into pasture for dairying. Rice farming was also a large recipient of subsidized credit.

The consumer subsidy on wheat flour kept consumer prices for wheat flour constant from 1973 to 1982. The decline in real prices (because of inflation) made flour and bread very competitive with other foods, which was an influencing factor in increasing Ecuador's wheat imports for many years.

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EL SALVADOR

Nydia R. Suarez

EL Salvador is a poor, densely populated country with limited natural resources and a large share of its rapidly growing population living in poverty. Agriculture is the backbone of the country's economy, accounting for 25 percent of GDP, 40-50 percent of the labor force, and about 75 percent of total exports. Government policy has shifted from promoting exports to increasing production to assure more adequate and stable food supplies. A land reform program has been enacted, giving tenants ownership title to land they rented. The government also nationalized the banking system so funds could be disbursed more widely. Foreign trade was also nationalized. These reforms have not reaped any significant advances in production output. They have contributed to growing violence, massive capital flight, and exodus of entrepreneurial and professional talent.

The Economy

El Salvador has a population growth rate of more than 3 percent. The country already has the highest population density in Latin America, where almost 5 million people live on 2.1 million hectares. The economy is primarily agricultural, with coffee representing more than 50 percent of total exports, followed by cotton and sugar. Corn, beans, and sorghum are the subsistence crops. The United States is El Salvador's principal trading partner, taking about 35 percent of its exports and providing 30 percent of its imports.

The economy grew at an annual rate of more than 5 percent during the 1960's and 1970's. This growth was a result of expansion in the agricultural, manufacturing, and construction sectors. El Salvador recovered from the 1973-74 oil crisis only to face another sharp jump in its oil import bill, beginning with the cutback in Iranian production in late 1978. Since then, the economy has continued to decline. Growing violence has caused a decline in the agricultural sector. Private investment and the manufacturing and construction sectors have stagnated the whole economy.

Despite war and economic crises, El Salvador has successfully adopted a constitutional, democratic form of government. In 1984, the Salvadorans elected their first civilian president in over 50 years.

The Agricultural Sector

Agriculture is the most important productive activity, generating about 25 percent of GDP and providing employment for half the economically active population. Exports of coffee, cotton, and sugar provide about 60-70 percent of total exports. Agricultural exports are traditionally an important source of foreign exchange earnings.

Agricultural production is divided into three categories: large plantations specializing in export crops, medium to small operations producing crops for domestic consumption, and subsistence farms outside the market economy. The principal agricultural exports are coffee, cotton, shrimp, and sugar. Coffee is the most important crop in terms of contribution to GDP, employment, and source of foreign exchange. The subsistence agricultural sector mainly produces beef, rice, corn, beans, and sorghum.

Policy Goals

For years, agricultural policy was mainly concerned with promoting exports. This emphasis changed in the early 1970's when the government supported irrigation, improved seeds and technology, small farm credit, and basic grains marketing to increase the output of staple food.

More recent government food policy has been directed at increasing production. The aim is to assure more adequate and stable supplies, especially for people heavily dependent on these foods for subsistence. The government has undertaken a number of projects to diversify and increase agricultural production.

Agricultural Programs

In early 1986, the government launched a 3-year economic stabilization and revitalization program containing these measures: the official and parallel exchange rates were consolidated at 5 colones (local currency) to the U.S. dollar, interest rates on lending and borrowing transactions were raised to bring them closer to a positive real level, legal reserve requirements were increased, expansion of government credit was curtailed, and a trade policy was adopted that included approval of a new export promotion law. The government also enacted a prohibition on imports of nonessential goods and established a 100-percent advance deposit in national currency for imports. To protect personal income, the government approved wage increases in the public and private sectors and froze prices of articles making up the basic food basket.

Most reforms pertaining to agriculture began in 1980. The five-member junta ruling the country during most of 1980 enacted a phased land reform program to expropriate estates over 500 hectares (phase I), expropriate estates over 100 hectares (phase II), and issue ownership titles to all tenant farmers on the land they rented (phase III). The junta then nationalized the banking system to eliminate the concentration of credit to only a few people and enterprises. The junta also nationalized foreign trade.

Agricultural policy is implemented through the ministry of agriculture and some semiautonomous agencies. The food supply regulating institute (IRA) is the principal state agency for intervening in domestic food marketing. Due to the limitations of its storage facilities and financial resources, IRA's domestic purchases have represented a relatively small proportion of the total market during major harvest periods. It has sought to pay relatively high minimum support prices to producers during the harvest periods and then to absorb the costs of product storage in order to have moderately priced supplies of basic foodstuffs available during off-seasons. IRA enters into the supply contracts with small producers and agrarian reform enterprises to pay them directly or, more commonly, through the producers' financial institutions at the time of product delivery. The majority of IRA's domestic purchases have been corn, beans, and rice. Sugar also continues to be an important item sold through IRA's sales outlets. IRA does not purchase, sell, or set prices for sorghum. IRA imports of basic grains and milk have declined, or disappeared entirely, in recent years as bilateral and multilateral concessionary supplies of these items have become increasingly available.

In early 1980, the government established two new agencies, INAZUCAR and INCAFE, responsible for undertaking sugar and coffee exports. Policies of the agencies are controlled by boards composed of the ministers of foreign trade, planning, economy, agriculture, and finance; president of the central bank; and a representative of the president of the country. These reforms expanded the government role in the economy, especially in agriculture. These agencies also took charge of the private sugar mills and coffee processing plants, which became state property as a result of the land reform program.

INAZUCAR is presently in charge of nine sugar mills, representing about 90 percent of the sector's capacity to produce raw sugar. INAZUCAR handles both domestic and export marketing. INCAFE was created to carry out all marketing of green coffee. It also assumed control of 22 green coffee processing plants which the government had acquired through the agrarian reform. Most of these beneficios have now been transferred to agrarian reform cooperatives, but INCAFE is still the proprietor of five. INCAFE purchases freshly picked coffee from the producers and contracts with the privately owned beneficios to process the beans into exportable coffee. INCAFE handles all export sales through brokers in its two principal markets, the United States and West Germany. INCAFE receives all sales proceeds and pays the producers and millers.

Agricultural Program Evaluation

El Salvador's development record during the two decades ending in 1979 reflects the economic and agricultural policies that were in place during this period. They were successful in sustaining rapid rates of economic growth by increasing domestic savings, attracting foreign investment, and expanding public and private sector investment in support of expansion of labor-intensive agricultural and industrial production for export. Production for domestic consumption increased rapidly after the mid-1970's while export production, particularly coffee, also continued to expand. Agricultural and food production indicies, both total and per capita, showed significant advances during the 1970's.

The Government economic and agricultural refor. ' of the 1980's had an adverse effect on some sectors of the Salvadoran society and the growing violence led to massive capital flight and exodus of entrepreneurial and professional people. As a consequence of the sharp decline in the level of economic activity, reduced export earnings and rising expenditures associated with the agrarian reform program, and the government's increased military commitment to combat guerrilla activity, public finances deteriorated significantly.

Agriculture is in a critical stage. Despite efforts to increase output of basic foods, El Salvador has had to increase food imports to offset production deficits. Furthermore, export crops are affected adversely by social unrest, uncertainties about future land reform efforts, and low export prices that diminish the country's ability to pay for imports.

The stabilization and revitalization program launched in 1986 did not perform as expected. The combined effect of devaluation, tax measures, wage increases, and easing of price controls pushed inflation higher than the annual target of 20 percent. As inflation accelerated, the currency began to appreciate, with negative repercussions on output and the external sector.

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GUATEMALA

Nydia R. Suarez

Guatemala has Central America's largest and most industrialized economy. It has some petroleum and nickel deposits, and a substantial hydroelectric power potential. Although its manufacturing sector is more competitive than that of neighboring countries, agriculture continues to be the most significant sector in terms of employment, GDP, and foreign exchange earnings. Manufacturing accounts for 16 percent of GDP and centers on food processing and production of beverages, tobacco, textiles, and leather goods. The most important agricultural exports are coffee, cotton, sugar, cardamom, and bananas. The United States is Guatemala's largest trading partner, accounting for more than a third of its exports and imports.

The Economy

The country returned to a civilian government in 1986 after almost continuous military regimes over the last 30 years. A constituent assembly was freely elected in 1984 and elaborated a new constitution. General elections were held in late 1985 and the new president took office in January 1986.

The Agricultural Sector

Agriculture is the most important sector of the economy. It contributes a fourth of GDP and over two-thirds of total foreign exchange earnings. Agricultural production also absorbs about 60 percent of the labor force, mainly in small-scale subsistence farming. Large-scale commercial agriculture accounts for the bulk of aggregate production and almost all export crops.

Guatemala has a total area of 10.8 million hectares, of which 29 percent is agricultural and 39 percent is forested. The farm sector is characterized by wide regional diversity and a highly skewed farm-size distribution. Guatemala has a dichotomy of traditional food crops and export crops. Food crops include corn, beans, rice, and a third of the country's wheat requirements. The traditional export crops are coffee, cotton, bananas, beef, and sugar.

Policy Goals

Current agricultural and economic policy goals are to increase total output of basic foods and to implement policies moving the economy to free competition in world markets. Guatemala has followed different models for its economic development. In the early 1900's, the focus was product-centered with emphasis on the exports of coffee and dyes for the European textile industry. Although these product-centered strategies allowed some periods of economic growth when prices were favorable, they were not able to translate the benefits of this growth to all segments of the economy.

During the 1960's and 1970's, Guatemala joined the Latin America import substitution drive and the Central American common market. Guatemala enjoyed steady and relatively rapid growth during this period. Prices were favorable for its principal exports, exports of manufactures to the common market partners were significant, and flow of foreign investment and financing were steady.

The steady growth abruptly ended in 1980. In a renewed effort to stabilize the economy, the administration implemented an adjustment program involving a simplification and gradual unification of the exchange system, a reduction in the combined fiscal deficit and losses of the bank of Guatemala through increased taxation, a slowdown in the rate of overall credit expansion, and a liberalization of price controls.

The structure of land distribution has been the most important factor determining the pattern of development of Guatemala's agricultural sector. There is a well-defined dual structure composed of a modern segment with large land holdings (latifundios) producing export crops, and a traditional segment with very small farms (minifundios) practicing subsistence agriculture. The government is responding to landless groups by buying some privately owned land and foreclosing on land used as collateral for defaulted loans.

Agricultural Programs

A comprehensive assessment of rural areas indicated that food production was just barely keeping pace with growing demand and that rural incomes and farmer productivity were stagnating. The government then initiated its first national rural development plan (1971-75). The ministry of agriculture (MOA) was restructured to institutionalize what is called the public agricultural sector, creating several specialized institutions. Semi-autonomous institutes were created within the public agricultural sector to serve the small-farm food producing sector. Some of the these institutes are institute of agricultural science and technology, national bank for agricultural development, agricultural commercialization institute, and the agrarian transformation institute.

The institute of agricultural science and technology addresses four problems identified in the rural sector assessment: lack of adequate technology for the small farmer, inadequate farm testing of the technology being recommended, lack of evaluation of farmer acceptance of a recommended technology, and the researchers' lack of knowledge of farmers' problems and their insufficient contact with extension agents.

The agricultural commercialization institute was created in 1971 to support producer prices of basic staples and set support prices at different levels throughout the country as part of its program to stabilize prices in the capital city. The institute stabilizes the prices of grains by setting the prices before harvest and by buying or selling enough of each to maintain those prices. There is little direct government intervention in export crops, apart from temporary market stabilization measures. The government sets producer prices and marketing quotas, but marketing and exporting are generally handled by the private sector.

The wheat imports regulating office sets the prices of wheat which mills must pay farmers. These prices are usually set at levels higher than the import price. To maintain the price, the mills must buy all domestic production before the government will permit imports.

The agrarian transformation institute procures land for the peasants and institutes land reform.

Guatemala has a history of price controls which were intensified in 1976 after an earthquake. Price controls were extended to about 50 items, more than half of them food items. Controls were loosened in 1977, but were retained for basic staples. However, as a result of depreciation of the quetzal in 1984, inflation grew considerably and price ceilings were imposed again in many items. The price ceilings were not observed and inflation had increased by 23 percent by the end of 1985. At this point, the government issued a new listing of about 450 items and deployed 1,200 inspectors to enforce the ceiling prices.

Agricultural Program Evaluation

Agricultural policies have not generally met their primary goals, especially since per capita agricultural output has not keep pace with the 3-percent population growth. Most of the programs implemented to eliminate or alleviate equity problems of the rural population have exacerbated the situation. Government assistance to small farmers in providing lower cost fertilizer helped to reduce costs of production for certain commodities. But price controls have created distortions in some markets.

The allocation of agricultural credit has been an important and controversial issue in Guatemala. Most of the agricultural credit goes to export crops and not enough to basic food production.

Guatemala's steady growth abruptly ended in early 1980's with the onset of global recession. Internal political problems also impeded both private and public sector investment in the economy. With the deterioration in external economic conditions, macroeconomic policies became more uncertain and less conducive to growth. GDP declined. Lower export products prices, particularly for coffee until 1986, and higher import prices, worsened the terms of trade and reduced trade volumes, which in turn reduced tax revenues. Political and economic turmoil in Guatemala and the rest of Central America along with the deterioration of the common market depressed manufactured exports, exacerbated capital flight, and sharply reduced private domestic and foreign investment as well as external financing. Insufficient or untimely adjustment of economic policies, particularly exchange and taxation rates, contributed to the overall deterioration.

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HAITI

Richard N. Brown, Jr.

Haiti controls 2.8 million hectares on the drier west end of Hispaniola, with the Dominican Republic occupying the east end. Rugged mountain terrain forms an imposing barrier between the two nations, but it also makes it easier to smuggle goods between the two countries when price disparities are sufficiently large.

Haiti, with about 6 million people, is one of the lowest income countries in the Western Hemisphere. Per capita income averages less than $400 per year and the minimum industrial wage is only $3 per day.

Subsistence farming and light manufacturing dominate the economy. Bauxite was a primary export until the world market collapsed in the early 1980's. Coffee is the principal export and accounts for at least 25 percent of annual export sales. Mangoes, cocoa, and essential oils also contribute to export earnings.

The primary imports, other than the components used in textile and assembly operations, are petroleum, machinery, and agricultural products. Agricultural imports are primarily limited to temperate zone grains, oilseeds, and processed products. The United States is the principal supplier. These imports include wheat and flour, soybeans and soybean oil, and some meat, dairy, and poultry products. Food and financial aid packages have been used extensively to support Haiti's import needs.

Haiti's production, trade, and pricing policies are relatively uncomplicated, but most Haitians have very little money to spend on imports. The government uses price controls, quotas, and import licensing to balance supplies with demand and reduce balance of payments deficits. Under the Duvaliers, merchandise import and export taxes were used primarily to raise government revenues to pay government salaries.

Import quotas are normally adjusted to maintain market prices of food crops as each new domestic crop is harvested. Export taxes are adjusted as revenue needs change. The export tax on coffee, for example, has been in the 30- to 40- percent range during most of the 1980's. Since 1985, however, the government has attempted to reduce export taxes on coffee and some other exports as quickly as possible because the transitional government feels these taxes negatively affect production. Domestic food prices are also controlled, particularly in urban areas, to prevent food riots among the poor. Licensing is used to control importing and exporting firms since the government has avoided regulating the foreign exchange markets in Haiti.

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HONDURAS

Nydia R. Suarez

Honduras, the poorest and second largest country in Central America, has primarily an agricultural economy, depending on farm products as a major source of income, employment, and exports. Bananas, coffee, corn, sugarcane, and cattle are the major commodities produced. Wheat is the major imported foodstuff but significant amounts of edible oils and fat and nonfat dry milk are also imported. Except for these items, mostly imported from the United

States, Honduras is essentially self-sufficient in food production. The country's economy has long had a major international trade component.

The government has given high priority to economic growth and stabilization. A restructured fiscal and monetary program, strong support for the nontraditional export sector, diversification of intermediate industrialization, and modification of existing regulations to attract new foreign and local investments are the principal components of the government's approach.

The Economy

Honduras is one of the least developed countries in Latin America with about 4 million people living on an average per capita income of $720 in 1985. The country's economy is largely based on primary product exports: bananas, coffee, sugar, and lumber. Exports constitute nearly a third of total demand and imports about a third of supply. International trade and external forces have a major effect on national economic growth and employment as well as on economic stability and prices.

Honduras has a democratic government. The government, elected in early 1986, came to office in the nation's second democratic election in 23 years. Recent events in the region and the country's economic recession, however, have begun to seriously threaten its political stability.

The Agricultural Sector

The agricultural sector is the mainstay of the economy, contributing about a fourth of GDP, employing two-thirds of the economically active population, and supplying three-quarters of the exports. Although the sector provides about 90 percent of the country's food supply, domestic food production has never quite caught up with food needs mostly because of a continuing 3-percent annual population growth rate, one of the fastest in the world.

Honduras has a wide range of climatic conditions permitting production of most warm and cool climate crops. It produces most staple food crops, except wheat. Major export crops include bananas, coffee, sugar, tobacco, and cotton. Livestock and forestry production are also important. Land area is 11.2 million hectares of which 19 percent is arable and another third is in permanent pasture and forest. About half the land in crops is in basic grains, mostly corn produced on small farms.

Agricultural production in Honduras is generally a high-risk proposition with considerable rainfall variation resulting in periodic floods, droughts, and hurricane damage. Little investment has been made in drainage, flood control, irrigation, or soil and water conservation practices to reduce risks of climate variability. However, the country has the agricultural resource base and the production potential to be self-sufficient in food production (except for wheat). It could also become an exporter of nontraditional fresh and processed foods such as fruits and vegetables as well as livestock products such as pork and dairy.

Policy Goals

The government has stressed the need for economic growth and increased employment, and lower inflation rates. Since 1982, the government has strengthened the role of the private sector in accomplishing these goals. Agricultural policy goals include improving the efficiency of the agricultural sector and marketing system by encouraging greater private sector participation in the hope of reaching basic grain self-sufficiency. The government is also looking toward production of nontraditional export commodities as a source of foreign exchange earnings.

Agricultural Programs

Several private institutions and semi-autonomous and government agencies are responsible for carrying out agricultural policies. The semi-autonomous agricultural marketing institute was established in 1978 to support prices, build storage facilities, and improve marketing of basic crops, such as corn, rice, sorghum, and beans. The agency buys as much grain as possible at the support price and resells it on the local market, often at a loss. In most years, prices of corn and sorghum are higher than the U.S. gulf price. However, the price of rice is set below the gulf quote.

The banana corporation promotes development of banana varieties and participates in their production, marketing, and transport.

The Honduran coffee institute is a semi-autonomous government agency providing technical assistance, credit, and other inputs to coffee farmers. The institute represents Honduran coffee interests in the International Coffee Organization, regulates exports inside and out of ICO, and more recently has begun a program of diversification.

The ministry of natural resources, the national agricultural development bank, and the agrarian reform institute are responsible for improving agricultural output. The ministry handles animal health, plant quarantine, research, extension, some input services, and project preparation. The bank is the largest commercial lender to small-scale farmers, although 80 percent still get most of their credit from private sources. The agrarian reform agency is responsible for implementing the land reform program, settling land disputes, granting titles to farmers, and providing guidance to agrarian reform farmers until they achieve full competitive status and gain title to their land.

Honduras has also provided consumer subsidies for basic foods. The original price control legislation established authority over necessities including flour, bread, sugar, salt, eggs, milk, dry milk, meats, and some others. The decree has been revised periodically, most recently by accord 502-81 of December 28, 1981. In that revision, milk, meat, bread, and some less critical items were removed from control to allow prices to be determined by the market. The food price controls were not always effectively enforced although most of the controlled items registered smaller price increases than other items.

Besides the control program, the government subsidizes consumers through government-owned stores (BANASUPRO), where basic food items are priced below local market prices. If an important staple becomes scarce, BANASUPRO can import the item rather than allow sharp price increases or the possibility of black market.

Much of the foreign trade policy has been based on the policy of keeping the exchange rate pegged at 2 lempiras per dollar since 1931. Import licenses, a priority system for import permits, setting foreign reserve limits of commercial banks, and the mandatory full return of export earnings to the government are part of the restrictive trade policy to conserve foreign exchange.

In late 1980, the government imposed regulations for exchange approval and export surrender designed to restrain capital flight and to maintain competitiveness of its exports. In September 1981, these regulations were intensified by the introduction of prior registration requirements for exports, a surrender requirement for all exchange receipts, and the authorization of the central bank to establish priorities in allocating foreign exchange. In May 1982, the government established a priority scheme for the approval of import permits to control demand for nontraditional imports. In July and November of 1983, maximum waiting periods for each of the different import categories were established and the central bank began to grant import permits within 5 days to importers using their own sources of foreign exchange.

In 1986, the government allowed certain exporters to retain a portion of their export earnings, either to finance imported inputs or meet expenses in Honduras with currency obtained from the sale of foreign currency from the parallel market rate.

The private sector, with U.S. aid, has established several organizations to help in the country's development through expanded participation of the private sector. The federation of associations of Honduran producers of agricultural and agro-industry products (FEPROEXAAH) offers technical advice and training in marketing and production of nontraditional exports. FEPROEXAAH was established in 1984 by leaders of agribusinesses and producers' associations to help small and medium-size agricultural producers, processors, exporters, and workers expand the country's export base. The foundation for business research and development (FIDE) was established in late 1984 by four Honduran private institutions to provide assistance to small and medium-size businesses, particularly exporters of nontraditional exports, such as wood products. The foundation identifies entrepreneurs with development potential, arranges for necessary financial and technical assistance, and acts as a communications liaison with U.S. regional and national trade associations.

Agricultural Program Evaluation

Honduras has provided its people with a calorically adequate diet. It has a dual agricultural sector: a modern export-oriented agriculture provides foreign exchange and a subsistence agriculture provides the basic food supply. The policy of subsidizing farmers while subsidizing consumers for basic commodities through government-owned stores has been expensive for the government.

The pegging of the currency to the dollar at a level unchanged since 1931 has been a boon to importers, but has hindered export growth because of overvaluation. The 1986 move to allow exporters to retain part of their export earnings or exchange foreign currency at the parallel rate should improve economic competitiveness. Much of the general economic growth must come from other sectors as well as improved agriculture.

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JAMAICA

Richard N. Brown, Jr.

Jamaica, an island nation of about 2.5 million people, lies about 200 miles south of Cuba. Much of the island is rugged, inaccessible, and sparsely populated. The eastern third of the country has a high percentage of high mountain country where some of the world's finest coffees are grown. Jamaica, however, is primarily known for its sugar, spices, and rum. Tourism has also been a mainstay of the economy for many years, along with bauxite mining. Bananas and citrus are the newest export crops.

Bananas grow very well in a number of areas, but the high rainfall northeastern piedmont is ideally suited for banana growing. Citrus does well there too, particularly in slightly cooler and drier locations. Sugarcane, the primary crop of the colonial era, still occupies some of the best agricultural land. Corn and sorghum are the primary grain crops of the interior, but production remains totally inadequate for domestic needs. Rice is also a dietary staple, but nearly all is imported.

The economy has been under severe economic stress for several years. It is not clear how long it will take the country to overcome the problems of the 1970's. Jamaica was doing very well during the 1960's. But, the election of a socialist government in the early 1970's sent the economy into a tailspin, which the current government has been trying to reverse since 1980.

Depressed markets for Jamaica's primary exports since 1981/82 have stymied nearly every attempt to increase export earnings, making it extremely difficult to recapitalize agriculture and industry after 8 years of socialism. Jamaica was the only country in the Caribbean experiencing 8 consecutive years of negative economic growth in the 1970's. The destructive hurricanes of 1979 and 1980 and the collapse of the world bauxite market in 1982 dashed hopes for a quick recovery in the early 1980's.

The United States is one of the primary supporters and trading partners of Jamaica. Jamaica, however, sells a high percentage of its agricultural exports to Great Britain and other EC countries. But, it imports the bulk of its grain and oilseed products from the United States. It has also relied heavily on U.S. aid programs during the 1980's.

The primary objectives of Jamaican economic policies since 1980 have been to keep the economy financially solvent, rebuild the infrastructure, and create incentives for productive investment. The government uses the following tools to achieve its objectives: production subsidies and two-price policies to simultaneously stimulate production and reduce domestic demand; currency auctions, import quotas, import licenses, negative lists, and governmental trading companies to control imports; and foreign aid programs, including U.S. food aid, to conserve domestic supplies and finance imports. Jamaica has also received foreign grants and loans to support its domestic development programs and to preserve foreign reserves.

Although many of these programs have been somewhat inflationary and unpopular, Jamaica has just survived one of the worst periods in its history. A number of development projects have been implemented since November 1980, but nearly all have failed to generate the desired response. Agricultural production has responded slowly and per capita production has continued to decline. Mineral and industrial production remained nearly stagnant despite all attempts to expand it. Food aid, tourism, and foreign financial assistance have kept the economy afloat, while the public and private sectors searched for viable export opportunities.

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MEXICO

Myles Mielke

Government involvement in the Mexican agricultural and food system is extensive. It includes public investment in infrastructure and plant technology, crop price supports, input and marketing subsidies, and retail price controls. The trade of agricultural products is tightly controlled by the government, largely through licensing requirements. Agricultural programs contributed to impressive sector growth rates until the mid-1960's. Production subsidies continue, but government support to the sector, particularly to food self-sufficiency goals, has waned. Consumption subsidies also continue, but have been sharply curtailed by the economic crisis.

The Economy

Mexico has the fifteenth largest economy and is the eleventh most populous nation in the world. Mexico has been on a path of rapid industrialization since World War II. Since 1976, when vast oil reserves were discovered, the petroleum sector has been the most rapidly growing area of the economy. Mexico's per capita GNP ranks alongside those of Portugal and Korea. However, income distribution remains highly uneven: over 40 percent of income was received by only 10 percent of the population in 1977.

Mexico is a federal republic with a stable government, dominated by one "official" party, although opposition parties coexist. Although Mexico has a market economy with a large private sector, the role of the government in the economy is pervasive. Government spending is high (28 percent of GNP in 1982) and subsidies generous, although the recent economic crisis related to the world oil glut and the foreign debt burden has forced reductions in these areas. Government-owned companies have an important role in some sectors of the economy, particularly agriculture, oil, and services. A national development plan accompanies each 6-year presidential term and guides the formation of specific sectoral policies.

The Agricultural Sector

Mexico's agricultural sector accounts for approximately 9 percent of GNP. The proportion of GNP generated by agriculture has declined as the industrial and service sectors have grown; however, about a third of the population continues to live and work in rural, largely agricultural areas. Agricultural commodities, including coffee, cotton, and vegetables, follow oil as the top foreign exchange earners.

The agricultural sector is extremely diverse and contains about 2.3 million arable hectares. Irrigated, large-farm areas of the arid north produce a wide variety of crops, including wheat, sorghum, oilseeds, cotton, sugarcane, vegetables, and forage crops. Nonirrigated, small-farm areas of the central parts of the country tend to rely heavily on staples such as corn and beans. There is some diversification toward feed grains, oilseeds, and fruits and vegetables, particularly near Mexico City. Irrigated pockets produce crops for agribusiness use, such as strawberries. The southern, tropical regions are oriented to the production of coffee, rice, sugarcane, and traditional plantation crops. Cattle operations are concentrated in the northern and gulf states, where livestock is largely range-fed. Pork and poultry operations are more decentralized and production is more intensive in modern, commercial operations.

Mexico, an important agricultural trading partner of the United States, is the principal supplier of winter fresh fruits and vegetables to the U.S. market, competing only with Florida. Live feeder cattle are also an important export to the United States. In recent years, Mexico has been among the top four importers of U.S. agricultural commodities, particularly grains, oilseeds, and nonfat dry milk.

Policy Goals

Mexico's major economic policy goal has been industrialization. It achieved a rapid rate of growth of the industrial sector through an active policy of import substitution, complemented by high levels of public investment and subsidies. Tariff and nontariff barriers on imports of consumer goods were kept high, while less restrictive import requirements were offered on capital and intermediate goods. Urban wage rates were kept low partially through a cheap food policy. By 1970, Mexico was close to self-sufficient in steel and consumer goods, as well as basic foodstuffs. The need to streamline the domestic economy and generate foreign exchange from non-oil sources has recently forced Mexico to open its economy to international competition and to pursue a more outward-looking strategy.

Goals for the agricultural sector have largely been intended to complement economywide goals. They have included sometimes conflicting goals such as the provision of an abundant and inexpensive food supply to underwrite urbanization and industrialization, the improvement of farm income levels sufficient to avoid widespread rural unrest, the generation of foreign exchange from agricultural exports, and the narrowing of the income gap within agriculture. The major thrust of agricultural trade policy has been government control of the imports and exports of essential foodstuffs and ag icultural raw materials, although the private sector's role in agricultural trade is increasing. Diversification of food import sources is also a recent trade policy objective.

Strong food self-sufficiency sentiments are voiced by the Mexican government and some agricultural policy programs have supported this orientation. However, Mexico continues to rely heavily on food imports to meet domestic consumption requirements. Only food wheat, among the major food items, is produced in sufficient quantities to satisfy domestic demand. The current agricultural plan stresses "food access," whether the food is domestically produced or imported, rather than self-sufficiency.

Agricultural Programs

The government has been involved in all aspects of the country's food system from the farm to retail level since the 1930's. From the 1940's until the mid-1960's, the government invested heavily in agricultural infrastructure. New lands were opened and irrigation was expanded, particularly in the northern and northwestern regions. Other government programs, some supported by the Rockefeller Foundation, resulted in the development of high-yielding crop varieties, particularly wheat. Much of the basic research emphasized technology associated with irrigated production. These activities, along with ample credit policies and price support levels, spurred impressive agricultural growth rates. Facing growing financial constraints, the government has come to rely less on long-term investments and more on price incentives, input subsidies, and crop insurance programs to stimulate production of basic commodities.

The government guarantees that it will buy basic crops, including corn, beans, wheat, sorghum, soybeans, rice, safflower, and cottonseed, at support prices through CONASUPO, its regulatory agency for agricultural commodities. Announcements of support prices are made twice y^arly, including adjustments for inflation. Government purchases of covered commodities have maintained average rural prices close to support levels, but have generally failed to provide increases in real producer prices (adjusted for inflation). Mexican support prices have periodically fallen below U.S. and world prices.

The government has offered numerous and substantial input subsidies to agriculture to encourage production and to keep food prices low. Input costs (principally fertilizer, improved seed, credit, irrigation, electricity, fuel, and crop insurance) rose far less than crop prices over most of the past 30 years. As examples, fixed diesel fuel prices (in nominal terms) remained unchanged for many years and real interest rates for credit provided by public institutions have been negative until recently. Input use is still subsidized, but to a much lesser degree than a few years ago.

Regulation of retail prices of "the Mexican basket of basic commodities" is carried out by the government through CONASUPO. For many years, retail prices of basic food items were kept at low levels The financial crisis and austerity measures recently have forced Mexico to substantially reduce consumer subsidies. As a result, consumer prices of these controlled commodities rose faster in 1986 than the prices of other commodities.

In addition to price controls, the government, through CONASUPO, provides subsidies along the marketing chain for basic commodities. The government purchases a portion of domestic agricultural production and most imports of basic commodities, owns and operates processing plants, and operates a network for distribution and retail sales. The present administration hopes to focus consumption subsidies more effectively on target groups and increase the efficiency of the operations of CONASUPO.

CONASUPO was, until recently, the sole authorized importer of most grains, oilseeds, and dairy products. Import decisions are now made by a committee that includes CONASUPO and other governmental and private industry representatives. But, the government maintains control on the final import decision. For nonbasic commodities that compete with Mexican production, imports require a government-issued permit. As it prepares to join the General Agreement on Tariffs and Trade, Mexico has begun converting many of its restrictive licensing requirements to tariffs; however, this process is slowest on agricultural products. Mexico has discontinued the use of "official" price system for the purpose of calculating ad valorem duties. In most cases, these prices were substantially higher than actual invoice prices.

Many agricultural exports from Mexico require licenses and are subject to export taxes. Licensing of exports such as coffee, cotton, beef, and live cattle is often used to restrict exports until domestic needs have been met and domestic price objectives obtained. Exported tomatoes must meet quality and grade standards established by the Mexican horticultural producers union that are often more stringent than those imposed by U.S. marketing orders.

Agricultural Program Evaluation

Mexico's agricultural programs resulted in notable gains in agricultural production and productivity and achieved but did not sustain food self-sufficiency. Government subsidies for agriculture and food have been extremely costly in terms of budgetary outlays and may have contributed to the country's recent financial crisis. The commercial or large-scale sector of Mexican agriculture has been the major public policy beneficiary, leading to a wide income and technology gap between it and the traditional sector of the agricultural economy.

Public investment in irrigation and yield-enhancing technology suited to irrigated areas resulted in years of high agricultural growth rates and some of the highest yields in the world. Agricultural growth rates slowed markedly in the late 1960's and 1970's, however, as expansion of irrigated area slowed, input prices rose, and real support prices fell. The slowing agricultural sector growth, combined with high growth rates for population and income, led to a gradually growing food-import gap in the 1970's. A severe drought in 1979 pushed Mexico into its first agricultural trade deficit. Favorable weather combined with a renewed push for self-sufficiency in the early 1980's, through very significant increases in producer support prices and input subsidies, reduced imports from their 1981 peak. However, the financial crisis has since constrained the government's commitment to policies designed to limit food import dependence. Food imports remain at high levels.

The focus of public policy on the irrigated areas has been criticized as causing neglect of the major portion of the country's agricultural sector, which is rain-fed. In these areas, particularly where access to government programs is limited, yields remain low and expansion of crop area has been slow or negative in some periods. Diversification from staple crop production has occurred, but only slowly. Favorable support prices for basic commodities during some periods encouraged the production of crops such as corn and beans on irrigated land at the expense of production of higher value export crops, such as fruits and vegetables, in which Mexico has a comparative advantage. Consequently, agricultural programs may have resulted in a less efficient allocation of resources and failed to provide conditions for sustained growth of the sector as a whole.

Nonagricultural policies may have also adversely affected agricultural sector performance. High rates of protection for the manufacturing sector favored private sector investment in the nonagricultural sector over investment in the agricultural sector. Many years of an overvalued peso kept food imports cheap and acted as a disincentive to domestic production of import-substitution crops. Although the government actively pursued this "cheap food" policy, it is not clear that expensive food subsidies reached the most needy of the country's urban or rural poor. Recent exchange rate devaluations remove this source of price-disincentive for producers of some traded commodities and encourage Mexican agricultural exports. Devaluations, along with decreases in consumption subsidies, have resulted in higher food prices, one of the reasons that Mexican real wages have fallen in the last few years.

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NICARAGUA

Nydia R. Suarez

Agriculture, the mainstay of the Nicaraguan economy, accounts for about 25 percent of total output, 75 percent of merchandise exports, and about 40 percent of total employment. Export crops--mainly coffee, cotton, and sugar--represent nearly half of the agricultural output, with the remainder about equally divided between domestic crops (principally grains) and livestock.

During the early 1980's, agricultural output recovered considerably from the damage of the civil war. Self-sufficiency was achieved in many domestic crops largely in response to production incentives in the form of high support prices, subsidized credit, and substantial amounts of foreign aid. Over the last 3 years, however, agricultural output has fallen by about 5 percent a year, mainly because of declining production of export crops, a poor harvest of basic grains, and a sharp drop in cattle production.

The present economic situation is acute shortages of supply, extremely high inflation rates, and declining exports mainly because of the war. Nicaragua's economy is geared purely to survival and economic policy basically consists of "managing the crisis."

The government in 1979 significantly increased the role of the public sector in the economy. Public sector participation in the economy had been limited to essential services. Operations of the general government grew in size, banks and insurance companies were nationalized, existing public enterprises were enlarged, several foreign trade public enterprises were created, and agricultural, industrial, and commercial enterprises owned by officials of the Somoza's administration were consolidated under the umbrella of people's property area (APP).

Until 1979, the ministry of agriculture administered government policy in the agricultural sector. It was responsible for planning, programming, budgeting, and coordinating all agricultural activities through 11 decentralized agencies and 1 supporting institution. The ministry continued to operate until August 1979 when the Sandinistas created the Nicaraguan agrarian reform institute (INRA) to administer the nationalized properties in the agricultural sector.

The new regime transformed not only the structure of land tenure in Nicaragua but also the policymaking institutions that oversee the agricultural sector. The state was the largest property owner in Nicaragua in 1981, controlling over 20 percent of the cultivable land. The government exercised indirect control over production in the private sector by allocating credit from the state-owned banking system and the state-owned commodity marketing system. The government assumed a monopoly in the marketing of the principal export crops and took on a dominant role in the importing of agricultural inputs and the domestic marketing of basic foodstuffs. It acquired considerable power to regulate land tenure, including the selection of crops to be produced, with the approval of an agrarian reform law in 1981.

In 1981, a new ministry of agricultural development was expanded and renamed the ministry of agricultural development and agrarian reform. Another division, PROCAMPO, formerly the institute for national rural welfare that administered technical services to farms, was added. A third division dealt with agricultural production.

The role of market forces in determining prices has been greatly reduced since 1979. Extensive price controls were introduced. Consumer prices were set below production or import cost in an effort to protect the purchasing power of consumers, while producer or support prices were periodically adjusted upward. The difference between consumer prices and producer prices was reflected in large operating losses of the state marketing enterprises, which were financed by transfers from the central government and by bank borrowing.

To strengthen the role of the public sector within the framework of the economy, the government nationalized many of the existing financial institutions and consolidated them into a few, specialized entities.

Following exchange rate adjustments in February 1985 and 1986, the controlled prices of basic staples, other essential commodities, fuel, and public utilities were raised considerably. As result, the public utility and marketing enterprises significantly reduced their operating losses. However, in 1986, the government extended price controls to more commodities, set maximum official prices below their relative scarcity value, and increased its intervention in the distribution of key imported inputs, basic grains, and other essential goods.

The pricing policy for the main export products resulted in large subsidies, as government-guaranteed prices to producers were raised to levels well above the domestic equivalent of export prices converted at the official exchange rate.

As a result of Nicaragua's extensive government intervention in agriculture, shortages became severe, parallel market activities intensified, and prices in the informal economy reportedly rose more rapidly than in the official market.

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OTHER CARIBBEAN STATES

Richard N. Brown, Jr.

The agricultural policies of all Caribbean nations, regardless of size, are really quite similar, except for those still governed by another country such as the United States, France, or the United Kingdom. All would like to be self-sufficient in food production, but few if any can afford it.

The Bahamas

The Bahamas have only a few thousand tillable hectares on which to support about 235,000 inhabitants. Subsistence operations supply some of the local food demand, but most food is imported. New commercial production ventures are sometimes initiated with varying degrees of success. Drought, hurricanes, or some other unpredictable adversity usually obliterate the investment. The government has supported an open-door import policy for several decades, and intervenes only when foreign exchange shortages temporarily create a need to regulate imports. Tariffs and taxes have been levied on imports to raise revenues for government operations.

Bermuda

Lying about some 1,000 miles northeast of the Bahamas, Bermuda is usually included in the Caribbean category for statistical purposes. This British dependency is primarily a naval base, but it has also become an international business and tourist center. It is about 800 miles off the Atlantic coast of the United States. Bermuda, with a very small agricultural base, relies heavily on imports. The government is interested in monitoring, and if necessary, controlling imports. Government revenues are raised primarily from taxes on industry and commerce, including agricultural imports. Bermuda is still heavily subsidized by the British.

The Netherlands Antilles

The Netherlands Antilles is composed of two clusters of islands separated by nearly 500 miles of the Caribbean. Aruba and Curacao, just off the north coast of Venezuela, are well known for their petroleum and tourist facilities. St. Marten is the principal population center in the other cluster, just east of the Virgin Islands.

Aruba seceded from the group on January 1, 1986, and became another autonomous part of the the Netherlands. Its agricultural and trade policies are not expected to diverge appreciably from the others in the group.

Agriculture is a minor industry in the Netherlands Antilles and little, if any, expansion is anticipated. None of the islands in this group have much agricultural land and all depend heavily on imports. Aruba, Bonaire, and Curacao are the largest islands in the southern cluster, and St. Marten, Saba, and St. Eustatius are the principal islands in the northern cluster. St. Marten is half Dutch and half French which makes it a special attraction for international travelers.

Tourism, oil refining, and commerce provide the backbone for the economy of the Netherlands Antilles. Per capita incomes are among the highest in the Caribbean, currently exceeding $5,000 per year. Most foods and consumer goods are imported. Petroleum and chemical products are the primary exports. Some aloe vera is exported, but agricultural exports are rare.

Few government policies have been enacted which would affect agricultural production or trade. However, negative lists which temporarily ban imports of selected items have been used to conserve foreign reserves when the economy is temporarily depressed. These prohibitions usually include food items, as well as other consumer goods. The minister of trade, industry, and employment promulgated such a decree for Curacao and Bonaire as recently as July 1, 1986, following some major reductions in oil refining in 1985 and early 1986. Temporary import restrictions are normally lifted as soon as balance-of-payments positions improve.

Trade is generally encouraged by the government. But general revenue taxes are imposed on many economic activities, including imports and exports of food and other products to raise money for general government operating expenses. These taxes are not generally viewed as serious constraints to trade or production.

The Leeward and Windward Islands

The Leeward and Windward Islands are a group of old British colonies in the eastern Caribbean. The Leeward Island group includes Anquilla, St. Kitts/Nevis, Montserrat, and Antigua/Bermuda, and lies north of the windward group, which includes Dominica, Grenada, St. Lucia, St. Vincent, and the Grenadines. All except the colonies of Montserrat and Anquilla are independent states in the British Commonwealth.

The island groups organized a common currency authority in 1969 and have been attempting to develop acceptable formulas for a political and economic union. Their governments have created an organization of eastern Caribbean States (OECS) which performs some regional planning functions. The OECS could eventually become the primary governing body for the former British colonies in the eastern Caribbean.

The six principal countries in this group are relatively small island states with populations ranging from 40,000 to 120,000 inhabitants each. They primarily grow subsistence crops for local consumption, plus bananas, spices, and tropical fruits and vegetables for export. But good tracts of land suitable for efficient commercial production are limited.

Only 50 of about 300,000 hectares are tillable in this group. Most land is either too dry, steep, or wet to support commercial production of annual crops. Subsistence plots, however, are numerous and fill most local demand for fruits, vegetables, and meats.

The Leeward Island states are smaller and generally much drier than the Windwards. The Leewards also depend more on food imports. St Kitts/Nevis is the only country in the group still commercially producing sugarcane. All other Leeward and Windward Islands are importers of sugars and sweeteners.

The Windward Islands have higher mountains and more rainfall than the Leewards. The Windwards are net exporters of bananas and other fruits and vegetables, while the Leewards are not. Most agricultural surpluses continue to be exported to Barbados, Trinidad, or Europe, while most imports are from the United States or Canada.

Agriculture is loosely controlled except for export commodities which are marketed by specialized marketing boards or trading companies. Many imports and exports are subject to duties and taxes, but the monies collected are primarily used to balance government budgets, rather than to manipulate production and trade. Trade restrictions can be implemented quickly if trade imbalances become a problem.

The French West Indies

The French West Indies have very little political or economic autonomy. They were designated as overseas departments of France after World War II and all citizens have the same rights, privileges, and duties as those living in France. All French citizens, for example, can move freely between the islands in the French Caribbean and mainland France. All public infrastructures, such as roads, schools, and hospitals, are supported by the national government just as they are on the mainland. Even wage rates are to be the same as on the mainland. The living standards are comparable to those in the smaller cities and rural areas of France.

Martinique, Guadeloupe, and St. Martin are the three primary islands in the French West Indies. St. Martin's economy, shared with the Dutch, is primarily sustained by tourism, as it has very little land suitable for agriculture. Martinique and Guadeloupe, on the other hand, have considerable agricultural resources and produce sugar, bananas, fruits, and vegetables for the local and French markets. About 700,000 people live in the French West Indies.

The economy is heavily subsidized by the French government. The islands are subject to the same legal, judicial, and legislative system as mainland France, including the common agricultural policy of the European Community. The French government also controls which commercial crops are grown and to whom they are sold. For example, the government subsidizes banana production but not cane sugar production on Martinique. Some sugar is produced for local consumption, including rum, on Martinique. Both sugar and bananas are subsidized on Guadeloupe.

Guyana

Guyana, which was British Guyana prior to independence, is the largest of the three remaining Guyanas (also see Surinam and French Guyana) on the northeast coast of South America. It has the largest population (about 800,000) and the largest economy of the three. The economy is centrally planned, managed, and controlled, and in a state of decline for at least 10 years. The country is in debt and its credit is poor. It can import only when it exports some of its principal products such as sugar, bauxite, rice, shrimp, and gold. Nearly every economic activity was licensed or nationalized in the 1970's and few applications for new ventures by private citizens or foreigners are approved. The current goals of Guyana's policy are national survival, self-sufficiency, and export expansion.

Surinam

Roughly half the size of Guyana, Surinam was formerly Dutch Guyana. It lies just east of Guyana and specializes in rice, shrimp, and bauxite. It gained independence in 1975 and appeared to be a growing and dynamic developing country when a military coup interrupted the coarse of events in February 1980. Decades of progress and development are now in jeopardy and few improvements are expected from the current leadership. Its goals are similar to Guyana's.

French Guyana

The smallest of the three Guyanas, French Guyana is located just east of Surinam. It is a small French colony and has very little agriculture. Heavily subsidized by the French, it is officially listed as an overseas department of France. Its major industry is the space center which the French have built in recent years to launch space vehicles. French policies apply.

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PANAMA

Nydia R. Suarez

Panama's economy is dominated by its service sector including the government and its defense forces and banking system which generates almost 70 percent of GDP, the largest proportion for any developing country in the world. For centuries, farming was the dominant economic activity for much of the population. However, after completion of the canal in 1914, the relative importance of agriculture started to diminish. Agriculture's share of GDP has fallen to around 17 percent. Nevertheless, agriculture provides adequate food for the population, produces a surplus contributing about 70 percent of merchandise exports, and employs more than 30 percent of the total labor force.

Panama produces rice, corn, beans, livestock, fish, horticultural products, and tropical fruits for domestic consumption. The major agricultural exports are bananas, shrimp, sugar, coffee, hides, and cocoa. Panama imports mostly wheat, but has also imported corn, dairy products, and vegetable oils. Panama is the United States' major commercial customer of the Central American countries and the United States is the most important buyer for Panama's exports.

The Economy

Panama's economy relies on the service sector to maintain a high rate of growth. However, about 30 percent of the workforce is employed in the agricultural sector and over a third of industrial production is based on agricultural raw materials.

On October 11, 1984, Panama's first democratically elected government in 16 years took office, confronting a serious economic situation that required drastic changes and very unpopular fiscal measures. Although he was elected for a 5-year term, the new president was removed from office in December 1985.

The Agricultural Sector

Farming was the dominant economic activity for much of the population for many years. However, after the construction of the canal, other economic sectors grew more rapidly, diminishing the importance of agriculture. Agriculture's contribution to GDP declined from 30 percent in the 1960's to 17 percent in 1985. However, agriculture provides employment for 30 percent of the labor force. Major agricultural exports are bananas, shrimp, sugar, coffee, fish meal, fruit extracts, hides, and beef. Bananas are the most important export commodity, accounting for about 25 percent of the value of all exports. The most important commodities produced for domestic consumption are rice, corn, beans, horticultural products, and tropical fruits. Corn, the staple crop of Panama, is increasingly being replaced by root and tuber crops and rice.

Policy Goals

Panama's economic policies differ markedly among sectors. While the service sector developed with a minimum of government regulation and control, the government has intervened in the agricultural sector, especially after a 1968 military coup d'etat.

In 1970, the government introduced major agricultural policy legislation emphasizing import substitution, direct state production, land reform, and extensive social and economic reforms in the rural areas. There was increased government intervention manifested through the establishment of government-owned enterprises, such as sugar mills, large-scale marketing activities, and the creation and support of agrarian reform and communal farms. Pricing policies were used extensively during the Torrijos era to regulate resource use and income distribution within the rural and urban sectors.

Reacting to a serious need to renew economic growth, the new administration in 1984 undertook a major change in agricultural policy. These policies were fashioned from the World Bank growth strategy emphasizing growth of agriculture and industry, exports, labor-intensive private investment, and well-planned public sector fiscal policy.

Agricultural Programs

The ministry of agricultural development is responsible for different functions including regulation and control, policy development and coordination, research, and extension. It is responsible for five program areas that include agricultural extension, plant/animal regulation and sanitation, agrarian reform, natural resources, and aquaculture. In addition, the ministry has eight regional management units and has indirect responsibility for six service institutions and seven public sector production enterprises.

Price controls are maintained on all domestically consumed agricultural products except potatoes and fresh vegetables. Marketing margins are fixed by the state at all stages on the marketing chain. The principal state agencies involved are the product commissions established by the ministry, the agricultural marketing institute, and the price regulation office. Prices are negotiated annually with representatives of the large producer "asentamientos" and the state corporations, and are based on production cost data estimated by the ministry of agricultural development.

The agricultural marketing institute was created in 1975 to establish annual farm support prices for rice, corn, sorghum, beans, onions, and coffee. It buys surplus production of these commodities and stores it for later sale. In addition, the institute has a support price on salt, beef, and grade A milk. The institute is the sole importer of corn, sorghum, beans, onions, potatoes, and edible oils and directly handles their distribution or allocates the supplies to private traders. In conjunction with the price regulation office, the institute controls import quotas for a large number of products, especially basic foodstuffs. As the sole importer of food products, the institute operates a food import monopoly. It buys food products at low world market prices and resells internally at high domestic prices. Corn and sorghum are the dominant food import components.

The price regulation office is a subdivision of the ministry of commerce and industry that monitors and controls the price of processed food commodities at the retail level. The office monitors the supply and demand of fruits and vegetables and controls the consumer ceiling price of rice, beans, lentils, plantain, onions, yams, beef, chicken, milk, eggs, and fresh fish.

The product commissions are appointed by the ministry of agricultural development and depend on ministry authority to assure cabinet decree. The commissions set the producer prices of approximately 32 agricultural products using cost of production information developed by the ministry.

Developments of the mid-1980's are furthering the policy of decontrol of prices. Fixed farmer support prices and consumer ceiling prices on potatoes were lifted in 1983. The agricultural incentive law of March 1986 set the stage for freeing the domestic market from price controls and reducing protective barriers from foreign competition. The law represents a major shift in policy direction. In addition, the government divested itself of two sugarmills, a citrus operation, and the national agricultural machinery enterprise.

Agricultural Program Evaluation

The consequences of the economic and agricultural policies of the 1970's have been mixed for the rural sector. The effect of infrastructure development has been positive. Import substitution expanded production averages of several basic food crops, but stifled market competition and provided no incentives to increase productivity. The enterprises established to carry out direct state production were inefficient because they emphasized social reforms rather than production efficiency and transferred resources from consumers to producers at high public cost. Land reform settlements or the "asentamientos" that were intended to slow migration provided employment for only a small fraction of the labor available because many of these farms were located on low-quality land.

The policies of the 1970's did not improve the income distribution between the rural and urban sectors. They created a public sector that could not be sustained. Costs of food to consumers climbed. The intense government intervention era eventually led to economic stagnation. Large economic losses occurred and private sector capital investment in agricultural production and marketing was minimal. Heavy rural to urban migration resulted in very high urban unemployment. The labor code enacted in 1972 was viewed by Panamanian and foreign investors as a major disincentive for investment and employment because of increased labor costs.

The new administration in 1984 tried to set the tone for a changeover to a World Bank policy for free trade, but political forces in Panama resisted these changes. In December 1985, the president was removed by the national guard and replaced by the vice-president.

The agricultural marketing institute has created a monopoly for itself. Although the institute has gained significantly from its importing activities, the gain has not covered the losses from the farm price support and purchase program. This program has sustained losses every year since 1975. The institute has a strong vested self-interest in maintaining import controls because it gains significantly from its import monopoly. Neither producer nor consumer interests are represented in its operation. The product commissions, also involved in setting the producer prices, also provide a political mechanism that supports the self-interest of a limited number of producer and marketing groups.

Since June 1987, Panama has been shaken by violence and strikes that have almost paralyzed the country. Everything is in a halt including the relationship between the United States and Panama.

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PARAGUAY

Ricardo Krajewski

Paraguay's population of about 4.3 million grows at 3.2 percent a year. The country is about 44 percent urban. Agriculture makes up a fourth of the GDP, employees about half of the workforce and accounts for 90 percent of the country's exports. Government intervention in the economy is minimal.

Economy

The president has been in office since 1954. Most the economic progress of the last two decades has been related to the development of the hydroelectric system. Per capita GDP is about $1,830, slightly below the regional average. Natural resources include hydroelectric power, iron, manganese, and forests. Major industries are meatpacking, oilseed crushing, milling, brewing, textiles, light consumer goods, cement, and construction. Interest payments on debt account for about 10 percent of the value of exports.

About 4 percent of Paraguay's area is arable. Major crops are soybeans, cotton, wheat, manioc, tobacco, corn, rice, and sugarcane. The country is self-sufficient in most foods. The agricultural sector has been growing at slightly over 4 percent per year for the past three decades. Transportation is the major problem preventing more rapid development.

Agricultural exports account for 90 percent of the country's total exports. Paraguay's principal exports are cotton, soybeans, meat products, tobacco, timber, and essential oils. Main export markets are Brazil, the Netherlands, Argentina, Switzerland, the United States, and the German Federal Republic.

Main imports are fuels and lubricants, machinery and motors, motor vehicles, beverages and tobacco, and foodstuffs. Agricultural imports make up only 7 percent of the total imports. Main sources of imports are Brazil, Argentina, the United States, Algeria, Japan, the German Federal Republic, and the United Kingdom.

PERU

H. Christine Bolling

Peru, a lower middle-income country, depends on petroleum and metal exports as the mainstays of its economy. It primarily produces rice, corn, potatoes, and sugarcane. Agriculture provides 12 percent of the GDP. Wheat is imported. Peru has put a high priority on low consumer prices for selected basic foods. The consequences of Peru's food and agricultural policy of tight government controls are continued shortages of foodstuffs and a stagnant agriculture.

The Economy

Peru, one of the poorer countries in South America, earns income from a few primary export commodities--like petroleum and metals--business cycles of which are highly related to the volatility of the international commodity market. In 1980, Peru returned to constitutional rule following 12 years of military dictatorship. While democratic institutions in Peru are fragile, a democratic election was held in 1985. The ruling party is interested in increasing social programs. Peru's socioeconomic structure is based largely on the geographic division between the coast with its productive irrigation-based agriculture, the sierra with its poverty-stricken Indian population, and the jungle with its remote expanses of undeveloped land. This division has made unity difficult.

The Agricultural Sector

Agriculture provides 12 percent of the GDP but nearly half of the GDP is generated in the food and agriculture, food processing, textiles, and clothing industries. Agriculture also provides 40 percent of Peru's employment. Wheat is Peru's main import, but corn, rice, dairy products, vegetable oil, meat, and sometimes sugar are also imported. Nearly a fourth of the food, in terms of calories, is provided by imported grains and oilseed products. Peru exports coffee, sugar, and fishery products. Fishmeal exports are an important foreign exchange earner.

Policy Goals

Many of Peru's economic policy decisions are covered in its history of widespread poverty. During the past few years, the government has had to solve the additional short-term problems of the current economic crisis.

The current land tenure dates to 1964, when the government enacted a major land reform bill to disburse the historic consolidation of economic power. Because of extensive expropriation and the formation of cooperatives, private medium and large farms now control less than 10 percent of the agricultural land. Current economic policy is rooted in the policies of the military government which gained power in 1968. That government embarked on a program aimed at maintaining rapid growth of the modern export sectors to provide a surplus for public investments and transfers to the poorer segments of the population. The government took over basic industries and control of marketing major exports and imports, including agricultural commodities.

The government has played a dominant role in agricultural marketing, using the following policy instruments: (1) use of parastatal organizations as exclusive exporters and importers of basic agricultural commodities, (2) control of marketing margins of some essential goods, (3) antispeculation laws inhibiting the private sector in investing in marketing infrastructure, (4) regulation of the transportation margin, and (5) export taxes.

Because of widespread poverty and chronic food shortages, consumer interests have been given a high priority. The current government has maintained low prices for some basic foodstuffs like "popular" bread (a French bread), noodles, and milk, although the number of products on the price control list has been larger. The previous administration attempted to dismantle many of the price controls, but the current government appears to be moving toward a new round of subsidization of basic foodstuffs.

The government also controls farm-level prices and the marketing margins. The list of commodities covered has changed over the years, depending on the economic philosophy of the regime in power. In 1985, producer prices were set for fresh milk, nonfat dried milk, butteroil, rough rice, wheat used in flour milling, hard yellow corn, sorghum, cottonseed, and cottonseed cake.

In addition to the government's price policy, until 1978 Peru also had its "pan levar" laws requiring producers to allocate 40 percent of their land to crops, ostensibly to increase domestic food supplies. Peru has had to deal with balancing off the socioeconomic differences between the richer coastal region, the poorer sierra region, and the remote jungle region. Until 1981, the government also enforced "veda" or meatless days as a means of changing food consumption from red meats to poultry and fish and of curbing foreign exchange expenditures for imported meats.

Agricultural Programs

The government policy is carried out by the ministry of agriculture and the parastatal organizations Empresa de Commercialization de Insumos (ENCI) and Empresa de Commercialization del Arroz (ECASA).

To stimulate production, the government set some farm prices well above the world price, insulating the domestic market from the world market. Corn and rice are the principal grains produced. Peru has a single national price for corn. Rice is marketed through ECASA. In 1982, farm-level prices were set by ECASA well above the prices charged to consumers. The difference between the consumer price and import cost or producer price was paid by the national treasury. Milling and transportation costs were also subsidized by the government.

Most Peruvian wheat is produced and used in the sierra, with little surplus reaching the commercial markets on the coast. Government programs apply more to imported wheat than to the domestic wheat. The imported wheat is sold to millers at a price well below the import price, with ENCI making up the difference. Millers, in turn, pass these lower prices on to breadbaking and pasta operations.

Peru has subsidized water, fertilizer, and credit in order to increase agricultural production in certain regions and crops. In 1969, the government abolished all private water rights, took ownership of the country's water resources, and invested in large irrigation projects to develop the irrigated agriculture of the coast. Water charges were also set at low rates, implicitly subsidizing the region's agriculture. The government also has had exclusive control of imports and distribution of fertilizer through ENCI. For many years, the government subsidized fertilizer prices, with nearly all of the fertilizer used on rice and industrial crops. More recently, fertilizer was taxed but the tax was nearly phased out in 1986.

Institutional credit is provided exclusively through the government-owned agricultural bank, particularly since commercial banks have withdrawn from agricultural lending because interest rates for agricultural loans are less than interest rates to other sectors. Nearly two-thirds of total agricultural loans go to the coast for short-term production loans for industrial crops and rice. In 1986, the government set a preferential interest rate for farmers in the sierra. But, only a few farmers will benefit.

Because of foreign debt problems, Peru has attempted to curb growth in food imports and increase foreign exchange earnings through exports. Importing of basic grains and oilseed products is conducted by ECASA and ENCI, which until 1983 and after 1985 had a virtual monopoly on basic food imports. Import licenses and quotas are operative for basic commodities. Imports of basic foodstuffs require authorization through the ministry of agriculture under its global import program. Import quotas for wheat, corn/sorghum, and rice are set every calendar year. The list was more extensive in earlier years.

Peru has two exchange rates: the official market rate pegged to the U.S. dollar and the financed exchange market (free market) in which the rate fluctuates freely in response to supply and demand and where the central bank may intervene by buying foreign exchange. Export and import licenses are issued by the directorate of foreign trade in the ministry of industry, commerce, tourism and integration. But the licenses are not required for imports from other Andean Pact countries. Import of virtually all nonbulk foods was prohibited in 1986 to conserve foreign exchange,

With specified exemptions, imported goods are subject to a uniform value-added tax based on the c.i.f. value of imports in addition to the import duty. In 1986, the surtax on items in short supply like poultry meat, potatoes, and hatching eggs was eliminated and import duties for raw materials for poultry production were reduced. Other taxes may include an additional import tax for the promotion of nontraditional exports and a maritime freight tax. Wheat is exempt from import levies, but corn and sorghum have import duties of 15 percent. Wheat, nonfat dried milk, butteroil, whole dry milk, and rice are all exempt from the surtax. Peru also has some tariff differentials between Association Latin American de Integration (ALADI) members and nonmembers, particularly benefiting soybean meal and soybean meal imports from Paraguay and Bolivia.

Nontraditional product exports are granted transferable tax credit certification, known as CERTEX, which may be used by the exporters in payment of their tax obligations.

The government has had surcharges on export commodities like cotton and coffee at various times. Proceeds from all exports must be surrendered to the central reserve bank, which issues 10-day exchange certificates for 95 percent of the value of receipt from traditional exports and 80 percent for nontraditional exports at the official exchange rate. This differential also serves as a tax on exporters.

Agricultural Program Evaluation

The direct intervention by the government in the form of price controls and subsidies created resource misallocation and price distortions that impeded the growth of the agricultural sector. The interference in marketing and distribution increased costs and disrupted the normal flow of commodities, creating localized shortages, meatless days, and black markets.

Cost of the programs far exceeded the benefits, mostly because the public sector had become vastly inefficient. In terms of economics, the parastatal organizations were neither cost minimizers nor profit maximizers. The cost of the direct food subsidies to the public had become staggering. At the beginning of the 1970's, they were already $75 million. By 1980, they were $330 million. Even so, the food subsidies did not serve the poor well. The rural poor produced most of their own food. Since the subsidies were targeted toward commodities instead of income groups, only 50 percent of the subsidies benefited low-income groups. The rest benefited middle and higher income groups. The Peruvian government also got caught in the bind of financing consumer programs at low prices while financing producer programs at higher prices.

The "pan levar" laws had their own influence: the efficiency and value of agricultural production did not increase, mostly because farmers planted the required crops but did not continue to cultivate the crops to harvest. Net foreign exchange declined since the loss of export earnings from smaller cotton crops was not compensated for by a decline in food imports. The "veda" days discriminated against the poor, who were less likely to have storage and refrigeration facilities. Others would purchase and store large quantities of meat anyway, negating the intended influence of the "veda."

Because Peru has a pegged exchange rate, the exchange rate does not always reflect the purchasing power of parity between the U.S. dollar and the Peruvian currency. For many years, the Peruvian currency was considered overvalued. Imported goods, including wheat, were consequently priced more favorably than domestically produced goods, and worked as a deterrent to increased production of those crops. Production of export commodities like cotton has also been discouraged by the overvalued currency. The differentials in the exchange rate associated with the export certificates have also served as a tax on exporters, also deterring exports.

Agricultural policies have not generally met their stated goals, particularly since per capita agricultural production has slipped during the 1980's. Moreover, many of the programs that were designed to correct equity problems of the poor have exacerbated those problems, or, at best, left the situation unchanged. The dilemma of the tradeoff between development of commercial agriculture of the coast and the more indigenous agriculture of the mountains and jungle continues.

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TRINIDAD AND TOBAGO

Richard N. Brown, Jr.

Trinidad and Tobago has one of the strongest economies in the Caribbean. During the 1970's, it took advantage of the sudden surge in world petroleum prices and used the windfall profits from its domestic gas and oil sales to modernize and develop both the public and private parts of the industrial sector. During this period, agriculture was essentially ignored because low-cost foreign food supplies were readily available and good-paying jobs were plentiful in nonagricultural sectors.

The government has more recently shown some renewed interest in agriculture, because industrial jobs are not as plentiful and food imports have become a significant drain on foreign reserves. Tropical agriculture has considerable potential on the island of Trinidad.

Prior to 1970, cane sugar production dominated the agricultural sector and other segments of sector were essentially ignored by the government, except when production or marketing problems arose. Production subsidies, import regulations, or price controls were primarily implemented to minimize political opposition to the party in power, rather than to support some specific production or trade goals. The government has recently become more interested in rationalizing sugar and other agricultural policies, with more interest in import substitution.

The government has considerable policysetting authority. It can change importing and exporting rules and regulations at anytime. Any policy changes implemented in the next few years are not likely to have much effect on U.S. agricultural trade in the region.

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URUGUAY

Ricardo Krajewski

Uruguay's population of about 3 million people grows at less than 0.5 percent per year. The country is 85 percent urban. Agriculture makes up about 11 percent of GDP, employs 11 percent of the workforce, and accounts for about 56 percent of the country's exports. The government controls wheat imports and exports and has import taxes on some oilseeds and oilseed products.

Natural resources include soil, hydroelectric power, and minor minerals. Major industries are meat processing, wool and hides, rice, textiles, footwear, leather apparel, tires, cement, fishing, and petroleum refining. The government has been generally trying to maintain an open economy, intensifying efforts to control fiscal deficits and inflation. It has also been trying to keep a liberal import regime and an unrestricted foreign exchange market.

About 8 percent of Uruguay's land is arable, 78 percent meadows and pastures, 4 percent forest and woodland, and 10 percent in other. Large areas are devoted to extensive livestock grazing. Main crops are wheat, rice, corn, and sorghum. Uruguay is self-sufficient in most basic foodstuffs. The agricultural sector has grown little over the past three decades, averaging about 0.5 percent per year.

Agricultural exports account for over half the total exports of the country. Major exports are meat, textiles, wool, hides, leather products, fish, rice, and furs. Uruguay's main export markets are Brazil and United States. Agricultural imports make up about 7 percent of the total. Most of the imports come from other Latin American countries, the EC, and the United States.

The government supports wheat prices and controls the importing and exporting of wheat. Sunflower and soybeans are protected by a 20-percent import tax, which, with miscellaneous expenses, raises it to approximately 25 percent of the c.i.f. There are also import duties on protein meal, currently 10 percent of the c.i.f.

VENEZUELA

H. Christine Bolling

Venezuela's agricultural sector has been overshadowed by other sectors of the economy. The country has become one of the more industrialized countries in Latin America. Agriculture generates 7 percent of GDP. Corn, coffee, sugar, and rice are the leading crops. Venezuela is a net importer of agricultural products, mostly wheat, feed grains, oilseeds, and oilseed products. During the oil boom, agricultural imports reached a record $2 billion in 1981 and provided more than half of the domestic food supply.

Venezuela's major agricultural policy goal is to provide an adequate food supply. The government effort to control the economy through import and input subsidies and high farm price supports has been costly. Resources have been misallocated as Venezuela sought to create a temperate zone agriculture in a tropical zone climate.

The Economy

Venezuela is an upper middle-income country, deriving much of its income from petroleum. Venezuela's oil exports have at times represented 95 percent of its total export earnings. The country has accumulated a large foreign debt in the 1980's and has had to devalue its currency vis-a-vis the U.S. dollar. Venezuela has had a relatively stable federal republic government, with changes in power from the democratic action party to the social Christian (COPEI) party in 1984.

Thr Agricultural Sector

Agriculture contributes 7 percent of the GDP and provides employment for 16 percent of the economically active population. Corn, coffee, and sugarcane are the primary crops, but sorghum and rice production have increased the most in recent years. Livestock and poultry provide nearly half the agricultural GDP. Venezuela has the second largest poultry industry in Latin America and has built this industry using imported feed grains and protein meals. More domestically produced feeds have been used in recent years. Venezuela is primarily an agricultural importer, importing nearly half its food supply. Wheat, feed grains, oilseeds, and oilseed products are the leading import items.

Policy Goals

Venezuela spent the oil boom years expanding its industrial base and increasing trade. Recent policy decisions relate to Venezuela's efforts to cope with its financial difficulties. Fiscal austerity, devaluation, import and foreign exchange controls, and more careful management of the public sector have been overall economic policy goals. During the years of high petroleum prices, increased incomes and an influx of immigrants increased consumer demand. Agriculture could not supply the food demanded by this affluent market. In response, Venezuela increased agricultural imports. When the economic slump hit in the 1980's, Venezuela adopted a more conservative import policy and showed interest in agriculture, aiming toward self-sufficiency in crops suitable to its climate. Thus, Venezuela's goal remains one of insuring an adequate food supply at government-controlled prices at the farm and retail levels.

Agricultural Programs

The government intervenes in the farm sector by supporting farm prices well above the world level. Corn, sorghum, rice, beans, copra, peanuts, sesame, sorghum, sunflower seed, bananas, plantains, garlic, potatoes, broilers, eggs, beef carcasses, pork, milk, cocoa, coffee, and cotton have farm-level price supports. The dairy industry is highly subsidized.

Irrigation, research, and education receive government funding. The government has also subsidized inputs to achieve growth in agriculture, but the disbursement of these inputs has been heavily controlled. Fertilizer is subsidized at about 50 percent of the price.

The feed manufacturing industry has received concessions. For some years, Venezuela had a "reference" price system under which feed manufacturers paid feed grain prices that were lower than the domestic farm price, but higher than the import price. But in the early 1980's, the import price increased relative to the reference price, so feed manufacturers received direct subsidies for feed. Since 1985, production of mixed feed for hogs and dairy cattle has increased significantly.

The government subsidizes agricultural credit as an incentive for expanding production of targeted products including milk, corn, sorghum, sugar, and oilseeds. These programs are run through government established official financial institutions, the Fondo de Credito Agricola y Pecuario (ICAP) and the Banco de Desarrollo Agropecuario (BANDAGRO). Legislation requires that 20 percent of private banks' portfolios be invested in the agricultural sector. The government rigidly controls retail prices of basic foods: bread, rice, pasta, vegetable oils, and milk. Manufacturers of pasta and whole dry milk receive direct subsidies to enable them to maintain low retail prices. Many consumer subsidies were phased out in the early 1980's as the programs became too costly.

Venezuela historically has had an import quota system for basic commodities: wheat, feed grains, dried milk, sugar, oilseeds, and protein meals. Imports of these commodities were allowed only after domestic production had been used. For many years, the feed manufacturers' association (AFACA) requested import allotments from the Corpracine de Mercadeo Agricola (CMA) based on their expected requirements. But after 1981, the manufacturers were allowed to purchase their own feed grains in the world market, albeit within the confines of the quota and licensing system.

Because of Venezuela's current foreign exchange/foreign debt crisis, the government has reduced imports. Imports of luxury and processed foods are now prohibited, as are apples, pears, pork, and poultry. RECADI (the differential exchange system office) approves imports and foreign exchange allotments. Basic commodities are imported at an exchange rate which is well below the commercial exchange rate. This subsidized exchange rate is a holdover from the oil boom, when the primary concern was to maintain adequate food supplies.

Venezuela has bilateral agreements with other Association Latin Americana de Integration (ALADI) members pertaining to lowered tariffs for specific agricultural imports. Brazil (soybean oil and sunflowerseed oil), Paraguay (cheeses, beans and peas, wheat, and vegetable oils), Chile (beans and peas) and Argentina (beans, apple, pear and peach products, and whole malting barley) are the principal countries and products affected.

Agricultural Program Evaluation

Venezuela has maintained food supplies without incurring much inflation, but has done so at considerable cost to the government. Government costs for these programs peaked in the early 1980's. Total agricultural imports were about $1 billion in 1985, but the subsidized exchange rate meant that imports were valued at approximately 4.3 billion bolivares (at the preferential exchange rate) instead of 15 billion bolivares (at the commercial exchange rate). The cost to the government of the exchange rate subsidy far outweighed the cost of domestic agricultural subsidies.

Encouraging production of temperate climate crops through high farm support prices has led to a misallocation of resources and a patchwork of programs like the feed manufacturing subsidies. Dairying in Venezuela is possible only because of the large subsidies. High farm prices have contributed to reaching self-sufficiency in rice and poultry production, but have required additional expenditures on export subsidies to dispose of surpluses.

There is a tradeoff in Venezuela between importing basic grains at a subsidized exchange rate or producing them with subsidized inputs and at high supported prices. The government has gone from importing these basic commodities to aiming for self-sufficiency in recent years. Inputs such as mixed feed have also been subsidized at times.

REGIONAL SUMMARY OF MIDDLE EAST

Michael E. Kurtzig

The Middle East does not have the agronomic capacity nor environment to efficiently produce enough food to meet demand generated by population and income growth. The region is composed of the oil exporting nations and nations dependent on income other than agricultural to generate economic growth. In both cases, governments seek to provide the best quality food at the lowest possible price, subject to food security and political considerations. In the case of the oil rich nations, consumer subsidies have played a critical role in rapidly advancing diets and improving standards of living. In the case of the nonoil nations, government efforts aim at improving agricultural output, expanding export crop output, controlling food imports, and minimizing expenditures on subsidies.

In many countries, agriculture is of a subsistence type, contributing a very small portion to the GNP. Kuwait, Qatar, Oman, Bahrain, and the United Arab Emirates are in this category. In other countries, agriculture is comparatively small, but plays an important role in the country's overall economy: Saudi Arabia and Iraq, for example. For the third set, agriculture is an important sector of the economy, plays a major role in the countries' trade, and employs a large sector of the labor force. Turkey, Jordan, and Syria are examples. In virtually all countries, however, domestic output does not meet growing needs. During the last 15 years, food imports have become critical to the food security of these countries. In some countries, imports comprise up to 75 percent of the food consumed.

Agricultural development and policies, from price supports to subsidies, to bilateral and multilateral trade agreements, have become increasingly important. Maintaining reasonable food prices, improving the average diet, and increasing agricultural output are major goals. To achieve this, governments intervene in the agricultural sector through several policy instruments, including setting price policy, subsidies, and acreage limitations and allotments; selecting investment strategies; improving marketing and distribution facilities and refrigeration; and providing technical assistance and low-interest rate credit. Governments also encourage improved cultivation through various cultivation methods, including crops grown under glass and plastic houses, trickle irrigation, growth hormones, refined animal feeds, upgraded genetic quality of animals, and diversified export products.

In countries unable to achieve food self-sufficiency, producer subsidies are used more to redistribute income than to promote self-sufficiency. In others, subsidies to both consumers and producers and for inputs and price supports have become critical policy and production determinants. Subsidies are used as a policy instruments to achieve government goals; for example, the very high wheat subsidy paid to Saudi farmers.

Consumers benefit from price subsidies on several staple foods. Bread and other wheat products are the most important of these. In some countries, subsidies on several items have been reduced or completely removed since 1980 as a government attempt to control output and reduce budget deficits.

Export policies generally aim at promoting value-added exports while discouraging those of raw commodities. The main tools employed are tax rebates used to support exports of value-added products and export taxes or deposits applied on raw commodity exports such as pulses, tobacco, cotton, filberts, and dried fruit. In addition to direct incentives to trade, Turkey has devalued its currency sharply in recent years at rates far exceeding domestic inflation rates. This "real" currency devaluation has improved the export price competitiveness of all products.

As the cost of government intervention has become more apparent, recent government policies increasingly emphasize the role for the private sector. In some countries, divestiture policies and programs have been promulgated to reduce the extraordinary budget burden that public or state enterprises place on the national treasury.

Wheat and barley are the mainstays of most of the countries' agriculture. Significant quantities of fresh vegetables, citrus, other fruits, and their processed products are important exports. Livestock and products are important in the region's diet. Policies aimed at expanding livestock output have generated an increase in cattle and feed grain imports. There has also been a significant rise in poultry and products output.

Despite growing populations, countries are attempting to increase capital intensive agriculture, hoping to employ residual labor in industry and services. However, demand for imported food to supplement local supplies will likely continue because of continued improved incomes, growing populations, and changing diets.

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BAHRAIN

John B. Parker

Bahrain uses only 4 percent of its 214 square miles for agriculture, which provided employment for 3 percent of the 166,000 employed in 1985. Agriculture accounts for less than 3 percent of the GNP, which annually averages about $6 billion. Cultivation completely depends on irrigation. The 852 farms average 3.4 hectares. Fishing was traditionally a companion occupation for Bahrain's small-scale farmers. Bahrain's cultivated area is about 22,000 acres, with date palms covering 12,000 acres. Tomatoes and cucumbers accounted for most of the 45,000 tons of vegetables produced in 1986.

Bahrain imports 92 percent of its food, valued at $220 million in 1986. The United States provided only 2 percent. The EC, South Asia, Australia, New Zealand, Turkey, and Brazil were more important suppliers.

Development of horticultural farming is related more to hobbies and landscaping than to the need to produce food. Dates, tomatoes, squash, and cucumbers are the major crops. Increasing food production is not a major policy goal. Maintaining ample supplies of food at reasonable prices through imports is encouraged by subsidies. Urban enterprises dominate the economy, especially trade, banking, and services. The petroleum industry accounts for about half of Bahrain's GNP. Profits from services and commerce provide the remainder. Declining petroleum revenues caused cancellation of projects, idling foreign workers. Expansion of aluminum exports helped offset declining petroleum. Bahrain's exports remained near $3 billion in 1986 with imports at $2.4 billion.

Bahrain is an important banking center with deposits estimated at over $50 billion. As a regional banker, regional economic problems influence Bahrain. Collapse of the transit trade with Iran and Iraq has reduced inflow of deposits and loan demand from traders in the region.

Bahrain policy is to provide quality food at reasonable prices. Subsidies for essential commodities keep prices for rice, bread, and pulses low. Also, private grocers set commodity prices within certain guidelines. Competition and government inflation-control guidelines prevent prices for becoming excessive.

Bahrain has no ambitious plans for agricultural development. The surplus of wheat and eggs in Saudi Arabia provides enough for Bahrain consumers. The unit cost of production for small enterprises in Bahrain is too high for efficient production of most items. Imports are much cheaper. Bahrain emphasizes expansion of agribusiness ventures such as bottling plants, bakeries, and candy manufacture. Ingredients are imported for the local preparation of soft drinks, fruit juices, ice cream, and cookies.

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CYPRUS

Fawzi A. Taha

Cyprus constitutes the southern part of the Cyprian island which remained under the control of the internationally recognized government following *de facto* partition of 1974. The northern part of the island, with 37 percent of the island's total area and a fifth of the population, was proclaimed the independent Turkish Republic of Northern Cyprus in 1983. It has been recognized only by Turkey. Cyprus, with a population of 540,000 and a per capita income of $4,500, is governed by a president with a cabinet and an elected national assembly.

Services are the vital sector of the economy, contributing 60 percent of GDP, followed by the industrial sector at 31 percent. Agriculture, with 9 percent of GDP, employs 20 percent of the labor force. Cyprus' major crops are cereals, potatoes, grapes, tobacco, vegetables, and citrus. Potatoes and citrus are major foreign exchange earners.

The country's policies are aimed at improving the overall economic situation and creating employment to absorb the Greek Cypriot refugees displaced after the Turkish invasion of 1974. Agricultural policies include expansion of agricultural area to increase output and exports of fruits and vegetables to European markets. The government subsidizes the production of cereals, grapes, feedstuffs for livestock, water for irrigation, and an insurance plan for cereals and grape growers.

Agricultural policies have been successful in achieving self-sufficiency in pork, poultry, fruits, and vegetables. The country will, however, continue to depend on imports for its cereals.

Before 1974, agriculture was the most important economic sector, accounting for 34 percent of GDP and employing 40 percent of the labor force. Since then, its importance has declined. Crop production constitutes about 75 percent of agricultural output, livestock accounts for 15-20 percent, and the rest is from fishing and forestry.

In 1985, the value of exports was $477 million, a third of which was agricultural produce, and imports were $1.1 billion. Major trading partners are the EC, the Arab countries, USSR, and the United States. Agricultural imports were $217 million, with the EC shipping $123 million and the United States $21 million. U.S. exports to Cyprus consist of wheat, barley, corn, and soybean meal.

Following the 1974 Turkish invasion, the major goals were to improve the economic situation and create employment for 200,000 refugees from the northern part of the island. Government policies aim at increasing production of vegetables, flowers, potted plants, and spring potatoes, and to boost exports to Europe during the winter when prices are high.

The fourth development plan (1982-86), with a total investment of $4 billion, targeted annual growth at 4 percent, compared with 5.6 percent in the previous plan. The plan's targets were to improve income distribution, achieve full employment, stabilize domestic prices, increase trade to Middle Eastern countries, modernize the industrial sector, and improve agricultural production.

The government intervenes in the agricultural sector by establishing product-price ceilings; providing subsidies to producers of cereals, grapes, and livestock; and providing subsidies to irrigation projects.

During 1982-86, 60 percent of the agricultural development budget was allocated to the development of water resources. Three irrigation projects are under construction with the help of the World Bank which will increase the irrigated area by 40 percent by 1988. The International Fund for Agricultural Development provides programs to improve livestock and dairy production. The government strives to improve agricultural productivity through land consolidation by encouraging the aggregation of dispersed holdings via plot exchange. Farmers also have a subsidized insurance program for cereals and grapes whereby the government pays 30 percent of the premium.

Over the last 5-6 years, the economy expanded at an average 5 percent a year, operating at near full employment with a low inflation rate and manageable debt and debt service. In 1986, total agricultural production of the country improved by 40 percent, compared with the 1976-78 level.

The relative decline in the importance of agriculture reflects the rapid growth of the service and industrial sectors. Agriculture has been beset by the loss of fertile land in the partition, shortage of water resources, adverse weather conditions, marketing problems, and insufficient research and extension services. Government subsidies in agriculture have a substantial cost in terms of efficiency and the budget. Agricultural subsidies amounted to about 8-10 percent of government expenditures in 1983-85.

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IRAN

John B. Parker

Iran is a major agricultural producer and consumer in the Middle East. Wheat is by far its major crop. Other crops with annual output of over 1 million tons include barley, rice, potatoes, grapes, and apples. A policy of food self-sufficiency has been targeted. But, after dramatic gains in the 1970's, the agricultural sector suffered in the early 1980's. Import bans on luxury foods in 1979 and simultaneous disasters for most of the commercial livestock sector led to serious food shortages in the early 1980's. This culminated with a drought which triggered record food imports in 1984. Efforts to bolster production through [illegible] prices and improved technology brought favorable results in the last [illegible] years. In 1986, Iran imported about 20 percent of its food supply.

The war with Iraq has taken a major toll of Iran's productive capacity and manpower. Iran's GDP annually averaged about $94 billion during 1983-85, when agriculture accounted for about 12 percent of the total, compared with 20 percent for petroleum and 17 percent for manufacturing. The farming sector provided about 40 percent of the employment. Petroleum income declined from 25 percent of the GNP in 1979-81 to about 20 percent of the total during 1983-85. Manufacturing was twice as important during 1976-73 as it was during 1983-85. But, it has revived recently.

The Economy

Iran's economy and foreign exchange inflow depend heavily on oil exports. Shortages of funds limit industrial investments needed to provide scarce items and provide employment for the labor force annually growing 3 percent. Petroleum revenues declined from a peak of $24 billion in 1981 to only $6 billion in 1986. As traditional petroleum importers shifted to other suppliers, Iran found it necessary to increasingly use countertrade to revive exports of crude oil, often in exchange for food. Iran also sought to increase exports of petrochemicals, fertilizer, and agricultural commodities.

Most private industrial investments have been taken over by public companies or cooperatives since 1979. Disruptions had created massive unemployment, although many factories have recently reopened, creating more jobs. Iran's agricultural imports increased from an average $1.7 billion during 1976-78 to $2.6 billion during 1980-82 and peaked at about $3.5 billion in 1984.

Agricultural commodities accounted for 4 percent of total exports, averaging $320 million during 1984-86. Pistachios and dates were the major items. Agricultural products accounted for nearly 25 percent of total imports during 1984-86, which averaged $13 billion. The leading imports are wheat, corn, barley, rice, sugar, dairy products, meat, pulses, and tea.

Agricultural Sector

Iran's agriculture is dominated by grains, with emphasis on producing more horticultural items and livestock products. Cereals accounted for about half of the value for all agricultural items imported in 1986, estimated at $2.6 billion. Wheat is by far the leading crop, accounting for over 70 percent of the estimated 10 million tons of grain produced. Other leading crops are barley, rice, apples, potatoes, grapes, tomatoes, dates, and melons. Compared with the 1976-78 average, per capita food production was 25 percent less in 1984 (a drought seriously reduced wheat and barley yields) and down 13 percent in 1986. Livestock is a very important sector, but it suffered severely as private firms went bankrupt soon after the Shah's departure.

Policy Goals

One of Iran's policy goals is to reduce dependence on imported food. This priority is driven by a fear of a food embargo by world exporters, the shortage of foreign exchange, the need to use excess fertilizer capacity, the opportunity to reduce transport and distribution costs for imported food, and efforts to increase employment in rural areas. Iran also seeks to diversify exports, with more agricultural goods and less petroleum. Oil now accounts for 95 percent of total exports.

Agricultural Programs

Iran's agriculture heavily depends on imported inputs. Efforts are underway to reduce the imported share. Imported feed plays a vital role in the livestock sector. Shortages of feed and concern about port congestion caused

Iran to encourage barley production through greater distribution of improved seed and fertilizer. Cooperatives and private farmers have thrived with the considerable help from public sources for credit, technology, support prices, and marketing. Rising prices and public policy proclamations have encouraged improved care of orchards. Cooperatives have taken over some of the large orchards previously owned by wealthy families. Public programs help the coops to get necessary fertilizer and insecticides and provide a favorable marketing climate.

Iran has a number of programs to encourage agricultural output, including low-cost credit through the cooperatives and widespread availability of improved seeds and fertilizer at subsidized prices. Programs to increase the area under irrigation have advanced as more dams were completed. Public sector companies handle much of the marketing of major crops. About half of the wheat crop is purchased by the grain board. All of the tobacco crop is sold to the Iranian tobacco company (100-percent public) which produces and markets tobacco products. The Iranian meat organization (IMO) buys domestically produced meat at fixed prices and also handles imports and distribution to grocery stores. Government shops have been established to sell basic subsidized foods, including bread, sugar, pulses, and dairy products. Government distribution accounts for about two-thirds of the bread supply, leaving both farmers and urban consumers with a great dependence upon the regime.

Cooperatives have programs to disperse improved varieties of seed, especially for wheat, and they manage tractor stations. The government has widespread programs to provide milk for school children.

Most of Iran's food imports have been taken over by the public sector. The grain board handles imports of wheat, rice, corn, and sorghum. Countertrade or bilateral trade agreements have become important. For example, rice and beef from Uruguay are exchanged for petroleum. Other countertrade arrangements with Turkey, Brazil, Thailand, Bulgaria, Romania, and Pakistan involve the exchange of food for petroleum.

Agricultural Program Evaluation

Following the drought of 1984, distribution of improved seed and adequate fertilizer received a higher priority. Programs to procure grain increased and new storage facilities were built, especially in the interior. Recent gains in agricultural output were a result of high guaranteed prices, subsidies for fertilizer and machinery, and greater use of improved technology. Irrigation projects were expanded, but at a pace far below targets of the 5-year plan.

Implementing agricultural programs has been problematic, a result of confusion over landownership, lack of funds, policy inconsistencies, and uncertainty about long-term investments in livestock operations. Commodities with quick returns on the investment such as wheat and potatoes have done well, while programs to boost output of beef, milk, and mutton have not. This is partly due to price hikes for wheat and barley and relatively small price increases for livestock products. However, efforts to stimulate the livestock sector have resulted in imports of improved breeds of cattle and programs to improve native breeds through artificial insemination. Greater investments by the public sector and cooperatives in livestock operations are occurring, but much more is needed.

Iran has been relatively successful with the program to increase exports of nonoil commodities. Its sales of carpets, onions, garlic, dried fruit, and melons to Europe have recently shown spectacular gains.

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IRAQ

John B. Parker

Rainfall variations cause wide output fluctuations in Iraq's two major crops, wheat and barley. Higher prices and input subsidies recently triggered greater output of milk and poultry meat, as well as vegetables. Agriculture provides about 14 percent of the GNP, less than 50 percent of the food needs, and about 30 percent of the employment.

Iraq's main policy goals are to provide an improved diet and to reduce food shortages through increased local output. Tools to achieve these goals have included easy credit, input subsidies, tractor stations, and higher procurement prices. Over half of Iraq's food is imported. Agricultural imports are diversified, although wheat, rice, and feed grains accounted for a fifth of the value during 1984-86. Other major items are sugar, beef, poultry products, vegetable oils, oilcake, and cotton.

The Economy

Petroleum income currently provides about 14 percent of the GNP and over 98 percent of the exports. Manufacturing, construction, and commerce have gained in importance in recent years, but previous policies limiting free enterprise have thwarted potential gains. About 75 percent of the industry is operated by public agencies, as is all banking, air transport, and virtually all foreign trade. Housing, retail trade, and agriculture are the key activities in the private sector. As oil prices declined and the war continued, Iraq's per capita GDP declined from $3,000 in 1980 to less than $2,800 during 1984-86. Shortages of foreign exchange, lack of convertibility of the Iraqi dinar, and obtaining credit for imports are major concerns.

Agricultural Sector

Iraq's major crops are wheat and barley, especially in rainfed areas of the north. Dates, vegetables, rice, corn, and grapes are major crops in the irrigated areas of central and southern Iraq. Cotton and tobacco output has been encouraged recently. Livestock products account for about two-thirds of the value of agricultural production, estimated at $6 billion per year. Wheat, rice, sugar, vegetable oils, beef, frozen poultry, dairy products, and tea are the leading agricultural imports. Dates and barley account for most of the agricultural exports.

The ministry of agriculture has established community input stations throughout the country for farmers to rent tractors and implements at reasonable rates. Because of the war, policies favoring barley were implemented since transportation of feed from ports in Turkey and Jordan to northern Iraq is nearly as costly as the price of barley on the world market.

Policy Goals

Increasing domestic agricultural production became a more important policy goal after 1982 because of the shortage of foreign exchange and problems with transportation and distribution after the loss of Iraqi port facilities because of the war. Iraq's agricultural policy stresses low fixed prices for basic foods. This policy has essentially focused on low retail food prices (except for fresh produce after 1984), greater input subsidies, higher procurement prices, and open market prices. For example, bread is very cheap, averaging about 15 cents per pound. Input subsidies have encouraged broiler enterprises, resulting in a doubling of output. Construction of modern roads, and new refrigerated marketing facilities, and higher guaranteed prices have encouraged greater production of perishable commodities, especially fresh vegetables.

Policy goals of increasing production of a wide range of food products led to higher producer prices and greater input subsidies in the last 7 years. Efforts to increase output of livestock products have been greatly encouraged through much greater imports of subsidized feed, which contributed to profits for private farmers. Import substitution has been stressed through programs designed to bolster output of many crops and livestock products. Perishable products have been given a higher priority since 1982 because of limitations on imports of luxury items and problems with transportation of imported products after use of gulf ports became difficult.

Agricultural Programs

The government procurement programs at high guaranteed prices for wheat, barley, and rice have effectively raised output. An elaborate grain storage program provides ample stocks of grain throughout the country. Programs to rebuild the Iraqi agricultural structure are underway, now that free enterprise and cooperatives are favored. The revolutionary command of military officers nationalized many large farms, but plans to distribute the land to smaller farmers were delayed and the land was underused. Reforms in 1984-86, which provided more subsidized inputs and higher producer prices, responded to the emergency situation of food shortages, transportation problems, and the lack of foreign exchange to buy necessary imports. Government programs to help farmers provide ample inputs, easy credit, and leasing of public land which had long been underutilized through public ownership.

Government agencies maintain management of major aspects of food imports and distribution. Efforts to make this system more efficient have resulted in more prompt use of credit from the United States and other suppliers. More multicommodity barter arrangements of food for petroleum are likely because of Iraq's foreign exchange shortage.

Agricultural Program Evaluation

The ministry of agriculture and irrigation seeks to expand upon recent policy changes which have produced favorable results. The recent changes resulted in much greater use of technology by farmers because of subsidies, new tractor stations, leases of state farms to private farmers, and higher producer prices. The program to make cheap bread available throughout the country and provide equal opportunities for obtaining subsidized food for rural areas has met with some success. However, the cost of producer and consumer subsidies has been considerable, estimated at $1 billion per year.

Optimizing domestic output is being explored. New dams will raise the irrigated share of 5 million hectares cultivated to possibly half the area a decade from now, up from a third in 1987. Import substitution programs have contributed to the recent boom in output of vegetables and decidious fruits, but shortages have been difficult for urban shoppers. Despite statements by the minister of agriculture and irrigation about food-self sufficiency, agricultural imports are likely to increase when petroleum revenues rebound and the war subsides or ends.

New commercial orchards planted over the last decade have provided greater harvests of apples, pears, peaches, and apricots. Dramatic changes in policies concerning producer prices, credit, and technology assistance bolstered output of poultry products and milk. Exemption from certain land reform laws encouraged farmers to plant more orchards and vineyards.

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ISRAEL

Michael E. Kurtzig

Agriculture accounts for only about 5 percent of Israel's GNP. But, its central place in Zionist ideology, its dominant role in the settlement of the country, its important position in absorbing new immigrants, and its security aspects have assured it priority in the economic politics of the government and other public bodies. The government has been involved in developing, subsidizing, and controlling agricultural activity, including fishing and forestry, since independence in 1948.

The structure of agricultural production has changed considerably since the establishment of the state. Crops which enjoy a clear ecological advantage have consistently formed the dominant part of agricultural output. Of Israel's 437,000 cultivated hectares, nearly half are in field crops, primarily wheat and cotton. Twenty percent of the cultivated area is in citrus and other fruits; the rest is in pasture. The remaining land is in vegetables, potatoes and melons, fishponds, flowers and ornamentals, and forest.

One of the central targets of Israel's agricultural policy is to be as economically self-sufficient as possible and produce for the export sector. The major characteristic of Israel's agriculture has been the growth of agricultural exports, both fresh and processed. For example, in the trend toward product diversification, citrus exports as a percentage of agricultural exports dropped from 96 percent in 1950 to 42 percent by 1980. The share of fresh agricultural exports of total agricultural production rose from 18 percent in 1962 to 31 percent 20 years later.

The United States is Israel's single largest trading partner, although the EC is larger overall. The United States also dominates in agricultural trade, where the main exports to Israel have been wheat, corn, sorghum, and soybeans. U.S. agricultural imports from Israel have been increasing in recent years and totaled $72 million in 1986, primarily fruits and vegetable preparations.

The Economy

The Israeli economy grew remarkably after independence. Between 1950 and 1976, GNP grew by nearly 9 percent a year in constant prices. By 1985, per capita GNP amounted to nearly $5,000, while GNP growth rate was a modest 2-3 percent. The Israeli standard of living is equal to that of some West European countries. The engine of growth was the inflow of foreign funds and, until recently, immigrants. The population increased an average 5.2 percent a year between independence and 1976 but in the last decade has slowed to around 2 percent, as immigration diminished and emigration increased.

Israeli government and politics are based on principles and practices deriving from Western parliamentary democracies. Among the identifiable features are public mandate through electoral consent, vigorous and unfettered multiparty competition, loyal opposition, a free press, supremacy of civilian rule, and the evolutionary rather than revolutionary process of development.

The Agricultural Sector

The agricultural sector comprises less than 5 percent of the country's GNP and occupies less than 5 percent of the labor force. Farm organization is predominantly cooperative in terms of agricultural population, area cultivated, and the value of production. The best known is the kibbutz (a collective) in which a group of individuals associate on the basis of equality among all members, mutual responsibility, absence of private property, and running production and consumption on a collective basis. As the country developed, the kibbutz movement began industrial pursuits and, by the 1980's, the income of more than three-fourths of the kibbutzim was derived from industrial pursuits. The most popular cooperative farm organization is the moshav in which each family lives in its own household and operates its own farm, marketing cooperatively.

Israel is a small country and agricultural output must be viewed under the constraints of water and land. Its main products are wheat, cotton, fruits and vegetables, and dairy. With the exception of wheat, the self-sufficiency ratio in these products is high with considerable surplus for export. Israel's principal agricultural exports include processed vegetables and fruits, fresh fruit, cotton, and live plants and flowers.

Policy Goals

Israel has striven to provide enough food for a rapidly growing population, to become self-sufficient in those commodities in which it has a comparative advantage or must produce for security reasons, and to produce a surplus of increasingly high-value commodities for export. It has been successful. Its self-sufficiency ratio for total food consumption rose from 63 percent in 1955 to 90 percent in 1983.

Israel has pursued with some success the goals of reducing inflation, reducing the balance of payments deficit, and increasing foreign exchange reserves. But, major problems such as unemployment, business difficulties, the foreign trade deficit, and deteriorating current account balance still remain. Israel seeks to encourage trade. It focuses on export industries, especially in the high tech and science-based industries.

Israel seeks to remain competitive in its traditional agricultural exports, such as citrus, vegetables, and their products, increase the value added by exporting more processed products, reduce the cost of production, seek out new markets, and, perhaps most important, diversify the mix of its agricultural exports into exotic products such as kiwi, lycee nuts, carambolla, and macadamia. These products have high export prices and limited markets. Israel also seeks to diversify its markets, thereby reducing dependence on the EC.

Agricultural Programs

Agricultural development programs have included intensifying agricultural production through various cultivation methods including crops grown under glass and plastic houses, trickle irrigation, growth hormones, refining animal feeds, upgrading the genetic quality of animals, increasing exports, and diversifying export products. The government continues to subsidize certain aspects of its agriculture. Products such as citrus and avocado have a minimum price. There are producer subsidies for table eggs and broilers. Milk is produced under a national quota and bread subsidies are paid at the bakery stage.

Israel also has marketing boards, such as the cotton board and the citrus board, which, in conjunction with ministry of agriculture officials and growers from the collective and cooperative sectors, determine production and marketing strategies.

Israel's activities in developing countries remain low key. In most instances, the services of semiofficial companies are used, especially in politically sensitive areas. Cooperative research and some trade with Egypt continues, though on a limited scale. Israel has applied its development experience in such areas as agriculture, regional planning, arid zone development, water management, cooperatives, education, and health. Israel also conducts courses within the country in community development. cooperation and labor, agriculture including farm management, cooperatives, and forestation.

Agricultural Program Evaluation

As a small country, Israel has sought to make the optimum use of its very limited resources. Land is intensively cultivated. Greenhouse and plastic agriculture pervades in many areas, covering an assortment of crops, including flowers, vegetables and specialty items. Water use has reached an optimum level with drip irrigation, water conservation and reuse, and desalination.

Three trading arrangements help Israel: (1) the EC agreement systematically lowers the duties between the EC and Israel for nonagricultural products; (2) the United States allows 2,700 Israeli manufactured items to enter the United States without duties; and (3) a free trade agreement with the United States, effective in September 1985, should increase trade between the two countries. The agreement calls for mutual immediate duty free status for many products, progressive reductions on others, with further reductions on a third category still to be negotiated. As Israel's exports have expanded, competition in international markets has intensified.

Israel has been one of the most innovative countries in agriculture. Water has such a major role in intensive agricultural production in the semi-arid climate that it determines how much land is used. The water constraint made capital-intensive agriculture unavoidable. Sizable investments have been funneled into advanced water technologies.

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JORDAN

Fawzi A. Taha

Jordan, a small country with very limited resources, has a population of 3.6 million. A large service sector contributes 64 percent of GDP. Agriculture produces only 8 percent. After impressive real growth rates of 9-10 percent in 1975-81, rates declined to an average 2.6 percent from 1983-86, mainly because of lower oil revenues in neighboring countries who were Jordan's main sources of foreign exchange in the form of remittances and Arab aid. In 1985, remittances comprised 22 percent of GNP, while Arab donations accounted for 16 percent.

Jordan is a constitutional monarchy with a national assembly composed of a house of representatives and a senate. Since 1953, King Hussein has ruled with the assistance of an appointed council of ministers, responsible to the national assembly.

Jordan's agricultural sector, employing 8 percent of the labor force, contributes about 8 percent of GDP and 14 percent of exports. Jordan's crop production fluctuates widely because most crops are rainfed, with only 10 percent partially or fully irrigated. Jordan's crop production is mainly cereals (wheat and barley), vegetables (including tomatoes, cucumbers, and eggplant) and fruits, especially citrus, melons, and bananas. The country produces about 50 percent of its food requirements and heavily depends on a wide variety of imports including wheat, rice, feed grains, red meat, dairy products, fish and fish products, edible oils, potatoes, onions, cotton, and tobacco. Wheat is Jordan's staple food and the most important food produced and imported. In the mid-1980's, food imports totaled about $500 million, including $245 million in grains and oilcake meal. In 1986, total U.S. agricultural exports to Jordan were $45 million, mainly wheat, rice, corn, and soybean meal.

Jordan's economic policies are to improve the standard of living and reduce dependence on food imports. Agricultural policy goals are to provide food at reasonable prices, narrow the agricultural trade deficit by encouraging the export of high-value commodities, and increase rural income. The government intervenes in the agricultural sector through several policy instruments, including setting price policy, subsidies, acreage limitations, and selected investment strategies.

The 1986-1990 5-year development plan projects total investment of $10 billion. It aims to improve productivity through private investment in export-oriented, labor-intensive industries to increase exports and reduce the balance-of-payments deficit and increase the productivity of the agricultural sector to reduce food imports. Major domestic programs include purchasing wheat, barley, chickpeas, and lentils at subsidized prices, setting minimum retail prices on many agricultural products, encouraging use of agricultural inputs, forgiving taxes or tariffs on imported inputs, and renting land to private individuals at nominal prices for up to 15 years. The government offers producer incentives, particularly for import substitution crops.

Jordan receives substantial assistance in loans and grants for agricultural development. U.S. aid programs help develop Jordan's rangeland to increase livestock and dairy output and help organize research and extension on fruits and vegetables.

Restrictions and controls imposed by the government inhibited the most efficient economic growth of the country. Protectionist policies which encourage import substitution without regard for the country's comparative advantage may have led to resource misallocations and adversely affected the country's long-term economic growth. Government subsidies are not very effective in promoting the most efficient use of Jordan's scarce resources. For example, wheat subsidies benefit larger farmers, especially those in the irrigated sector, more than those in the rainfed subsector.

The GDP target of the new 5-year plan of 5 percent per year is very high considering the 4.2-percent growth rate achieved in the previous plan when the oil boom prevailed in neighboring Arab countries. The 1986-90 plan will likely have a better chance if the country is able to mobilize more domestic resources by encouraging private investment.

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KUWAIT

John B. Parker

Kuwait's agricultural policy seeks to provide the best quality food at the lowest possible price through government intervention and subsidies. Agribusiness based upon the use of imported ingredients and technology is encouraged. Elaborate subsidies have encouraged expansion of livestock and vegetable output. Agriculture accounted for only 1.4 percent of the GNP which averaged $22 billion during 1983-85. Kuwait seeks to increase national income through investments at home and abroad and cooperation with OPEC to revive petroleum revenues.

In 1986, agricultural commodities accounted for about a sixth of Kuwait's total imports of $6.6 billion. Imports provide 90 percent of the 3,400 calories consumed daily on a per capita basis. Food imports face few obstacles. Import diversification is pursued and, while the EC and Australia are major suppliers, the diversification policy tends to help sales of U.S. products, including corn, apples, and soybean meal. Kuwait's leading agricultural imports are rice, wheat, and corn.

As a result of increased processing capacity and improved infrastructure, Kuwait now imports more raw materials and locally produces more processed foods. High-value farm products account for about 70 percent of Kuwait's agricultural imports. Imports of beef, dairy products, fresh fruit, and processed foods are growing.

Petroleum revenues provide about two-thirds of Kuwait's GNP. Other major sources include foreign investments, income from services, and interest from savings accounts. Foreign investment by Kuwait is estimated at about $80 billion, which provides steady income to help cushion fluctuations in petroleum revenues. Agriculture provides about 2 percent of the 566,000 jobs. The decline in the oil and commerce sectors has prioritized the goal of economic diversification, particularly of manufacturing petrochemicals and consumer goods.

The few crops Kuwait produces include tomatoes, cucumbers, and alfalfa. Cereals occupy fewer than 1,000 acres. A 1981 census reported only 1,467 farms, with an average size of 1.5 hectares. Local output provides 10 percent of the food supply. Output of poultry meat, eggs, and milk is expanding and currently provides about a third of the poultry meat and half the eggs consumed annually. Several commercial dairies provide a third of the milk which is blended with imported milk.

Kuwait's seeks the best diet for its residents through subsidizing the price for bread, rice, milk, butter, cheese, and several other items. It also seeks to develop more agribusiness based upon imported ingredients. Kuwait does not prioritize development of its agriculture because the costs substantially exceed the price of imported food and feed products. But it is providing new subsidies to encourage more local food production.

Kuwait's agricultural programs include expanding dairy output, broiler operations, and local food processing. Subsidized imported corn and soybean meal has encouraged feedlot expansion. Commercial gardeners get subsidies to cover over half their costs of seed and fertilizer. Construction of dairy and broiler facilities or greenhouses is also subsidized. The Kuwait supply company imports corn, lentils, rice, and other foods for distribution through the subsidy system.

Through its elaborate subsidy system, Kuwait has promoted agribusiness expansion as well as diversification. Consumer subsidies have assured a good diet for the population and, as a result, no reduction in the policy of subsidizing food and agribusiness subsidies is expected. While petroleum income has declined, curtailment of investment in local industry and food imports is unlikely, although development plans have been slowed. Expansion of the fertilizer industry points to a shift from total reliance on oil income.

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LEBANON

Fawzi A. Taha

Civil strife has been responsible for much destruction, loss of productive capacity, and monetary and financial disorder in Lebanon. The economy depends mainly on the service sector which before the civil war provided two-thirds of GDP, followed by the industrial and agricultural sectors which accounted for 10-12 percent. Agriculture contributes 5 percent to GDP and 15 percent to employment. Agricultural policies include support prices for grain producers, subsidized improved seed, and consumer subsidy of basic commodities.

Lebanon produces wheat, barley, lentils, chickpeas, citrus, apples, grapes, olives, potatoes, and tobacco. It exports fruits and vegetables to neighboring countries, but imports over 90 percent of its wheat, barley, and corn needs. Food imports comprise a third of total imports, primarily grains, oilcake meal, meat, and dairy products.

Lebanon's population is 2.6 million, with a real GDP estimated at $1.1

billion. In 1974, before the civil strife, per capita GDP was $1,300; it was estimated at $440 in 1985. Until the mid-1970's, Lebanon's economy was one of the most developed in the Middle East. It was based on free enterprise, with no currency controls and minimal government involvement. However, with the civil strife, the government has become increasingly involved in the management of the economy.

In the last 15 years, agricultural production has shifted from cereals toward fruits and vegetables, the share of which rose to 80 percent in 1985 compared with an average of 60 percent in 1970-74. Principal crops are wheat, barley, pulses, citrus, apples, figs, grapes, olives, potatoes, tomatoes, and tobacco. In 1985, Lebanon's total imports were $1.8 billion; exports were $400 million. Annual agricultural imports average $500-600 million, recently dominated by food and feed grains. Agricultural exports comprised about 25 of total exports, mainly vegetables, fruits, and tobacco. In 1986, total U.S. exports to Lebanon were $139 million with agricultural exports amounting to $29 million.

The country's major policies aim at improving the standard of living and providing food at affordable prices. Lebanon relies on imports for over 60 percent of its food requirements.

In 1982, Lebanon established the council for development and reconstruction (CDR) to rehabilitate the economy. In 1984, the CDR estimated the cost at $17 billion over 10 years, a figure raised to $33 billion in 1985 because of inflation and currency depreciation. Reconstruction spending put heavy emphasis on housing, drinking water and waste management, road construction, transport, telecommunications, electricity, hospitals, and education.

Development plans were promulgated in 1958, 1962, and 1972, but the political crises stopped their implementation. In 1975, the government announced the "green plan" to expand the irrigated subsector by 100,000 hectares. Even after the beginning of the war, the government announced programs to develop agriculture and build schools, hospitals, and low-cost housing. But, these programs were abandoned as the war continued. The government's reconstruction funds for agriculture amounted to less than 1 percent of total estimated expenditures over a 10-year period.

Since 1962, the government has encouraged wheat, corn, and barley production by setting support prices, distributing improved seeds at subsidized prices, and offering to purchase, store, and market the produce. This policy continued after the start of the civil war, although the government was unable to implement it. The wheat self-sufficiency rate is less than 4 percent. The government is the exclusive importer of wheat, which is sold to the mills at subsidized prices.

The government has been unable to effectively implement agricultural programs because of the civil war. The flow of goods and services between regions is limited. The lack of mobility in transporting commodities and labor services increases the cost of production and commodity prices. The government's inability to exercise full authority, especially to control the ports, prevent smuggling, and collect tax, has undermined its public finances and revenue receipts increased projected deficits, and stalled efforts to resurrect the agricultural sector. The agricultural sector is increasingly unable to meet domestic food requirements and is becoming more dependent on world markets.

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OMAN

John B. Parker

Oman has a traditional subsistence agriculture with many small farms. Recent transformation of the economy, resulting from large petroleum revenues, created a rising demand for food unmet by local supplies despite elaborate subsidies. This caused an eightfold increase in food imports in the recent decade. Efforts are underway to boost local food and fish output. Development projects have helped farmers increase yields through greater use of irrigation and improved technology. Even more important has been the modernization of the food distribution system with a wide array of imported food. Oman has joined other Mideast countries in curtailing food imports and promoting local production.

Oman's agriculture is dominated by gardens and orchards, mainly of dates. Programs are underway to increase forage output, particularly alfalfa under irrigation. The livestock sector is small but its expansion has led to larger feed and oilcake imports.

Petroleum revenues provide about three-fourths of Oman's GDP. Agriculture provided only 3 percent of the $9.3 billion GNP in 1985, although it accounted for nearly half of total employment. Imports provided about two-thirds of the food supply in 1984-86. Oman's agricultural imports annually increased over 10 percent during 1980-86 to approximately $455 million in 1986.

Maintaining reasonable food prices, improving the average diet, and increasing agricultural output are major goals. Oman is not much concerned with food self-sufficiency due to its high cost. Producer subsidies are used more as an income redistribution mechanism than to promote self-sufficiency. There is not likely to be any great shift away from imported food to local supplies because the demand for imported foods is rising so rapidly.

Oman subsidizes its farm sector which has been an incentive for many small farms to expand cultivation of horticultural crops and boost purchases of farm inputs. Traditional orchards of limes, mangoes, and bananas have expanded with foreign technical assistance in tapping underground water for irrigation. Also, subsidies provided more nursery plants, fertilizer, and insecticides at favorable prices.

Dams are planned to provide more water for irrigation. The Omani-American joint commission for economic and technical cooperation is expected to provide technical assistance for fisheries and agribusiness. With large petroleum revenues and virtually no domestic commercial farming to protect, Oman has low import duties on food and no problems in allocating foreign exchange for it.

Feed subsidies encourage expansion of livestock output. In the last decade, meat production doubled with new beef and poultry projects. The agricultural sector responded positively to subsidies. As a result of deep water projects, development of new cropland may push the cultivated area to 125,000 acres by 1989.

QATAR

John B. Parker

Agriculture accounts for less than 2 percent of Qatar's GNP. Petroleum and natural gas revenues account for over three-fourths. Commerce, construction, services, and foreign investment income are other major components. Qatar's policy goals include agriculture because of the need to better utilize the rising surplus of fertilizer, desire to expand cultivation near cities, and efforts to diversify the economy. Development of manufacturing, services, and trade, and rising income from foreign investments have helped Qatar cushion the effect of sharply lower oil revenues. Qatar has used savings and investment income to launch new petrochemical, fertilizer, and gas liquefaction projects. Reserves of natural gas are huge and exports of bottled gas are rising.

Agricultural development is proceeding well. The major farm products are dates, tomatoes, cucumbers, winter salad vegetables, and poultry. Output of livestock products is centered on increased investments in poultry enterprises and feeding sheep. Agriculture employs about 5 percent of the labor force estimated at 100,000 in 1985.

Qatar has attractive subsidies which have resulted in new date orchards, irrigated vegetable farms, and expanding poultry and sheep projects. Greenhouse agriculture is becoming significant. The ministry of agriculture provides subsidized fertilizer and support prices are provided for crops when necessary.

Petroleum wealth and trade were priorities in the 1960's and 1970's. Little attention was paid to agriculture. It was assumed that all the necessary food could be imported cheaply. Qatar's agricultural policy goals changed moderately in the last 5 years because of the overwhelming fertilizer subsidy. Subsidies have encouraged more business firms to construct greenhouses to grow vegetables. Also, subsidies and marketing arrangements have contributed to a sharp increase in output of broilers and eggs. Subsidies cover the cost of constructing production facilities, virtually all seed costs, and half of feed and other input costs.

Improved supplies of local forage and imported feed contributed to greater output of meat, milk, and eggs, which now provide 45 percent of domestic consumption. European and Asian assistance helps develop newly irrigated fields for horticultural crops and alfalfa. Programs to grow more alfalfa, bersim, and other forage crops have not succeeded because of the barren desert soils and problems with salinity. Efforts to partially offset the effect of lower petroleum prices should see an acceleration in poultry output, but imports of Saudi eggs are a disincentive for Qatari producers. Inexpensive imports tend to hinder local output, despite input and marketing subsidies.

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SAUDI ARABIA

George R. Gardner

Saudi Arabia is a major food importer, buying about 70 percent of its needs. Its imports have annually averaged $5 billion during the mid-1980's, despite 4 consecutive years of recession and policy goals of self-sufficiency in basic foodstuffs. The United States supplies about a seventh of the total food imports. The Saudi agricultural sector is small but growing rapidly, thanks to lavish production subsidies. While recently becoming a net wheat exporter, the country has simultaneously become the world's largest barley importer because of generous import subsidies and a dynamic livestock sector. Saudi Arabia remains largely a cash market. There is no serious shortage of foreign exchange even during the period of depressed oil prices because of massive foreign financial reserves which the government has been willing to draw upon.

The Economy

Oil and refined petroleum products are the backbone of the Saudi economy, but their dominance has diminished greatly since 1981. Beginning in 1981, total GDP has declined at an average annual rate of 14 percent, and the oil sector now accounts for less than 40 percent of GDP and 55 percent of government income. Declining oil income has been offset somewhat by the drawdown of foreign financial reserves. GDP is now less than half of its 1981 level in real terms. Completion of the basic physical infrastructure and industrial diversification have been the primary government goals in recent years.

The government is a monarchy, with absolute power resting in the royal family. Although the king's authority is supreme, the nation is, in fact, ruled by a handful of princes who occupy all of the most important ministerial posts. Both fiscally conservative (there is no national debt) and politically conservative, the government is generally considered to be closely aligned with U.S. interests in the Middle East. The economy is mixed, with some sectors (such as oil and petrochemicals) completely state dominated while other sectors (such as agriculture, construction, banking) are primarily within the private sector domain.

The Agricultural Sector

The agricultural sector is small (about 5 percent of GDP and 8 percent of the labor force) but growing rapidly, averaging over 8 percent per year during the 1980's even as the overall GDP declined rapidly.

Wheat production is the centerpiece of the agricultural sector, with Saudi Arabia having gone from being a major importer to a net exporter of wheat in only 4 years. The only other crop which provides an exportable surplus is dates, although self-sufficiency has been achieved in a few vegetable crops and egg production. The nation approaches self-sufficiency in poultry and dairy products. However, about 70 percent of the food supply is imported.

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Policy Goals

During the mid-1980's, the government's stated policy goal has shifted from one of rapid development of physical infrastructure to industrial diversification and human capital development (that is, Saudiazation of the labor force which is about 70 percent expatriate). This policy shift is evident in the fourth development plan (1985-90) which emphasizes an increasing role for the private sector in industry and a continuing government role in the agricultural sector. The policy shift was due largely to the government's foresight in recognizing the inherent dangers of relying on a single commodity--oil--to drive the economy.

The primary agricultural sector policy goal during the early 1980's was food self-sufficiency. However, during the current development plan, the sectoral goals are less lofty: attract private investment capital to achieve an annual growth rate of 6 percent and productivity increases of 4.5 percent. Because of the need to conserve groundwater resources, expansion is to be based mainly on productivity improvements.

Agricultural Programs

The government uses a broad range of policy tools to pursue its agricultural goals, including free production credit, input subsidies, and price supports to promote domestic production. The centerpiece is the wheat procurement program, which gained the country international fame by paying farmers $1,000 per ton for domestic wheat (the price was reduced to $570 in late 1984). There are lavish government subsidies at every stage of production, including provision of free land, free production credit, the purchase and transport of imported inputs such as irrigation equipment, seed, and breeding stock, and subsidies for the storage and processing of farm products. For crops which producers do not choose to raise (such as feed grains), generous subsidies (50 percent of cost) are provided to importers. The programs are operated by three organizations: the ministry of agriculture and water, the agricultural bank, and the grain silos and flour mills organization. The agricultural bank provides interest-free production loans as well as separate production subsidies for specific inputs. The ministry of agriculture and water disburses crop-specific production subsidies and provides some input subsidies beyond those provided by the bank. The most visible subsidy programs, including but not limited to wheat procurement, are administered by the grain silos and flour mills organization.

The government has a liberal trade policy. It licenses all imports, but exerts relatively little control over them, although some items (such as pork products and alcoholic beverages) are banned for religious reasons. The quantity of imports is not limited to any appreciable extent. Foreign exchange is not controlled, and tariffs--where they do exist--are mostly low to moderate. The government requires that all imports be channelled through Saudi agencies or individuals. This requirement is part of a wideranging policy designed to insure the development of a strong private sector and insure domestic control of the economy. Nontariff barriers to trade have been increasing rapidly, although they are more significant to potential investors than to U.S. agricultural exporters.

Agricultural Program Evaluation

Despite the stated policy goals. the Saudi drive for self-sufficiency has been tempered by falling world commodity prices and the country's own economic recession. The Saudis have, in fact, been increasing imports of some commodities which can be purchased more cheaply than those domestically produced (such as poultry and feed grains). In its drive for agricultural self-sufficiency, the government has employed thoroughly modern agricultural policy tools with impressive results. But, in doing so, the nation has also inherited some of modern agriculture's most persistent problems: increasing agricultural surpluses (such as dates, wheat, eggs), a growing grain storage problem (wheat), an increasing financial drain on the national budget, an influential agricultural lobby, and a paucity of politically acceptable solutions. These problems have been exacerbated by the precipitous fall in oil income.

In terms of comparative advantage and opportunity cost, producing wheat for over $1,000 per ton when it can be readily imported for a fifth that amount cannot be explained. In fact, there is scarcely a single commodity which the country can produce at anywhere near the world market price. However, in the early 1980's, the Saudis observed the effect of international boycotts. With over 80 percent of their food supply imported, their political vulnerability was obvious and food security became the policy priority. Despite this stated policy, Saudi dependency on imported foodstuffs has diminished only slightly.

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SYRIA

Fawzi A. Taha

Syria's economy is based mainly on the service sector, which contributes 55 percent of GDP (at market prices). The industrial sector adds 25 percent and agriculture 20 percent. After growing at a rate of about 10 percent in real terms during the 1970's and early 1980's, the economy declined 2 percent a year in 1985 and 1986. Syria's population was 10.5 million with an annual growth rate of 3.3 percent and per capita income of $1,980 in 1986. Oil and gas production continues to be Syria's principal foreign exchange earner. With a new oil field coming under full production, Syria will be a net oil exporter once again.

Legislative power is vested in the unicameral people's council with 195 elected members from the Baath party. President Hafiz Al-ASSAD came to govern after the Baath socialist party seized power in 1970.

Syria's agricultural sector accounts for about 20 percent of GDP, employs 31 percent of the labor force, and provides 21 percent of exports. The cultivated area is 6.2 million hectares, of which 5.7 million are for crop production and animal grazing. Agricultural output fluctuates greatly from year to year as a result of variable rainfall. Major crops include wheat, barley, corn, cotton, chickpeas, tomatoes, potatoes, eggplants, olives, grapes, apples, and apricots.

Syria's international trade is dominated by the public sector, which handled 90 percent of exports in 1980-84. As the foreign exchange shortage became more acute, the share of imports by the public sector increased from 74 percent in 1980 to 92 percent in 1984. Major agricultural imports include wheat, corn, rice, soybean meal, and sugar. Cotton lint is a major export item, especially to the Soviet Union, Algeria, Italy, France, and Spain. Other exports include vegetables, fruits, poultry products, and live sheep.

Syria's major economic goals are accelerating economic growth and improving income distribution. The government intervenes in all segments of the economy through a massive system of price controls covering principal consumer goods, all imports by the private and public sectors, and all manufactures by the public sector. This system is supported by subsidies on several essential goods and services, including bread, flour, baby food, rice, sugar, tea, coffee, vegetable oil, diesel fuel, and electricity. In the agricultural sector, the government emphasizes increasing irrigated area, expanding land reclamation projects, overcoming the salinity problem in the Euphrates basin, increasing agricultural mechanization, and developing rural and social services to slow rural migration. Syria receives substantial loans and grants from many Arab countries, the Soviet Union, the World Bank, and FAO to develop its agricultural sector and to expand irrigated area in the Euphrates basin and at Huran.

In February 1986, in order to raise agricultural production, Syria permitted the establishment of large-scale joint ventures between the private sector and the ministry of agricultural and agrarian reform. In addition, private sector bakeries were permitted to produce higher quality bread and charge higher prices. This was in line with government policy to reduce bread subsidies and move toward a more market-oriented economy.

Agricultural trade policies include an 8-percent export duty on unprocessed products, such as fruit, vegetables, and vegetable oil, and a 7-percent export duty on other agricultural exports. There is an export subsidy on cotton products amounting to the difference between the domestic and the world price. All imports require licenses issued by the ministry of foreign trade. Imports from Iraq, Jordan, and Saudi Arabia are exempt from this license. The government levies varying taxes and customs duties on imports.

The long-term outlook for Syrian agriculture depends on expanding the irrigated sector and reducing the country's dependency on rainfall. The land reclamation project at the Euphrates, which aims to double the irrigated area, is very ambitious. Since 1975, the project has achieved only 11 percent of the target because of several technical problems, including the construction of the canals, soil salinity, and shortage of foreign exchange.

The new large-scale joint ventures between the private sector and the ministry of agricultural and agrarian reform are positive moves. Given the country's dynamic business class, the new policy could increase agricultural output in the 1990's. Government consumer subsidies are a major budgetary burden and require a huge bureaucracy which could be better used in other economic activities.

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TURKEY

Michael E. Kurtzig

Turkey is the major agricultural producer and exporter in the Middle East. Its principal crops are grains, particularly wheat and barley. Its industrial crops include cotton, oilseeds, tobacco, and horticultural products. Turkey is also a major producer of livestock, particularly mutton and lamb, and is expanding its poultry flock. Agriculture comprises 20 percent of GNP and employs approximately 45 percent of the labor force. Industry contributes 25 percent to GNP while the services sector contributes about 40 percent.

The country's main policy goals are to be self-sufficient in agriculture and produce a surplus for export. Its agricultural imports until recently have been small and agricultural exports have expanded. Turkey now strives to intensify its agricultural output through improved inputs.

The Economy

Inflation remains Turkey's most serious problem, with wholesale prices annually increasing by 30-40 percent High unemployment continues, exacerbated by the economic slowdown in Europe, the Middle East, and North Africa where many Turks are employed. With an annual population increase of 2.1 percent, as many as 300,000 new workers enter the labor force each year. Unemployment is estimated at over 20 percent.

The government as a multiparty system began in 1950. Partisan politics is vigorous and responsive to the varied needs of the grass roots. However, in the 1970's, the political process became entangled with difficulties of major proportions. Long handicapped by the constraints of coalition politics and bitter incumbent-opposition confrontation, the government was also beset by the worst economic crisis in the country's history, resulting in a wave of social and political unrest. In September 1980, the military stepped in, declaring martial law and eventually re-establishing the parliamentary system, with elections held in 1983.

The government consists of a grand national assembly containing a senate and national assembly. The upper house has 150 members, while the lower house has 450 deputies elected directly for a 4-year terms. Turkey's political orientation has been toward the West. Relations with the United States have been improving steadily since 1979. This relationship had been dampened by the Turkish invasion of Cyprus in 1974 and the U.S.-imposed arms embargo. Turkey's trade is western oriented, particularly toward the EC.

The Agricultural Sector

Agriculture comprises somewhat less than 20 percent of Turkey's GNP. It employs approximately 45 percent of the population, a figure on the decline. Agriculture has a large share of underemployment and unemployment. Turkey is a major grain producer, particularly of wheat and barley, and also produces corn, rye, oats, and millet. It is a major producer of industrial crops including cotton, tobacco, oilseeds, fruits and vegetables, pulses, livestock products (beef, mutton and lamb, wool, poultry and eggs), nuts and dried fruit, and olives. The Middle East and the EC continue to be the principal markets for the country's livestock, tobacco, filberts, and raisins. The United States accounts for about 10 percent of Turkey's agricultural exports, mostly tobacco.

Policy Goals

Turkey's main priority has been to achieve self-sufficiency in agricultural output and to produce for export. Until the early 1980's, Turkish agricultural products were exported in their raw state. Turkey was a leading exporter of cotton, tobacco, raisins, and some livestock products. By the mid-1980's, a substantial portion of Turkey's agricultural exports were processed, with a commensurate decline in raw commodity exports, a result of efforts to put added value into Turkey's agricultural exports.

Since 1984, Turkey has greatly liberalized and simplified its trade policies and regulations in line with its overall market-oriented approach. In agriculture, import liberalization has mostly entailed removing import bans and reducing duties on bulk commodities, moves primarily intended to control inflation and support the export of value-added products. Tariffs were cut primarily on items used for further processing and on products in which Turkey is not self-sufficient.

The government continues to give special attention to the improvement of land and water resources and to expanding irrigation. As a result, about two-thirds of total public investment appropriated for agriculture is slated for land and water improvement. The government has also encouraged use of improved high-yielding seed varieties.

Agricultural Programs

Until recently, agricultural incomes in Turkey were strongly influenced by the government through regulation of prices, both for inputs and outputs. Prices for fertilizers were heavily subsidized until 1983, but the subsidy is being gradually reduced to 15 percent by 1988. Prices of most products have been raised recently to world market levels. Thus, the number of commodities with minimum prices was reduced from 25 to 11 in 1986. These prices have been increased slightly less than wholesale prices in recent years, causing the market prices for agricultural products to rise 2-3 percent higher than the increases in minimum prices. This compels producers to sell in the open market, rather than let the government intervene at minimum prices. The open market is also preferred because it immediately pays for goods. Under the support system, the government immediately pays only half with the rest paid over a period of a year.

Export policies generally aim at promoting value-added exports, while discouraging exports of raw commodities. The main tools employed are tax rebates, used to support exports of value-added products, and export taxes or deposits applied on raw commodity exports such as pulses, tobacco, cotton, filberts, and dried fruit. However, in line with Turkey's commitment to conform to the the GATT subsidy code, tax rebates (that is, export subsidies) declined sharply in 1985.

Bulk commodity export taxes (such as for cotton and tobacco) were also reduced in 1985 to promote exports. Moreover, on an as-needed basis, raw commodity exports continue to receive tax rebates, reflecting sectoral economic conditions. Export policies for fresh fruits are a case in point. Although there are no support policies or minimum export prices for fresh fruits, export subsidies, in the form of export rebates, are often paid by the government to encourage exports. In July 1985, the export subsidy rate was actually increased to 6 percent to reverse a decline in fresh fruit exports. To encourage production of exportable fruit, the government has also been helping farmers, packers, and exporters with technical assistance and low interest rate credit through the agricultural bank of Turkey. The World Bank has provided special loans to Turkish fresh fruit growers and processors under two 5-year World Bank projects.

In addition to direct incentives to trade, Turkey has devalued its currency sharply in recent years at rates far exceeding domestic inflation rates. This "real" currency devaluation has improved the export price competitiveness of all products.

Agricultural Program Evaluation

Turkey's agricultural objective of self-sufficiency in food production has been achieved. In the past, Turkey was unrealistic in its import policies, suffering shortages, rather than importing. The current government continues to favor relatively free trade that has made imports of almost anything possible. The government, while liberalizing imports of consumer goods including food as a measure to prevent sharp prices rises on the domestic market, is encouraging the use of hybrid seeds to increase domestic crop output.

Turkish farmers were hampered for years by the government's policy of not announcing commodity support prices until harvest. This policy was recently changed and support prices for several commodities are being announced before planting time, allowing producers some leeway in production decisions.

Domestic industry and agriculture in Turkey are still highly protected. However, the government uses imports as a brake on abnormal price increases. Accordingly, not only are customs duty rates being revised but the import surtax rates on certain items are also reviewed in accordance with market needs.

Turkey's target of increasing efficiency, particularly in the state economic enterprises and privatizing those enterprises, is beginning to materialize. This is being done in order to remove a major budgetary burden and to make the enterprises more efficient and competitive. Along with this effort, the government has announced regulations governing free trade zones. Turkey's need for short-term foreign exchange earnings, the need for greater competitive opportunities in foreign trade, and the encouragement of foreign investment for the country seem to be primary reasons for establishing free trade zones.

Privatization is also progressing in the tobacco industry, fruit and vegetable coops, the dairy industry, and other enterprises. The increasing importance of the livestock and poultry sectors has witnessed special government investment.

Turkey's exports in 1980-84 grew at an annual compound rate of 28 percent. The growth has been achieved by increasing sales to all major markets, except Eastern Europe. Particularly noteworthy is the access gained to the markets of some Middle East oil exporting countries whose share in Turkey's exports rose from under 10 percent in 1980 to 30 percent by 1985. The commodity composition of exports has shifted from unprocessed agricultural products toward processed agricultural products and manufactured products. While raw agricultural commodities accounted for two-thirds of Turkey's exports a decade ago, they now account for about a fifth.

The import liberalization program has produced a decisive reduction in quantity restrictions on imports to Turkey. In 1984, the list of banned goods consisted of over 200 items and some 1,000 items were subject to licensing. After May 1985, the banned list was limited to three items and the number of items subject to prior permission was reduced to 600. The 1986 import program removed more than half of the items on the list of those subject to prior licensing.

Reflecting concern over recent trade performance, the government announced in late 1986 measures to promote exports and reduce imports. Larger export rebates and credits were made available. On the import side, the government sharply increased surcharges on a number of products, including wheat, barley, and almonds. These measures are in apparent contrast to the overall liberalizing trend.

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UNITED ARAB EMIRATES

John B. Parker

United Arab Emirates policy seeks to provide good quality imported food at reasonable prices. The country ranks among the top five in the world in capita income. In 1986, UAE's population was 1.2 million, with the natural increase offsetting a decline in foreign workers. Subsidies encourage local agriculture, especially output of fresh vegetables, poultry meat, and eggs. Generous subsidies promote private enterprise projects, although most of the food continues to be imported.

The value of agricultural output is only 2 percent of GNP and agriculture provides 6 percent of employment. The leading crops are tomatoes, cucumbers, dates, and citrus. Increased output of poultry, meat, eggs, and fish have helped reduce dependence on imports.

UAE's economy is heavily dependent on exports of petroleum and natural gas, although policies promoting trade, banks, and factories have provided some diversification in income sources. New oil wells have been developed in Dubai and Ras-al-Khaimah since the OPEC quota was established. The quota limits only Abu Dhabi, the leading producer.

The origins of food imports are very diversified, although the EC usually provides about a fourth and Australia a tenth. The U.S. share fell from 14 percent in 1981 to only 3 percent in 1986, as Asian suppliers provided most of the rice, Australia most of the wheat and barley, and the EC most of the high-value products.

The major agricultural imports are rice, wheat, feed grains, frozen poultry, dairy products, beef, fresh fruit, onions, potatoes, and pulses. Small quantities of virtually every farm commodity entering world trade is imported because of the high standard of living and free trade policy.

The leading crops are tomatoes, cucumbers, squash, dates, and citrus. The 16,510 farms average only 2 hectares. The UAE has an expanding poultry sector with output increasing markedly in recent years. New dairies are producing more milk, which is blended with imported preserved milk to prepare reconstituted milk. The local fish catch of 70,000 tons supplements rising consumption and reduces import dependency.

The UAE uses subsidies and high technology in the development of a modern agriculture similar to that of Saudi Arabia. Most food imports enter duty free, or at an ad valorem duty of less than 5 percent. Much higher duties are levied on tobacco products and alcoholic beverages. The UAE seeks self-sufficiency in some fresh vegetables such as tomatoes and cucumbers. The country also aims to increase exports of dates and citrus. Through greater use of imported feed grains, local output of poultry products is scheduled to increase, but total elimination of imports is not a goal. Improving the quality and safety of food is emphasized.

The UAE has ambitious agricultural development plans. Further gains for the area under irrigation are scheduled, particularly in Ras-al-Khaimah and Al Ain. Subsidies continue to provide fertilizer and seeds at less than half their cost. Subsidies provide most of the money for initial investments in date orchards, irrigated vegetable farms, and greenhouses. Small greenhouse projects and feedlots near cities have been the path of achievement. Free educational facilities, extension services, and veterinarian care are provided. Development of irrigation wells to tap underground water, construction of small dams to trap winter rainfall, and construction of processing facilities for tomato surpluses are planned. New packing facilities in Ras-al-Khaimah stuff pitted dates with almonds for duty-free exports to the other five gulf cooperation council countries.

Agricultural development in response to subsidies and strong local consumer demand is apparently in an early stage. Over 80 percent of the food supply is still imported. The UAE has yet to develop a large area of newly irrigated cropland. Programs to expand the area under irrigation have been hampered by too much speculation by outside investors and too little involvement by farmers. Subsidies have been effective in bolstering output of some vegetables, especially tomatoes, cucumbers, and melons. Yet, they have had little effect on production of fruit, other than dates and citrus. Competition from inexpensive imported poultry and beef tended to reduce the advantages of subsidies for poultry projects. The UAE is likely to continue its policies of free trade for imported food.

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THE YEMEN ARAB REPUBLIC

Fawzi A. Taha

The Yemen Arab Republic depends on the service sector, with over 1 million laborers working in neighboring oil rich countries providing the bulk of foreign exchange as remittances. Agriculture is the leading economic sector, employing about 75 percent of the resident labor force and contributing 38 percent of GDP.

Yemen produces sorghum, millet, wheat, barley, corn, potatoes, tomatoes, cucumbers, grapes, melons, dates, and bananas. Foodstuffs comprise about one fourth of total imports, mainly wheat, wheat flour, rice, sugar, meat, and dairy products.

Major trading partners are the EC, the Arab countries, Korea, and China. Imports peaked at $2 billion in 1982, but declined 63 percent by 1986 because the country imposed import restrictions to save foreign exchange. Agricultural exports amounted to $14 million in 1986, including pastry, biscuits, cotton, coffee, hides, and skins. Government agricultural policies promote food production by expanding the country's institutional and infrastructural services. Prices are controlled on a few imported items, such as wheat, wheat flour, rice, meat, and sugar. All locally produced agricultural products are traded freely.

Yemen is a small country with limited land, water, and minerals. Oil was discovered in 1984. Its population is over 9 million and per capita income is $430. Remittances from Yemenis working abroad represent the country's largest source of foreign exchange. Remittances had peaked at $1.2 billion in 1982-83, contributing 33 percent to the GDP, but their share decreased to only 19 percent in 1986.

Executive power is vested in the president elected for a 5-year term. Since 1978, Abdallah Ali Saleh has ruled with the assistance of an appointed cabinet and a people's assembly.

Since its 1962 revolution, Yemen has witnessed a major shift in its agricultural sector from a mostly traditional, self-contained subsistence farming system to a more market-oriented one. Local production was unable to cope with the growing demand for food because of the country's inability to expand production under the prevailing farming system. Government policies concentrated on improving the standard of living, per capita income, education, and health; developing infrastructure and basic services; and providing consumers with affordable food.

The country's first two 5-year development plans concentrated on improving and expanding infrastructure services including transportation, marketing and storage facilities, research, and extension service. Targets of the third plan (1987-91) include increasing agricultural output, optimizing water use, exploiting minerals, especially oil, developing efficient industries, and relying more on domestic finance.

Government price control is limited to a few basic imported items such as wheat, wheat flour, rice, meat, and sugar in the form of prescribed maximum margins. No regulations are imposed on the market for domestically produced grains, vegetables, fruits, or meat. Government encourages use of agricultural inputs, including fertilizers, pesticides, and improved seed, and provides credit at a low interest rate to small farmers and major cooperatives.

The country receives multilateral and bilateral assistance in loans and grants to develop its agriculture. European donors concentrate on fruits, vegetables, plant protection, and mechanization. U.S. assistance has been in training agricultural researchers and other professionals.

Obstacles to agricultural production are rooted in the country's physical, institutional, and human limitations. The main reasons behind the low growth rate of the past two development plans were natural and financial shortfalls. For 3 consecutive years since 1983, the country was plagued with drought resulting in a substantial crop shortfalls. Foreign exchange shortages caused a large cut on investment spending. The plans were too ambitious, given the country's limited number of professional laborers capable of carrying out operational aspects of the plans.

The major issue facing agricultural development is the lack of and inefficient use of irrigation water. Other obstacles include the high level of labor wages due to large emigration to the neighboring oil producing countries, the limited use of farm machinery due to lack of knowledge and technical guidance in modern agricultural practices, problems in marketing, distribution, and storage of agricultural products, and lack of research and extension services. Land fragmentation is an important problem because it limits the efficient use of machinery, investments such as drilling wells for irrigation purposes, and farm management.

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THE PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

Fawzi A. Taha

The People's Democratic Republic of Yemen has a population of 2.3 million and a per capita income of about $500. Services are the mainstay of the economy, centered on the port of Aden which has large storage facilities and an oil refinery. The port is a bunkering facility for ships on voyage to the Far East through the Suez Canal and serves as a distribution point for goods to other smaller ports on the Red Sea and the African east coast.

Agriculture and fisheries contribute about 10 percent to GDP, employ 40 percent of the labor force, and provide livelihood for 65 percent of the country's population. Major crops are cereals, fodder, cotton, vegetables, and fruits, especially bananas and dates. The country is self-sufficient in sorghum and vegetables, but imports over 90 percent of its wheat requirements, and a substantial amount of feed grains, meat, dairy products, petroleum, and industrial goods. Livestock and poultry production made considerable progress in recent years and the country is nearly self-sufficient in eggs.

The republic is the only Arab Marxist regime. The Yemen socialist party elects 111 members for the supreme people's council.

About 200,000 hectares are arable, but only 60,000 hectares are cultivated because of limited water resources. The agricultural area is divided among state, cooperative, and private farms. The private sector accounts for over half of total production, state farms 15 percent, and cooperatives 35 percent.

Major policy goals are to improve the standard of living by diversifying the economy, increasing its productive base, promoting exports, and substituting imports with domestic production. Priority is given to developing the transport and communications network, expanding access of the population to safe drinking water, and improving primary health care services and housing.

Agricultural policies aim at self-sufficiency in food production and import reduction. The second 5-year development plan (1981-85) specified an expenditure of $1.5 billion aimed at an overall annual GDP growth rate of 10 percent (9 percent for agriculture). Foreign donors include the USSR, China, other Arab countries, the Islamic Development Bank, the International Fund for Agricultural Development, the International Development Association and bilateral aid from Western countries. Foreign resources played a significant role in funding the plan.

The government establishes producer and consumer prices for major items. Cooperatives have a monopoly on transporting and marketing agricultural products, whereby the private sector is banned from free access to markets. Only cooperatives, which have shops, may directly bring produce to markets.

The government formulates cropping patterns and production plans, distributes most of the agricultural inputs, taxes fertilizers, and subsidizes mechanization services and water.

The targets of the second 5-year plan were clearly too ambitious in light of the economy's performance during 1973-80. Growth in the agricultural sector was near zero and annual GDP growth was under 3 percent. Agriculture was allocated 23 percent of the total plan funds, two-thirds of it to irrigation. However, the irrigation subsector suffered a severe setback after 1982 flooding and its rehabilitation is incomplete.

Constraints of the 5-year plan were the shortage of foreign exchange, low producer prices, acute labor shortages, inadequate management of the farm implement repair centers, inadequate marketing and storage facilities for all crops, and shortages in professional workers, including those in research and extension. Self-sufficiency in fruit and vegetable crops could be achieved if producer prices were competitive with world prices. However, increasing grain output is very difficult because of limited water resources.

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REGIONAL SUMMARY OF NORTH AFRICA

George R. Gardner

The five nations constituting the northern tier of Africa (Morocco, Algeria, Tunisia, Libya, and Egypt) have many similarities in their agricultural production, consumption, and trade policies. Although all produce significant portions of their national food consumption needs, none is self-sufficient. Their combined population of 110 million grows more rapidly than agricultural production. Therefore, food security strategies are at the forefront of their development schemes.

A primary policy goal typical to the region is provision of an uninterrupted supply of cheap foodstuffs to low-income, but politically important, sectors of the population. Execution of this policy requires reliable suppliers of imported food who also are willing to provide concessional credit terms for purchases. North African nations generally attempt to insure uninterrupted food supplies by signing long-term, bilateral trade protocols with politically friendly nations. Another typical policy goal is the diversification of food suppliers so that excessive dependency on a single trading partner does not develop. Still other nations cultivate trade protocols with European nations which dominated them during earlier colonial eras. Taken together, the North African nations are important buyers of U.S. agricultural products, especially grains.

The economies of the region are mixed, usually combining heavy state involvement in basic sectors (such as petroleum and mining) with capitalist domination of other sectors (such as services). Agriculture typically contributes 10-15 percent of GDP and occupies 20-30 percent of the labor force. Egypt alone constitutes nearly half of the region's population.

Four of the five nations are significant exporters of hydrocarbons, but nevertheless carry heavy debt burdens. Therefore, concessional credit for food imports plays a critical role in the regional market as multiple suppliers (primarily the EC and the United States) compete fiercely to maintain their market shares.

North African nations are characterized by extensive central government involvement in agricultural production, marketing, and foreign trade, especially imports and distribution of basic foodstuffs such as wheat, flour, sugar, and vegetable oils. The government authorities usually prefer long-term, bilateral food purchasing agreements with reliable suppliers. Income levels in the region are low. Food, therefore, constitutes a large proportion of average household expenditures. All of the nations have extensive consumer subsidy systems with wheat or wheat products as their centerpiece. These longstanding consumer subsidies constitute an important part of the socioeconomic fabric, and they form a "safety net" for large and politically important segments of their population. Therefore, governments are generally reluctant to change the policies which maintain the various subsidy systems.

Both agricultural production and trade are characterized by extensive central government presence and policies aimed at domestic self-sufficiency in wheat, although none of the North African nations are likely to attain this policy goal. Typical policy instruments include acreage allotments to force the procurement of specific crops, artificially low domestic procurement prices for export crops which can earn scarce foreign exchange for the central government, government monopoly of the import (or export) of strategic crops, heavy government subsidization of agricultural production inputs such as fertilizer and insecticides, complex exchange rate regulations which favor the export (or import) of specific commodities, and the actual banning of the import of certain foodstuffs deemed to be luxury items by the central government.

While many of the region's agricultural policies purport to assist or protect domestic producers, most agricultural procurement policies in the region, in fact, are biased in favor of urban consumers and do not provide sufficient producer incentives to greatly increase output. The region's domestic self-sufficiency in foodstuffs and feed grains has declined during the 1980's. On the whole, central government intervention has woefully failed to reduce or stem the growth of the food gap which has opened up between domestic supply and consumption. In Egypt, for example, the gap has continued to widen even as dependence on a few key suppliers has continued to grow.

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ALGERIA

David W. Skully

Algeria's agricultural sector dominated economic and policy considerations when Algeria was part of France from 1849-1962. Its importance dwindled as hydrocarbon extraction and processing, which began in the mid-1950's and boomed following the OPEC oil price increase of 1973, emerged as the economy's engine of growth. Wheat and barley are the primary grain crops. Transhumant sheepherding and modern beef and poultry facilities comprise the livestock sector, while citrus, tomatoes, pulses, grapes, wine, olives, and olive oil are important cash and export crops. Agriculture accounts for 7 percent of GDP and employs over a quarter of the labor force.

Algeria is a nonaligned, socialist country. The state is involved in most aspects of economic activity, including control of all trade and a significant portion of prime agricultural land. Industrialization and economic independence have been the primary policy objectives. Until 1979, agriculture was neglected in national planning relative to the hydrocarbon and industrial sectors. But now, revitalizing agriculture is a priority and recent policies are designed to reduce agricultural imports. The United States is an important supplier of wheat and corn.

The Economy

Hydrocarbon's share of GDP declined from 44 percent in 1967 to 25 percent in 1984 because production has been relatively constant while the rest of the economy has grown quite rapidly. Because the petroleum industry is highly capital intensive, direct employment in the hydrocarbon sector is trivial in terms of the national economy. With the very sharp decline in world oil prices, Algeria's oil revenues dropped 41 percent in 1986, although overall revenues declined only 26 percent due to increases in taxes and other austerity measures imposed in compensation for the loss of foreign exchange.

The major government policy has been the compression of imports, resulting in shortages of certain products such as coffee, sugar, butter, cheese, milk products, and cooking oil. Under the difficult economic circumstances, the government stresses reduction of waste, more efficient management of state enterprises and possible dissolution of enterprises consistently showing a loss at state expense, better maintenance of equipment, export promotion, and more private initiative.

The Agricultural Sector

Since independence in 1962, Algeria has shifted from a rural, agricultural society to a predominantly urban one. The urban proportion of the population grew from under 30 percent in 1960 to about 50 percent in 1985. Agricultural employment has grown slightly in absolute terms, but its share of the labor force has fallen from half in 1967 to a quarter in 1984. Agriculture's share of GDP declined from 10 percent in 1967 to 7 percent in 1984. This decline is proportionately much less than the decline in the agricultural labor force and indicates the relatively high level of underemployment in agriculture in the 1960's, as well as the low rate of growth in agricultural output compared with other sectors.

Algerian agriculture is comprised of three sectors: the socialist, the agrarian revolution, and the private sector. The socialist sector emerged in 1962 when virtually all Europeans fled to France at independence, vacating over 2.8 million hectares of prime land. The land was then occupied by hired laborers and those claiming to be its former owners. The Algerian political leadership recognized the occupants, but placed the land under state control and gave some farm positions as a reward to veterans of the war of independence. The socialist sector received the bulk of state funds allocated to agriculture, until recent policy reforms. Production incentives have generally been poor, and the labor union has prevented the entry of younger workers from diluting the wage fund. As a consequence, the average age of farmworkers is 55 years.

The agrarian revolution was initiated in the early 1970's to redistribute land holdings in the nonsocialist sector. Homesteading activity was administered by agrarian revolution cooperatives.

The private sector holds over 60 percent of the arable land, accounts for 90 percent of meat production, 85 percent of dairy output, and over 60 percent of grain and market vegetables. Since independence, the sector has received none of the investment, extension, fertilizer, or credit given to the socialized and agrarian revolution sectors, yet its yields are generally comparable to the state sectors in grains and much higher in vegetables.

Wheat and barley are the most important crops. They are planted on about 40 percent of the agricultural land and account for 20-25 percent of the value of agricultural output. Production of tomatoes and potatoes has increased recently, spurred by rising demand and by the deregulation of produce marketing in the early 1980's. Winter vegetable production under plastic has also surged. On the other hand, production of citrus, dates, and olives has not changed much, and output of grapes for wine, at one time the principal export, has declined because of the diminishing EC market for high-alcohol wine.

South of the grain regions are the rangelands that phase into the Sahara Desert. The open range provides pasture for sheep, the principal livestock. Sheep spend the winter on the open range and are then herded north to the cereal zone in the spring and summer, grazing the stubble left from the wheat and barley harvests. Most of the cattle are in the more humid areas. Commercial meat and milk production from the socialist sector increased during the 1970's as the government established feedlots, dairies, and broiler and egg farms, but output is still relatively low. Livestock products contribute about a fourth of the value of agricultural production.

Private owners generally have small herds and use the animals as a source of milk and often as draft power as well as a source of meat or cash income. Most are small, late-maturing animals. Friesian and Holstein cows dominate the herds of the socialized sector and the private commercial dairy farms supplying the urban milksheds. Commercial dairies are turning increasingly to fattening steers for slaughter.

Policy Goals

The death of President Boumedienne in 1978 and the election of President Bendjedid in 1979 allowed for a significant shift in Algerian economic policy. In the 1960's and 1970's, central plans emphasized rapid industrialization and vertical integration, suppressed current consumption, and diverted income into industrial investment. The 1980-84 plan allowed for more current consumption, not through imported consumer goods, but through increasing domestic production. Improving the supply of food items through strengthening marketing channels is a priority as shortages due to poor inventory management and administered prices were common in the 1970's. The softness of the world oil market and economy in the early 1980's, as well as the gradual depletion of Algeria's oil reserves, is reflected in the "life after oil" austerity expressed in the 1985-89 plan.

The fundamental policy goal is the transformation of Algeria into a modern, industrial, socialist, and Islamic society. Also crucial is retaining political and economic autonomy. Hence, there has been an emphasis on a strong military and national security structure, as well as a relatively cautious approach to public finance. Algeria is not as highly leveraged as other countries of comparable income and structure. The aversion to surrendering sovereignty to the International Monetary Fund or other creditors has made Algerian policy highly responsive to world market forces. In effect, it has imposed "conditionality" on itself as a preventive measure in the second 5-year plan. Algeria's approach to imports and borrowing is best characterized as restrained rather than constrained.

Agricultural Programs

Algerian development policy favored industry over agriculture from independence in 1962 until the adoption of the first 5-year plan in 1980. The government maintains an interventionist stance in agricultural markets. Producer, wholesale, and retail prices on many items are controlled. Retail prices have been heavily subsidized but subsidies are being gradually reduced, with moderate price hikes implemented in 1983, 1984, and 1985. Algeria is moving toward greater reliance on market forces for resource allocation.

The first 5-year plan created the agricultural and rural development bank to supply credit to private farmers. The plan liberalized real estate markets. In the product markets, fruit and vegetable retail prices were no longer constrained to national fixed prices which, in practice, were generally ignored. Instead, retail prices were set weekly on a provincial level to reflect local supply and cost conditions. These prices, too, are generally ignored. However, the volume of trade in public markets has been boosted due to these changes. Socialist and cooperative farms were also allowed to market a limited proportion of their produce on the open market.

The second 5-year plan (1985-89) shows Algeria's concern with preparing itself for "life after oil." Agriculture and water development will receive 14.4 percent of the plan's investment budget, more than double the allocation in the previous plan.

Most commodities are purchased by a separate national corporation, usually a vertically integrated state enterprise, responsible for meeting supply quotas and transforming the product from imported material to final product. All purchases are made under public tender. Tender approval and national corporation budgets are constrained by the national plan and the foreign exchange allocations of the finance ministry. Products such as bread, bread flour, and durum wheat flour are granted priority because of their key dietary role.

Agricultural Program Evaluation

Agriculture has fared poorly compared with that of neighboring Morocco and Tunisia. This relatively poor performance is attributed to the social and economic disruptions following the military colonization in the 19th century and the prolonged war against France in 1954-62. The socialist incentive structure in the most potentially productive agricultural areas is also blamed for the mediocre showing. Agriculture was a low priority in Algerian planning until 1980. The supply response to the incentive reforms since 1980 has been strong and indicates that Algeria could move a long way toward becoming self-sufficient in major food crops. Grain yields in Tunisia are generally double Algeria's and a twofold improvement is plausible during the next decade. The deregulation of agriculture has made it the opportunity sector in Algeria; capital requirements are low and most other sectors are highly bureaucratized. The economic necessity to lower food import costs has given strong political support to allowing relatively free markets in agriculture.

Algeria, as a large importer of wheat and animal feeds, has taken advantage of its market power and the recent subsidy wars between the major grain exporters. During the last 3 [illegible]ars, Algeria has been able to procure wheat at a fraction of its foreign production cost. Since there is little indication of exporter trade agreements, Algeria is likely to continue to gain this external subsidy.

Through the mid-1970's, agricultural prices failed to keep pace with industrial prices. But, since the mid-1970's, the domestic terms of trade have turned in agriculture's favor, while producer prices and farm incomes have been rising in real terms. This trend is likely to continue as the government attempts to boost domestic production and ease the urban migration by raising farm incomes.

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EGYPT

George R. Gardner

Egypt imports about half of the food needed to supply its rapidly growing population of more than 50 million people. The nation has not been self-sufficient in food production for two decades. Policies which promote a dependable imported food supply (about $4 billion per year) to supplement the virtually stagnant domestic production are the government's top priority. Foreign exchange deficits severely constrain agricultural imports. Production of the main export crops (cotton and citrus) is declining, while production of the main crops for domestic consumption (wheat, maize, rice, and beans) is virtually flat. Agriculture's share of GDP has been declining as the sector's growth rate has not kept pace with the economy's overall growth. The United States has supplied about a fourth of Egypt's agricultural imports during the 1980's, as has the EC. However, the Egyptian market has become increasingly dependent on concessional credit.

The Economy

During the early 1980's, Egypt's economy achieved impressive overall growth led by rapid expansion in certain commodity sectors (petroleum, industry, and mining) and certain service sectors (trade, construction, and transportation). Growth has slowed recently and the economy has been hampered by foreign exchange shortages, rapid foreign debt, growth, inflation, and stagnation of production sectors.

The government is politically stable, having survived assassination, external threats, domestic extremist attacks, and riots. Its general political orientation has been pro-Western, while simultaneously trying to regain leadership in the Arab world.

The Agricultural Sector

Egypt's cultivated area has been at about 6 million acres for many years. Virtually all is double-cropped. Agriculture's share of the labor force and GDP is declining. Major crops grown for domestic consumption are wheat, maize, horse beans, rice, sugarcane, and onions. Principal export crops are cotton, citrus, potatoes, and certain medicinal and aromatic plants. The main characteristics of the sector are a relatively small cultivable area, private ownership of landholdings, and the pervasive role of the government for traditional crops in providing key inputs, regulating certain crop prices, determining cropping patterns, and marketing certain crops.

Policy Goals

Egypt's economy is mixed, combining heavy state domination in many basic sectors with private investment in other sectors. Policy goals in the 1980's have centered on providing public sector jobs for a mushrooming labor force, maintaining an extensive safety net for lower income segments of the population (mainly through a system of consumer subsidies), and trying to open selected sectors of the economy to the rapid growth associated with Western technology and capitalism. During the 1960's, experiments with centralized planning and state-owned monopolies (combined with extensive price controls) led to a cumbersome, nonresponsive economy and massive structural distortions. Recent economic policies have focused on gradually shifting from subsidies and price controls while trying to maintain a tolerable level of living for the lowest income segments of the population.

Agricultural sector goals reflect the general economic goals. Crops and enterprises with heavy state regulation and participation have not maintained adequate growth rates; in fact, some have declined significantly (such as cotton, sugar, rice). As a result, agricultural self-sufficiency has slipped to about 50 percent and food security has become the primary policy goal, although some government officials still talk of food self-sufficiency. In the past, when the agricultural balance of trade was positive, the earning of foreign exchange was a policy goal. Food security has usually meant the maintenance of at least a 90-day supply of basic commodities, especially those foodstuffs which constitute the consumer subsidy system.

Agricultural Programs

Three ministries are heavily involved in the agricultural sector: the ministry of agriculture and land reclamation (MOALR), the ministry of supply and foreign trade (MOSFT), and the ministry of irrigation. MOALR generally oversees agricultural production programs, which include the provision of production credit, and selected inputs, crop rotation schemes, and the procurement (at fixed prices) of selected crops. Agricultural imports, however, are the domain of the MOSFT's general authority for supply of commodities. This agency has priority on scarce foreign exchange allocations and is directly charged with maintaining the nation's food security. The supply authority has a strong preference for long-term, bilateral trade agreements and also prefers to use countertrade as a payment mechanism whenever possible. In the 1980's, however, countertrade has largely been limited to protocols with eastern bloc nations. Foreign companies that propose countertrade are likely to be viewed favorably, although the government has not allowed it in the private sector. Countertrade occurs in cotton, rice, citrus fruit, potatoes, onions, garlic, aluminum, oil and refined products, textiles, linen, cement, and phosphates.

Agricultural Program Evaluation

Egypt's agricultural goals often seem to be inconsistent. A two-way trade occurs in several commodities (such as sugar and rice) because of the vested interests of government agencies. Rather than emphasizing the protection of rich valley and delta land, land reclamation authorities have favored large-scale, expensive, and noneconomical schemes to bring desert land into production. As a result, the less productive "new land" gains have continuously been offset by loss of fertile land to urbanization. The total land base has remained constant. Because the MOALR has frequently held official procurement prices well below world commodity prices, farmers have shifted to less regulated crops. Larger imports of crops which could be domestically produced have resulted. The nation's food gap is increasing and Egypt will not soon be self-sufficient. Fundamental structural reforms are needed before the sector can produce at its true agronomic potential.

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LIBYA

David W. Skully

Between 1961 and 1981, Libya changed from one of the world's poorest countries to one of the richest, as measured in per capita GNP terms. Prior to the beginning of petroleum exports in 1961, Libya subsisted on the sale of scrap metal from abandoned World War II military material, revenues from air bases, and foreign aid. Agriculture was the livelihood of most of the population, virtually all concentrated in two coastal strips near Tripoli and Benghazi, the only areas with significant rainfall.

Since the revolution of 1969 which deposed the monarchy and brought Muammar Qadaffi to power, the role of the government shifted from concentrating the oil revenue in the hands of the nobility to redistributing it to the population. Qadaffi's tough bargaining stance with multinational oil companies was the first step in breaking their oligopsonist hold on OPEC oil exporters and set the stage for the OPEC oil price increase brought on by the 1973 Arab-Israeli war. The oil sector accounts for 70 percent of GDP but only 2 percent of employment. Agriculture, in contrast, now accounts for only 2 percent of GDP, but 20 percent of employment.

Barley is the primary grain. Wheat is also produced, increasingly under irrigation as more resources have been invested in the exploitation of the large aquifers beneath the desert. Oil olives, dates, almonds, citrus fruits, tomatoes, potatoes, and garden vegetables are the other key agricultural products. Sheepherding, the traditional livestock activity, is being supplemented by intensive beef-feeding and dairy operations. Forage production is being encouraged and subsidized. Large advances have also been made in poultry and egg production.

The government has been active in expanding the arable land base through irrigating the desert. Most oil companies operating in Libya are required to devote a portion of their revenues to the discovery and extraction of underground water. The most ambitious project in this area is the world's largest diameter pipeline constructed to transport water from the southern Kufra depression to the northern population and agricultural areas. The objective of this pipeline is to make Libya completely self-sufficient in agriculture, technically feasible although costly. Several producer cooperatives have been established for most commodities. Many crops are procured at prices above world prices. Price subsidies achieve two objectives: increasing domestic self-sufficiency and improving rural incomes. Many inputs are subsidized. A domestic fertilizer industry was created, primarily to take advantage of petroleum byproducts, and irrigation water is generally supplied without cost.

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MOROCCO

David W. Skully

Wheat and barley are the mainstays of Moroccan agriculture. Significant quantities of fresh vegetables, citrus, other fruits, and their processed products are important exports. Agriculture accounted for 18.4 percent of GDP in 1985 and for half of all employment. The dominant economic policy goal is the reduction of deficits in trade and government. Morocco's substantial indebtedness has induced the government to seek ways to reduce imports and boost exports. Policies encouraging production of grains and export crops were adopted. Morocco produces only half its wheat, the mainstay of the diet. Wheat imports are consequently of vital political importance. Protectionist policies in the United States and the EC have made agricultural export expansion difficult for Morocco. In 1986, Morocco entered GATT to address these issues.

The Economy

Morocco's GDP was estimated at $11.9 billion at market prices in 1985. Its population numbers 21.4 million and is growing 2.5 percent a year. Per capita GDP is $610 dollars. Services account for half of GDP while industry accounts for 32 percent and agriculture for 18 percent. Value added per worker in the agricultural sector is roughly a fifth of value added in industry and services. Morocco has two-thirds of the world's known deposits of phosphates. Phosphate mining and processing of phosphate products comprise the largest extractive industry in the kingdom, and phosphate exports generally account for about half of export revenues. Manufacture of textiles, leather goods, chemicals, and processed agricultural goods accounts for about half of industrial value added.

Morocco is a constitutional monarchy. Much more oriented toward Europe than Africa, Morocco is formally applying for EC membership.

Agricultural Sector

Wheat is the foundation for the Moroccan diet and barley is the key supplement to livestock feed. Under European occupation, 1912-55, large estates in the level, well-watered lands were consolidated by European owners. Much of this land was irrigated in the 1930's and 1940's and resembles the California agriculture of the period. The European estates were nationalized after independence and remain under public control, although often leased to private managers. Most of the citrus fruit, rice, sugar, grapes, corn, and much of the vegetables are produced on irrigated estates. Wheat and forage are also produced under rotation and in conjunction with intensive livestock and dairy operations. The rain-fed sector, in contrast, is based on wheat and barley--lying fallow--integrated with sheepherding.

Wheat is the major agricultural import, with annual imports reaching as high as 3 million tons. There is little trade in barley, but corn, soybeans, and other oilseed products are imported as inputs to livestock and poultry sectors. Citrus fruit is the most important agricultural export. Fresh fruits and vegetables, olive oil, and wine are also exported, primarily to the EC, Eastern Europe, and the Soviet Union.

Policy Goals

The economic policies adopted at independence emphasized import substitution, industrialization, and public control of the phosphate sector and European agricultural estates. During the 1970's, the government began to borrow heavily abroad. Phosphate prices, which rose in line with oil prices, were expected to provide the revenue for repayment. In 1976, the price of phosphates plummeted and has remained low in real terms ever since. Also in 1976, Morocco occupied the former Spanish Sahara. The war of counterinsurgency and military occupation continues today and has been very costly to the economy. The value of arms imports, primarily from the United States and Western Europe, are not available. But these imports have clearly crowded out the use of foreign exchange for productive investment. In 1981, Morocco came under the scrutiny of the International Monetary Fund and commercial creditors. Attempts to cut subsidies on bread and other staples resulted in riots and were immediately rescinded. Reforms in the over 600 public enterprises have been encouraged, including complete privatization. To reduce Morocco's persistent trade deficit, trade has been significantly liberalized.

Morocco's overriding objective is to cut nonessential imports and encourage more exports, primarily by gradual removal of the price and credit distortions generated by trade restrictions and domestic subsidies and the reformation of the incentive structure of public sector estates.

Considerable attention is being given to increasing self-sufficiency in wheat production. Producer prices were raised and, under the auspices of the World Bank, more credit is being extended to small, rain-fed farms. All farmers are exempted from taxation through the year 2000. Consumer subsidies on wheat and wheat products are being raised gradually. The export monopolies for fruit and vegetables were disbanded and the incentive structures of publicly managed estates were reformed. Attempts to open up protected crops, such as sugar and rice, have yet to be implemented, primarily because of large investments in processing capacity.

Agricultural Programs

The economic austerity of the 1980's has forced Morocco to review the rather haphazard bundle of policies which evolved during the 1960's and 1970's. Insuring domestic food supply remains the primary objective. Keeping adequate emergency stocks, reducing imports, expanding exports, improving policymaking and analysis, and cutting inefficient public programs are the secondary objectives. Prior to the 1980's, credit, public investment, fertilizer subsidies, and other incentives were targeted to benefit large-scale irrigated agriculture and agro-industry. The political power of large landowners and managers of government estates accounts for the skewed distribution of public benefits.

The International Monetary Fund and the agricultural sector adjustment loan prepared by the World Bank both advocate reforms in the price and subsidy regime. The agricultural sector suffers from fewer distortions than does the rest of the economy. Within the sector, the rain-fed sector and cereals have had a negative rate of protection, while industrial crops have had positive rates of protection. In addition, an overvalued currency and inefficient public control of commodity trade have muted the transmission of world prices and have tended to increase imports and reduce exports.

The Office Nationale Interprofessional du Cereales et des Legumes (ONICL) is the public agency responsible for managing the supply of grain in Morocco. ONICL procures wheat from domestic producers at the official price. However, only about 10-15 percent of domestic production is purchased. ONICL controls imports of grain. During the 1980's, official producer prices have been equal to or greater than the world price. However, because of procurement rationing, the effective price to farmers has generally been about two-thirds the official price.

Competition between the United States and France for the Moroccan wheat import market by means of price and credit subsidies has lowered the import cost of wheat to about half of world prices, further inducing ONICL to import rather than procure domestically. Bread, wheat flour, and couscous (from durum flour) prices are all subsidized at a fraction of their cost. ONICL administers and regulates the margins of millers and bakers. These regulations have tended to discourage local procurement and encourage reliance on ONICL as a supplier. Under the agricultural sector adjustment program, ONICL operations are to be revised to be more responsive to market forces.

Consumer subsidies on vegetable oil and an administrative bias toward imported soy and other oilseeds have adversely affected the realization of Morocco's oilseed production potential. Reforms paralleling those for wheat are to be implemented for oilseeds.

Large subsidies for the production of sugar beets and distortions in the price regime for wheat milling products led to prices for beet pulp and wheat bran substantially below their resource costs. The implicit subsidies on these feed items led to distortions in the feed, fodder, and livestock sectors. In particular, it inhibited the production and marketing of forage crops which, in turn, led to growing imports of corn. The government recently began raising the prices of beet pulp and bran and research is underway to devise feed rations which would minimize imports and encourage local feed use and production.

Under the sectoral adjustment program, the dairy industry is being gradually deregulated. Surplus disposal programs by the EC and the United States continue to distort prices and induce imports of nonperishable dairy products. In 1981, consumer subsidies on milk were removed and consumption dropped substantially. The existing physical plant, however, is geared to the subsidized price regime. Current policy is to allow a period of adjustment without placing milk processors out of business.

Agricultural Program Evaluation

External economic forces have forced Morocco to liberalize its economy and rationalize its agricultural sector. The implementation of return, however, depends on a bureaucracy which is held in check by the king and the powerful economic interests which court his favor. The direction of change is toward an open economy; the rate of their changes depends on domestic power struggles.

Suggested Reading

Economist Intelligence Unit. Morocco to 1992: Growth Against the Odds. November 1987.

TUNISIA

David W. Skully

Tunisia's agriculture is based on wheat--the dietary staple--and barley, integrated with sheep and cattle. Olive oil, wine, citrus, and other fruits are important exports. Agriculture contributes 13 percent of GDP and accounts for roughly a third of all employment. The primary policy goal in agriculture is to insure an ample food supply. Consumer subsidies and a relative neglect of rain-fed grain production have led to increasing imports of wheat and feed grains. Its poor external financial position brought about the intervention of the International Monetary Fund and the World Bank. Policy reforms are underway to remedy the imbalances in the agricultural sector. Tunisia can produce economically most of what it presently imports. Tunisia has been a regular importer of U.S. wheat, corn, nonfat dry milk, and cotton. Most U.S. agricultural exports to Tunisia are subsidized either through PL 480 or other quasi-commercial programs. The United States views Tunisia as an important, moderate, and strategic ally.

Economy

Tunisia's GDP is estimated at $8.3 billion (1985 dollars). Its population is 7.3 million people with a per capita GDP of about $1,150. Tunisia is an oil exporter. Hydrocarbons account for 8 percent of GDP, agriculture for 13 percent, manufacturing for 15 percent, and services for 43 percent.

Tunisia is a secular republic modeled along French lines, with a representative legislative body and president. President Habib Bourguiba dominated policies in Tunisia. He was Tunisia's political leader for over 50 years. In November 1987, he was removed from power in a peaceful coup d'etat. It is not clear what this change in government will mean for agriculture. There is significant and suppressed opposition by labor unions and Islamic fundamentalist groups.

Tunisia has a mixed economy. There are many state-owned industries and agricultural estates. Private ownership is extensive but highly regulated. The country reached a peak of socialist intervention in 1970. But, under increasing opposition, Bourguiba dismissed the activist ministers and the economy has since become increasingly privatized and deregulated. The International Monetary Fund and World Bank policy prescriptions of the 1980's call for further reliance on market forces and the privatization of parastatals. Direct investment by citizens of the capital surplus nations of the Persian Gulf has benefited Tunisia. Tunisia is regarded as one of the most secure and least regulated Arab nations. The inflow of capital accelerated after the outbreak of hostilities in Lebanon in 1975.

The Agricultural Sector

Under the European occupation 1881-1956, most of the best land in the well-watered northern and coastal regions of Tunisia were expropriated by

Europeans. At independence, the European lands were gradually shifted to state or private Tunisian ownership. Large, mechanized, irrigated farms have garnered the bulk of public expenditure on agriculture: water projects, fertilizer subsidies, high-yield varieties, and marketing infrastructure. The rain-fed grain and sheep smallholder economy of central and southern Tunisia, in contrast, has had little political power and has been generally ignored. Development assistance by the Food and Agriculture Organization, U.S. aid, the World Bank, and other organizations has been directed to the smallholder sector.

Wheat and barley are the dominant grains and account for most of the cultivated area. Tunisia is no longer self-sufficient in wheat. Citrus, date, olive, and almond exports provide an important source of foreign exchange. As the export market for wine has become increasingly protected, vineyard area has declined. Tunisia has been granted a wine export quota by the EC in partial compensation for loss of trade preferences following the entry of Spain and Portugal into the EC. A wide diversity of fruits and vegetables are grown and marketed with few restrictions. The development of a cattle and dairy sector has been inhibited by the availability of subsidized beef and dairy products from Europe. The Tunisian poultry sector was officially encouraged and developed rapidly in the 1980's. Tunisia is now self-sufficient in poultry; eggs and poultry meat are exported. Poultry production depends on imported feed, primarily U.S. corn and Spanish soymeal. Soybeans and soybean oil are imported for crushing and blending with olive oil.

Policy Goals

Tunisia is often grouped with Brazil, Thailand, and South Korea as nations pursuing a relatively open export-oriented program of economic growth. Tunisian real economic growth was sustained at 6 percent during the 1970's. However, it slowed substantially in the 1980's. The infusion of liquidity from oil export revenues and negative real interest rates in the 1970's made an externally leveraged growth policy a reasonable choice. Higher interest rates, protectionism in Western industrial markets, and soft oil markets helped precipitate the current crisis in Tunisian policy. Several structural features of the Tunisia economy inhibit rapid adjustment. Perhaps the most important is the the Tunisian national labor union which includes most urban workers. It is a formidable political force and has been able to prevent any erosion of real industrial or rural wages. The union has also been a leader in the opposition to any reduction in consumer price subsidies. The downward rigidity of real wages has diluted Tunisia's export competitiveness and helped inflate the budget deficit. The overvaluation of the Tunisian dinar in the 1980's has also been detrimental to the commercial balance.

The policies adopted in the early 1980's reflect a concern with sustaining domestic employment rather than sustaining competitiveness. Import restrictions were imposed to protect jobs and reduce the external deficit. Because imported inputs comprise a significant proportion of most Tunisian exports, these policies further hindered export competitiveness. Finally, in 1985, a foreign exchange shortage occurred. Most imports were suspended, precipitating temporary plant closings in the industrial sector. IMF intervention relaxed the foreign exchange constraint somewhat.

The current policy regime is an attempt to reduce many of distortions institutionalized by earlier policies. Nominal wages increases have been restrained, and a gradual reduction of consumer subsidies has helped to further erode real wages. The dinar has been devalued. Several public enterprises are slated to be privatized and foreign investment regulations have been liberalized to encourage a greater private capital inflow.

Agricultural Programs

The deterioration of Tunisia's external accounts has hastened policy reform in the agricultural sector. Subsidized sales of wheat, feed grains, and dairy and livestock products by Tunisia's primary agricultural suppliers (the EC, the United States, and Canada) have induced the government to rely more on imports and less on domestic procurement than under perfectly competitive conditions. Recent supply-side actions, such as the devaluation of the dinar, the significant increases in producer grain prices, and subsequent higher marketed surplus ratios, indicate that agricultural policy during the next several years will actually try to realize greater self-sufficiency in agriculture. On the demand-side, reductions in subsidies on bread, milk, vegetable oil, and meat are curtailing excess demand. Under normal weather conditions, these policies are likely to reduce Tunisia's wheat imports by several hundred thousand metric tons.

The World Bank's structural adjustment program for agriculture, as well as U.S., Canadian, and Australian aid, and a variety of European programs, are focusing on improving the availability of credit, inputs, high-yield and drought-resistant varieties, and better marketing facilities to smallholders in the rain-fed central and southern regions. Management reform and privatization of former European irrigated perimeters are likely to improve resource allocation. Efficiency gains in both the rain-fed and irrigated areas are likely to reduce significantly Tunisia's agricultural imports. Tunisia is likely to remain dependent on external sources for a large proportion of its animal feed supplies.

Agricultural Program Evaluation

External economic factors have forced Tunisia to take positive policy actions in the 1980's. The Tunisian government may propose a significantly different policy mix. The external factors presently pushing Tunisia toward fiscal austerity and more reliance on market forces are not likely to recede, and the financial surplus required for nonmarket policy innovations do not exist. Therefore, it is unlikely that policy, under any leadership, will stray far from the path advocated by the World Bank and the International Monetary Fund.

Suggested Reading

American University. Tunisia: A Country Study. Foreign Area Studies, 1988.

REGIONAL SUMMARY OF OCEANIA

Paul Johnston and Michael Lopez

The 22 countries and territories of Oceania are so varied in population, size, geological origin, products, and dependence on agriculture that it is necessary to divide them into classes. They are: large modern economies (Australia and New Zealand), islands with predominantly nonagricultural economies, and islands with predominantly agricultural economies. Most islands are volcanic. Australia, New Zealand, and two other islands have a continental geology. The Polynesian group is primarily coral. Populations range from the 62 descendants of the ship Bounty on Pitcairn Island to about 16 million in Australia.

Large Modern Economies

Australia's continental mass houses a mostly urban population, with a per capita income of $10,000. Only about 6 percent of its labor force works on farms, producing 4 percent of GNP. Nevertheless, farm products constitute a third of Australia's exports. Grains, sheep, and grass-fed beef cattle are the principal agricultural industries. Dairy, poultry, hogs, sugar, fruits, cotton, and vegetables also are important. The country's agricultural programs reflect a tradition of regulation and light assistance. The level of assistance is declining as efficiency becomes a greater priority in government policy. Statutory marketing authorities, with responsibilities ranging from promotion to control, operate for many agricultural products. Two-tiered pricing schemes, which hold domestic prices above world prices, are in effect for such products as rice, sugar, eggs, tobacco, and cotton. Domestic wheat prices now more directly reflect world prices.

New Zealand, with about a fifth the population of Australia, is endowed with better watered and more fertile land. It has nearly twice the portion (11 percent) of its labor force in agriculture, and 65 percent of its exports are based on farm products. Sheep and dairy and beef cattle on pasture dominate New Zealand's agriculture. However, it is rapidly diversifying into horticulture, goats, deer, and field crops. Since 1984, agricultural policy has relied on market forces to allocate resources. As in Australia, marketing boards are believed to enhance this small country's market influence by preventing price competition among its exporters and by protecting its quality image. New Zealand's per capita income is $8,000.

Islands with Predominantly Nonagricultural Economies

French Polynesia, Guam, New Caledonia, Nauru, and Christmas Island are distinguished by their tiny agricultural sectors, ranging from virtually none on Christmas Island and Nauru to less than 4 percent of GDP in French Polynesia. Instead, French Polynesia and Guam earn most of their incomes from military activities (nuclear testing stations, air and navy bases) and tourism. The rest earn almost all their income from mining (nickel in New Caledonia, phosphates in Nauru and Christmas Island). Island economies in this group have high per capita incomes, ranging from about $6,800 in French Polynesia to $20,000 in Nauru. These five economies had a total population of 432,000 in 1984.

In French New Caledonia, sputtering independence insurrections are one motivation for a government plan to purchase and return large quantities of land acquired by expatriates to Melanesian clans. In Guam and French Polynesia, where the social and economic distinctions between indigenous and expatriate populations are far less sharp, agricultural policy is a low priority issue. There is no agricultural sector, hence no policy, in the two minuscule phosphate islands.

Islands with Predominantly Agricultural Economies

Among the 15 islands and archipelagos in this class, Papua New Guinea and Fiji contain three-fourths of the nearly 5.5 million people, while Papua New Guinea and the Solomon Islands comprise four-fifths of the land. In the six economies with more than 100,000 population--Papua New Guinea, Fiji, Solomon Islands, Western Samoa, Vanuatu, and Tonga--per capita incomes ranged from about $550 to $1,800 in the early 1980's. In these six economies, 50-90 percent of the people earn their living by raising subsistence and cash crops. Sugar, from cane to processing, is the major crop of the Fijian economy. Coconuts are the principal crop outside of Fiji and Papua New Guinea. Other commonly grown products include fruits and vegetables, root crops, and livestock (usually pigs and poultry). Timber, coffee, cocoa, and palm oil are also important cash crops on the larger islands. The importance of coconuts varies both absolutely and relatively. In Tonga, they take up three-fourths of the cropland. In Papua New Guinea, coconuts rank below coffee and cacao as a cash crop, even though coconut production is about 20 times the level in Tonga. Papua New Guinea's size--nearly 500 times the area of Tonga, with about 33 times the population and GDP--helps explain the difference.

Common agricultural policy goals include economic growth, more crop exports or reduced food imports, a more stable income from agriculture, and a more equitable distribution of income. Means to achieve these goals include programs to replace over aged trees in coconut and other plantations, research and extension services, rural roads, subsidized credit, price and tax incentives, marketing boards, crop diversification, redistribution of land from expatriate to indigenous owners, and reform of land tenure laws.

Geographic conditions influence agricultural programs. For example, rural roads are more important on large islands, while crop diversification is more important on small islands. Diversification, a principal goal for all but the already highly varied agricultural economy of Papua New Guinea, is especially important in Fiji and Tonga, whose dependence on single crops makes their economies susceptible to price swings. Coconut oil prices are highly volatile; they can double from one year to the next, and drop by half in the following year. Sugar prices are almost as unstable.

In several island economies, high minimum wages in urban and mining areas have attracted a large portion of the rural population, leading to severe urban unemployment. Improvement in rural incomes is sought to reduce migration to towns. None of these islands' development plans forecast a major reduction in the percentage of their labor force in the subsistence sector. Thus, successful agricultural policies are a prerequisite for improving the living standards of the majority of their people.

Suggested Readings

American University. Oceania: A Regional Study. Foreign Area Studies (Frederica M. Bunge and Melinda W. Cook, editors), 1985.

Central Intelligence Agency. The World Factbook, 1986. CRWF 86-001, 1986.

SUMMARY TABLE FOR SMALL ISLANDS

This report does not contain individual articles for the 11 island economies in Oceania which have fewer than 100,000 inhabitants apiece. Instead, the following table presents summary data.

Small island economies with populations of fewer than 100,000

Country or territory	Type of government	Area	Population	Gross domestic product	Per-capita income	Major crop or mineral	Major rural exports
		Sq. mi.	1,000	Mil. US$	US$		
Christmas Island	Australian territory.	52	3	NA	NA	Phosphates.	Phosphates.
Cook Islands	"Free association" with New Zealand.	13	18	15	860	Copra, citrus, pineapples, tomatoes, bananas, yams, taro.	Copra, citrus, pineapples, tomatoes.
Kiribati	Independent, 1979; member of Commonwealth.	714	63	25	417	Copra, eggs, poultry, vegetables.	Copra.
Marshall Islands	Self-governing republic, 1986; "free association" with United States.	7	31	NA	NA	Copra, trocas shells.	Coconut oil, copra.
Nauru	Independent, 1968; associate member of Commonwealth.	8	8	160	20,000	Phosphates.	Phosphates.
Niue	"Free association" with New Zealand.	100	3	3	1,080	Coconuts, honey, limes, passion fruit.	Canned coconut cream, copra.
Norfolk Island	Australian territory.	13	2	NA	NA	Kentia palm seeds, vegetables, fruits, cereals.	Norfolk Island pine seeds, Kentia palm seeds.
Palau	Trust territory of the United States.	178	12	12	2,630	Vegetables, root crops.	Negligible.
Pitcairn Island	British colony.	19	.06	.7	11,920	Fruits, vegetables, sugarcane, poultry.	Fruits, vegetables.
Tuvalu	Independent, 1978; constitutional monarchy under Great Britain.	10	8	4	450	Coconut palm.	Copra.
Wallis & Futuna	French overseas territory.	106	12	NA	NA	Copra, taro, yams.	Negligible.

NA = Not available.
Sources: See preceding "Suggested Readings."

AUSTRALIA

Sally Byrne

Australian agriculture's enduring problem is access to foreign markets. Extensive production of grains, sheep, and beef cattle is dominant. Dairy, poultry, hogs, sugar, fruits, cotton, and vegetables are other large agricultural industries. Assistance to agriculture is low by world standards, but regulation is heavy. Exports account for two-thirds of the value of agricultural output. Australia is the sixth largest agricultural exporter.

The Economy

Australia's GDP totals about $160 billion, or $10,000 per capita. The services sector has grown most rapidly since World War II and mining is expanding. Manufacturing's share of the economy has declined to 17-18 percent and agriculture has fallen to 4 percent. Australia is one of the world's most urbanized countries. Australia has a parliamentary form of government and a long tradition of democracy. Powers are divided between the federal and six state governments. Government authority over the economy is much greater than in the United States.

The Agricultural Sector

About 400,000 Australians, 6 percent of the labor force, work on farms. The average size of the 171,000 farms is 2,800 hectares. Only 18 percent are larger than 2,000 hectares and 19 percent are smaller than 200 hectares. Most farms raise both wheat and sheep or beef cattle, or all three. Almost all ruminant animals, including dairy cattle, graze on pasture with little if any feeding of grain.

Wool is Australia's top-ranking agricultural product by value. Sales of sheep and lambs for slaughter or export are a significant income source on sheep properties. Beef production is the second largest agricultural enterprise by value of output. Wheat is the major crop raised. Australia has a large dairy industry. Coarse grains, poultry, hogs, sugar, fruits, cotton, and vegetables are other important industries.

Grains, wool, and beef account for two-thirds of the value of agricultural exports. About four-fifths of the wheat and barley produced is exported as is almost three-fourths of sugar, rice, and cotton; half of the beef; and nearly all of the wool. Australia is the world's third largest wheat exporter, the largest beef and wool exporter, and a major supplier of rice, coarse grains, cotton, and sugar.

Policy Goals

The first priority of economic policy is prosperity for all Australians. Economic efficiency, although becoming a more important priority, is sacrificed to achieve an acceptable distribution of income and wealth. Australian manufacturing industries are protected by high tariffs. Economic hardships of the 1980's have forced Australia to reassess those policies which reduce incentives to productivity and growth and harm the competitiveness of its export industries. The present government's policies have been directed at achieving sustained, broadly based economic growth, restraining inflation, and enhancing Australia's ability to compete on world markets.

Until the early 1970's, the principal agricultural policy goal was to increase production to create foreign exchange earnings. The second goal was to improve efficiency, primarily to increase production. Providing farmers modest protection and reduced risk was another goal. In the 1970's, low farm product prices forced a shift in policy priorities toward enhanced efficiency. This thrust for competitiveness in export markets is gaining strength. Meanwhile, producers continue to receive some protection from market forces. Australia's major international policy goal for agriculture is maintenance and improvement of market access for its products.

In 1986, the government published a comprehensive statement of agricultural policy. The goals outlined will provide the basis for agricultural policy through the 1980's. Macroeconomic policy will not be a tool of agricultural policy. Protection of manufacturing is being reduced, and greater restraint is being imposed on labor costs. The government is working to improve the efficiency and productivity of the handling and transportation systems. Australia is aggressively seeking multilateral trade liberalization. The government is enhancing support to the marketing of agricultural products and exerting pressure to improve marketing efforts. Adjustment assistance is expanding and research and development programs are being improved. Price support programs and underwriting arrangements are gradually being made consistent with underlying market trends.

Agricultural Programs

The primary means toward achieving enhanced comparative advantage through efficiency is provision of a low level of assistance to agriculture. Protection of manufacturing is being curtailed and amended to remove distortions forced on agriculture. Tariffs on agricultural inputs are being replaced by subsidies to domestic manufacturers.

Agricultural programs reflect Australia's tradition of government involvement in the economy. While assistance levels are generally low, varying among commodities, agriculture is heavily regulated. Statutory marketing authorities operate for many products; their involvement ranges from assistance and promotion to absolute control. Domestic prices for dairy products, wheat, rice, sugar, eggs, tobacco, cotton, and some fruits at times may be above export prices. Numerous trade restrictions are imposed to protect Australian farmers. Imports of many products are effectively barred by phytosanitary regulations. Sugar imports are embargoed. Tariffs are low for most items. Special agreements severely limit imports of New Zealand meats and dairy products.

The six Australian states have a substantial role in agricultural policy. The Australian constitution limits the authority of the federal government over production and marketing. Thus, cooperation and complementary legislation by the states are necessary to implement most programs.

The Australian Wool Corporation and a representative grower body set a minimum reserve price for wool each season. The corporation, financed by grower levies, maintains wool prices through market intervention and stockholding. It also promotes wool on domestic and overseas markets.

The Australian Meat and Livestock Corporation promotes beef and sheepmeat for both domestic and import markets. It also allocates quotas among private exporters when countries, except Japan, impose quantitative import restrictions. Egg production and marketing are highly regulated via hen quotas, price setting, and pooling of returns.

The dairy industry is heavily controlled. Each state sets fluid milk prices and controls sales; fluid milk is rarely traded between states. The Australian Dairy Corporation has broad authority over production and marketing of dairy products. It controls exports, promotes dairy products, and administers the levy and underwriting programs. New dairy marketing arrangements enacted in July 1986 represent a significant move toward greater market orientation. A levy on milkfat production is gradually replacing domestic consumption levies. Incentives have been restored for exporting firms to maximize returns.

The Australian Wheat Board is the sole seller of most domestic and all export wheat, signs long-term agreements with foreign buyers, and engages in aggressive promotion efforts. Wheat must be delivered to agents of the board unless it is retained on the farm, used for seed, or sold for livestock feed under a board permit. A Bulk Handling Authority in each state is the principal receiving agent. The Australian government underwrites a set of guaranteed minimum prices which reflect trends on the world market while providing a cushion to growers.

In New South Wales, where 97 percent of Australia's rice is produced, state controls on irrigation water supplies affect the area planted to rice. In Queensland, state law provides for production quotas. A statutory marketing board acquires the crop in each state.

A large part of Australia's fruit industry is controlled by marketing boards. Substantial benefits accrue to producers from discriminatory pricing arrangements, stabilization schemes, and tariff protection. Potatoes are protected by marketing boards in some states.

Sugar production and marketing are tightly controlled. Annual production quotas are set for each mill. Mill quotas are then apportioned to individual growers. Returns are paid from three quota pools and above-quota sugar receives $A1/ton payment. All sugar is acquired by the Queensland government including New South Wales' small output. The Queensland government has sole authority to sell sugar on the domestic and export markets. The Sugar Board acts as its agent. The Australian and Queensland governments are implementing a 3-year price support scheme to encourage restructuring of the industry.

Agricultural Program Evaluation

In aggregate, Australia's agricultural programs have imposed minor distortions on resource use. Many observers believe that the country's overall economic and social policies disadvantage agriculture, causing resources to leave productive farming. State production/delivery quotas and marketing restrictions distort resource use in several industries. Many other agricultural and infrastructure programs affect resource use. For instance, disaster relief programs during the 1982/83 drought may have disadvantaged those livestock producers who had conserved fodder.

Because virtually no fluid milk is traded across state borders, the Victorian milk industry is smaller than it could be and other states' industries are larger. Fluid milk quotas artificially encourage milk production during the winter months, tying up resources. Sugar producers may raise sugar only on assigned land. They cannot use other fields even if they would be more productive. Changing or transferring land assignments is difficult and expensive. These restrictions severely limit movement of land resources into sugar, encourage heavier use of other inputs, and raise costs.

State-by-state and regional hen quotas distort resource use in the egg industry. Productivity per hen is increasing substantially. The quotas, together with marketing arrangements, maintain production in some high-cost locations. Tobacco production quotas have similar effects.

Various production and marketing controls affect the distribution of agricultural output. Wheat is the only field crop to receive a price guarantee underwritten by the government. Wool is protected by price guarantees via the Australian Wool Corporation. Thus, in periods of falling prices or price uncertainty, wheat and wool production are favored over competing grains, oilseeds, and meat.

Australia is a low-cost producer of a wide range of temperate-zone products, and its trade patterns would be similar in the absence of controls. However, important exceptions exist. Imports of dairy products and tobacco could be substantial. Lamb would be periodically imported from New Zealand. Australian sugar exports could be larger. Imports, however, would probably be nil if the embargo were lifted. The wheat price guarantee favors wheat exports over coarse grains. Government-sponsored export inspection services increase buyers' confidence and assist exports. Analysts differ in their assessment of the role of marketing boards on the world market. Australia believes the boards give a small supplier greater clout. A sole seller maximizes returns to all producers; individual exporting firms may lower prices by bidding against each other. On the other hand, a marketing board may lack entrepreneurial drive and overlook market opportunities.

Australia's strong competitive position on world agricultural markets is one measure of the success of its agricultural programs. The country's recently strengthened drive for efficiency could lead to significant gains in the next decade. The present GATT negotiations provide the opportunity for Australia to work toward its international priority of improved market access.

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FIJI

Nina Swann

Fiji, comprised of more than 300 coral atolls and volcanic islands with a total area smaller than Massachusetts, has maintained a parliamentary democracy since its independence from Great Britain in 1970. Over 93 percent of its 715,000 people live on two islands. In 1984, Fiji's GDP was $1.3 billion. Fijians have one of the higher per capita incomes in the South Pacific, about $1,800. However, in the early 1980's, the 1.4-percent growth rate of GDP did not keep pace with the 2-percent population growth rate.

The nation's economy is based on sugar, tourism, trade, banking, and government services. Its manufacturing sector, excluding sugar processing, accounts for less than 10 percent of output. The agriculture, fishery, and forestry sector contributes 18-20 percent of GDP, employs nearly 65 percent of the labor force, and generates about 40 percent of total export earnings. Sugarcane is grown and cut by some 21,000 independent small farmers who sell their crops to the Fiji sugar corporation for processing and export. However, the majority of Fijians subsist by producing root crops (taro, cassava, and yams) or by fishing, supplemented by the sale of coconuts or copra.

Sugar accounts for 70-80 percent of agricultural exports. Other agricultural commodities grown primarily for export are ginger, coconuts, passion fruit, oranges, pineapples, and coffee. Wood products have been exported in small quantities. Commercial fishing has declined in importance because of inefficient vessels and inadequately trained crews. Fiji's principal imports in 1984 were manufactured goods (24 percent), machinery (20 percent), and foodstuffs and fuels (each 16 percent).

The general goals of the country's development plan are to encourage economic growth and to promote a more equitable distribution of income and wealth in the rural sector, particularly among native Fijians. While it calls for agricultural diversification, the current ninth plan continues to rely heavily on sugar and tourism for economic growth. Higher yields, coupled with a small increase in planted area, are expected to raise sugar production from its present level of 485,000 tons to between 555,000 and 610,000 tons in 1990.

An important constraint on agricultural growth is the limited availability of rental land because of Fiji's communal system of land tenure. Landownership is restricted to clans of indigenous Fijians. Fijians of Indian descent, who grow most of the sugar, are allowed only to lease farmland (typically under 10-year contracts). Farmers' limited managerial skills have also made it difficult for the government to implement projects involving smallholders.

Continued reliance on sugar as the major agricultural component of GDP and a major source of foreign exchange is subject to many risks: price instability in the short run and a possible downward price trend in the long run (due to low growth rates of sweetener consumption in developed countries and competition from substitute sweeteners). Moreover, Fiji's economic growth, based on sugar and tourism, has provided limited employment and caused great income disparities. Expansion of manufacturing, tourism, and primary sector activities such as timber and fisheries could help alleviate underemployment, as well as reduce the risks of dependence on sugar.

FRENCH POLYNESIA

Carmen Nohre

French Polynesia is an overseas territory with representatives in the French parliament. Governing responsibility is shared by a French high commissioner and a popularly elected territorial assembly. The most important components of the economy are government establishments, particularly the Pacific Test Center, and tourism. They have been the principal contributors to the territory's rapid economic growth. Both have greatly stimulated the construction sector. The metropolitan French government provides social services, including support for secondary schools, grants for capital investment, and direct subsidies to the territorial budget. All manufacturing is for local consumption or for the benefit of tourists. Industries include textiles, food processing, breweries, and handicrafts, all on a small scale.

With development, agriculture has declined in relative importance to the point that it contributes less than 4 percent of GDP. By the early 1980's, about 85 percent of all food consumed in the territory was imported. The most important commercial crop is coconuts, produced mainly on smallholdings. Copra and copra oil are the principal exports from the territory. Although vanilla output has declined, it remains among the few export commodities, along with cultured pearls. Other primary products are coffee, vegetables, and fruits for domestic consumption. There is a small livestock industry. Fishing is mainly by indigenous Polynesians to supply the local market and to supplement family food supplies. Japanese, South Korean, and Taiwanese fishing fleets have been authorized to operate in territorial waters.

There is some concern that the French government has fostered the growth of a superficially modern economy excessively dependent on imports, subsidies from France, and uncertain international tourism. The French government, in turn, has stressed the importance of developing the productive sectors of the economy in its economic planning.

GUAM

Michael Lopez

Guam is an unincorporated U.S. territory, with a democratic local government patterned on the U.S. Constitution. The people of this 30-mile long, 209-square-mile island are U.S. citizens. Agriculture plays an insignificant role in the overall economy, contributing only 0.2 percent to gross business income in 1982. Tourism is the most important private business, with more than 80 percent of the visitors coming from Japan. U.S. naval and air bases play a central role. In early 1984, servicemen and their dependents constituted 23,000 of the total population of 116,000. Military expenditures totaled $300 million, compared with an island gross business income of $1,300 million. There were 10,899 active servicemen, compared with a local civilian labor force of 33,490. Of the latter, 16,000 were nonmilitary employees of the Guam and U.S. Federal governments.

The tiny agricultural sector concentrates on perishable fresh products: fruits, vegetables, and meats. Even so, many perishables as well as virtually all staple foods are imported. Agricultural output in 1984 was valued at $5.7

million, including $3.7 million of fruits and vegetables, $1 million of pork, $902,000 of eggs, $70,000 of chicken, and $56,000 of beef. Production of fruits and vegetables, pork, and chicken is fairly stable, though subject to occasional devastation by typhoons. Production of eggs and beef is steadily declining.

The government's agricultural strategy is to foster production of the few high-value perishables that can compete in Guam's economy. Measures include phytosanitary inspections of imports to protect the island from alien insects, a melon-fly eradication program, provision of marketing information, disaster relief after typhoons, and animal husbandry research and extension. The government started operating a fish hatchery in 1984 to help promote aquaculture. The minuscule scale of Guam's agriculture should be kept in mind. For example, aquaculture ponds were expected to total 105 acres and the 1984 farm operating loan program benefited all only six farms. In 1986, Guam residents received $5.9 million from child nutrition programs, food stamps, and similar USDA programs, which stimulated food demand.

The island's scant land resources (a third of which are owned by the U.S. military) and competition for labor from high-paying government and private sector service jobs make it sensible to concentrate agriculture on high-value perishables. There are few options. Military commissaries, especially those of the air force, could buy more of their produce in local markets. The government, which currently rents surplus landholdings to farmers for a nominal charge, is considering charging market rates.

Suggested Reading

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NEW CALEDONIA

Carmen Nohre

New Caledonia is a French overseas territory with representatives in the French parliament. Governing responsibility is shared by a French high commissioner and a popularly elected territorial assembly. A well-developed mining sector dominates the economy and has brought a prosperity exceeding that for most southwest Pacific countries and territories. In recent years, New Caledonia was the world's second largest producer of nickel, exceeded only by Canada. Large deposits of other minerals also exist. Nickel exports provide the bulk of the territory's export earnings.

Agriculture accounts for about 3 percent of GDP. Large areas are devoted to cattle grazing with domestic production providing about 60 percent of beef consumption. Crops include coffee, corn, wheat, and vegetables. The territory not self-sufficient in food, imports both animal and vegetable products. Commercial fishing is relatively undeveloped.

Because mining is so dominant, little attention has been given to agriculture and fishing. The French government has repeatedly affirmed its commitment to promoting investment in these sectors, acknowledging that they may provide a more stable basis for economic. Political tension between groups favoring independence and a sizable European minority (37 percent of the population) have made it difficult to develop effective programs.

Land tenure and land reform are important issues. During the period of settlement by Europeans, much of the land occupied by native Melanesians came under the control of immigrants. In 1980, Europeans owned almost all of the 444,000 hectares of privately held land (23 percent of the total). Fifty-seven percent was in the public domain and 20 percent was held communally by Melanesian clans. Restoration of ancestral land is an important component of Melanesian nationalism and is considered an essential step by Melanesians in reestablishing their culture and way of life. The Land Administration of New Caledonia and Dependencies was established in 1982, with the goal of eventually restoring a large portion of these ancestral lands by government purchase and distribution.

NEW ZEALAND

Sally Byrne

New Zealand is in transition from a tightly controlled economy to an open, market economy. Agriculture's dual challenge is adjusting to radical policy changes while improving market access for its exports. Production of milk, wool, and ruminant meats depends on New Zealand's abundant grasses. Sixty-five percent of the country's exports is based on agriculture. New Zealand is a major world supplier of meats, wool, dairy products, and fruits and vegetables.

The Economy

GNP totals about $21 billion, $8,000 per capita. Agriculture accounts for 7 percent and manufacturing a fourth of GNP. The services sector continues to expand. The New Zealand economy relies heavily on exports because of its small domestic market and dependence on imports. A fourth of GNP derives from exports, compared with a tenth for the United States.

The government has closely managed the economy and owned important basic industries. Since July 1984, however, controls and regulatory intervention in the economy have been rapidly scaled back and corporatization of government enterprises is proceeding quickly.

New Zealand has a parliamentary government. Most authority resides at the national level of government. New Zealand's political system is stable, with a long democratic tradition.

The Agricultural Sector

Agriculture employs about 145,000 people, 11 percent of the labor force. The 79,000 farms average 270 hectares. About half are under 60 hectares and fewer than a fourth over 200 hectares. Only 0.5 million hectares of farmland are planted to crops, orchards, and nurseries. New Zealand's agriculture is based on grass pastures, two-thirds of which are improved. Phosphate fertilizer is an important input. Irrigation is rare, except in horticulture. Supplemental feeds--hay and silage--are provided to livestock for 2-3 months during the winter.

On the steep hill country, farmers graze sheep and cattle for meat. In less rugged areas and the coastal plains, dairying, cropping, and horticulture are primary enterprises. Horticulture predominates in coastal regions. Dairy herds average 150 cows, and the average sheep herd is 1,700 animals.

Milk, wool, beef, and sheepmeat account for 60 percent of agricultural output, down from 70 percent in the mid-1970's. New Zealand agriculture is rapidly diversifying, primarily into horticulture but also goats, deer, and field crops. Farmers are improving productivity through better management; for instance, dairy calves are now raised routinely for beef production.

Production of fruits, vegetables, and other horticultural products has expanded substantially since the late 1970's, and New Zealand has achieved considerable success in developing new markets for horticultural products.

New Zealand agriculture is export-oriented. Three-quarters of the milk and beef produced is exported, as is 95 percent of the lamb, virtually all the wool, and almost two-thirds of mutton and fresh-market apple production. Dairy products, wool, sheepmeat, and beef account for 80 percent of the value of agricultural exports. Exports of fruits and vegetables rose from 3 percent of the total in 1979/80 to 7 percent in 1985/86. Another major trend is expanded exports of processed products such as high-value meat cuts and manufactured products such as wool clothing and carpets.

New Zealand is the world's predominant exporter of sheepmeat and the second largest wool exporter. It is the third largest beef exporter and a major U.S. supplier. New Zealand is the second largest exporter of dairy products after the European Community.

Policy Goals

New Zealand's post-war economic policy priority was to achieve economic growth and secure balance of payments equilibrium through the expansion of agricultural exports. Employment took priority over price restraint. Industry received substantial protection from import licensing and tariffs. Rigid controls on the financial system backed the economic program.

Inefficiencies and high costs throughout the economy jeopardized the country's prosperity. New Zealand's economic growth had lagged behind other developed countries since the oil price shock of the early 1970's and severe inflation had become endemic to the economy. Limited relaxation of protectionism began in the early 1980's. In July 1984, a new government took office and launched a broad reform of economic policy. The priority of the new program is to improve economic performance by optimizing resource allocation. Economic efficiency is to be improved by minimizing government intervention and altering its nature. Reform of agricultural policy and removal of subsidies are crucial components of the new economic program. Assistance to agriculture was highly visible and readily dismantled, so this sector is feeling the full force of adjustment.

In the 1970's, major programs were implemented to provide incentives to expand agricultural production. These programs included concessional credit for farm expansion, tax incentives, and guaranteed prices for the major pastoral products. In the early 1980's, New Zealand meat and dairy product exports faced intense competition from subsidized exports. Then, world demand weakened. High processing costs were damaging New Zealand's competitive position on world markets. Thus, price supports and marketing board interest concessions to finance stabilization funds became enormous subsidies. Agricultural exports could not fulfill the role policymakers had defined and some rural sectors were becoming a drain on the economy.

Thus, the goal of agricultural policy is now to allow market forces to determine the most efficient allocation of resources. Improved access in international markets is the major priority. If trade barriers and distortions were removed, New Zealand agriculture would have great potential. Thus, the government is an active participant in the multilateral trade negotiations. Export expansion through enhanced marketing techniques remains a priority.

Agricultural Programs

Under the new economic agenda, New Zealand's agricultural programs are limited in scope. Monetary and fiscal policy, while affecting agriculture, are not targeted to achieve agricultural policy goals. Export-oriented farming enterprises will benefit from imposition of a value-added tax, which is exempted on exports. The government's hesitancy in curtailing wage increases disadvantages agriculture. Farmers continue to pay artificially high prices for inputs because of import licensing and tariffs. High interest rates have severely hit farmers. Farm income and asset values are down sharply. Current assistance measures are a transition from the former programs. Regulation of agricultural production and marketing is being reduced. Several marketing boards have been abolished and the powers and functions of others have been curtailed.

In July 1986, the government announced a rural debt discounting scheme. One program discounts debt to the rural bank by 20-25 percent, simultaneously raising the interest rate to the market level (ahead of the scheduled transition). Private lenders to rural bank borrowers must also provide assistance via transfer to equity participation, cooperative purchase arrangement, or other means. Under the second program, the government guarantees seasonal financing to complement private lenders' assistance.

In June 1986, the government wrote off the New Zealand Dairy Board's $NZ 750 million, 40-year debt, in return for payment of $NZ 150 million. The government-guaranteed Dairy Board borrowings for price stabilization purposes (to defined and decreasing limits) for 5 years. In March 1987, the government also wrote off $NZ 930 million in losses of the New Zealand Meat Producers Board. It will guarantee the board's private sector borrowings to finance its sales to Iran.

The Dairy Board exports all New Zealand dairy products and promotes development of the dairy industry. It is a growing international conglomerate with overseas subsidiaries. Producers are paid according to aggregate Dairy Board returns for milkfat and nonfat solids each season. The fluid milk market is being deregulated.

The Meat Producers Board promotes meat on overseas markets, arranges shipping, monitors grading, licenses exporters, and conducts market research. Its role is diminishing as private firms are encouraged to develop markets. The Wool Board promotes wool worldwide, conducts market and production research, licenses exporters, and intervenes in the marketplace. Financed by producer levies, it buys wool at auction as necessary to stabilize prices.

The Apple and Pear Marketing Board purchases the entire crop of apples and pears, with controlled exceptions, and is responsible for storage, processing, and distribution of the fruits in domestic and overseas markets. The board operates a price stabilization scheme and levies growers to maintain and expand handling and storage facilities. The Kiwifruit Authority promotes kiwifruit export marketing, licenses exporters, sets standards, and assists coordination and development of the industry. Similar authorities operate for several other export fruits. Other boards operate for poultry and game meat.

Import restrictions protect New Zealand farmers. The most significant are health and sanitary controls.

Agricultural Program Evaluation

The new policies have been in effect for less than 2 years and are still being phased in. They should promote efficient resource use within New Zealand agriculture. Production decisions will be made based on relative returns from the world market.

New Zealand agriculture is a low-cost producer of livestock products but is facing intense competition from other countries' subsidized exports. Free-market agricultural programs may disadvantage New Zealand in world trade unless trade liberalization is achieved through multilateral negotiations.

Analysts differ in their assessment of the role of marketing boards on the world market. New Zealand believes they increase a small country's market influence by eliminating price competition among exporting firms and protecting the country's quality image. On the other hand, a marketing board may lack entrepreneurial drive and overlook market opportunities.

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PAPUA NEW GUINEA

Michael Lopez

Papua New Guinea's 178,328 square miles include the eastern half of New Guinea and neighboring islands. About 87 percent of the 3.35 million people earn their livelihood from agriculture, usually mixing subsistence and cash-crop farming. Subsistence agriculture accounts for about 15 percent of GDP while cash crops account for a fifth of GDP and about a third of total exports.

Cash crops are principally tree products: coffee, cacao, copra, palm oil, tea, and rubber. A typical large central plantation also supplies technical assistance and inputs to surrounding smallholders and it purchases, processes, and markets their output. Exceptions are coffee trees (grown mostly on small farms) and tea bushes (grown almost only on plantations).

Aside from agriculture, the dominant economic features are the huge Bougainville and OK Tedi copper and gold mines, which went into operation in 1972 and 1984. In 1980, the mining sector employed only 5,000 workers, yet accounted for 17 percent of GDP. Australia, which had succeeded other colonial powers in 1906-17 and ruled the nation until its independence in 1975, provides aid grants equivalent to about 10 percent of GDP. Australian aid is gradually being reduced.

Mining generates vast income but very little employment. Agriculture employs the great majority of the population at low income levels. Therefore, the government invests receipts from mining and foreign aid in projects to boost the productivity of agriculture, forestry, and fishing. Agricultural programs are conventional: research and extension concentrated on cash (export) crops, subsidized loans, price stabilization schemes for export crops, and rural roads. Rural road improvement is especially important because a third of the population resides in the rugged New Guinea central highlands. Landownership policy is a controversial issue. Colonial governments had expropriated traditional usufructory rights on tribal lands and transferred control to foreign plantations. The independent government reversed this policy, thereby discouraging investments and maintenance in the plantation sector. The government continues to adjust land law as it seeks to balance equity and efficiency. Comparatively very high wages in the small modern sector have pulled labor out of traditional agriculture and led to extensive urban unemployment. The government, which more than doubled real minimum wages in the 1970's, is now keeping minimum wage growth significantly below the inflation rate. Falling real wages should alleviate rural-to-urban migration.

The nation's fundamentally sound rural policies could be improved by some shifts in emphasis. Artificially cheap farm credit leads to inefficient resource allocation and is subject to a substantial default rate. Funds now used to subsidize loans could be better spent on improving and coordinating research and extension, with more emphasis on subsistence as opposed to cash crops, and on improving rural transport, with more emphasis on maintenance and feeder roads. Current efforts to reduce the large volume of rice imports (115,000 tons/year, or 40 kg/person) by growing rice are unlikely to be commercially viable. Measures to raise the productivity of traditional food crops would be a more effective substitute.

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SOLOMON ISLANDS

Nina M. Swann

The Solomon Islands won independence from Great Britain in 1978. Its 283,000 inhabitants produced $560 of GDP per person in 1982 from an area slightly larger than Maryland spanning six large and numerous small islands.

Agriculture accounts for 70 percent of the GDP, about evenly divided between the subsistence farming and a commercial, export-oriented sector. In 1979-83, the growth rate of 3.7 percent in real GDP slightly exceeded the population growth rate of 3.5 percent. Only a small portion of the Solomon Islands' heavily forested land is under cultivation for subsistence food production and cash crops. The nation's principal exports are timber, fish, palm oil, copra, cocoa, and spices.

Fish, timber, copra, and palm oil accounted for more than 80 percent of total exports in 1985. Cocoa beans and palm kernels made up most of the remainder. Principal imports are manufactured goods, petroleum, and machinery.

The goals of the 1985-89 development plan are to promote growth, improve rural living standards, expand job opportunities for the rapidly increasing labor force, and encourage self-reliance by diversifying the domestic economy and export base.

The agricultural economy has reduced its dependence on timber and copra. Fish and palm oil are now major exports. The country became a net exporter of rice in 1979, as a result of its investment in irrigation. It is nearly self-sufficient in beef production. Many obstacles remain, however. A high population growth rate, lack of trained manpower, poor transport and marketing services, shortage of investment in agriculture and infrastructure, and the present land tenure system hamper economic development.

TONGA

Paul Johnston

Tonga, 260 square miles of land spread across 170 islands, achieved independence from Britain in 1970. Only five of the islands are inhabited by about 100,000 Tongans. Per capita income is roughly $600. In 1983/84, Tonga's GDP was $65 million. Agriculture, fisheries, and forestry contribute 40 percent of GDP and employ 50 percent of the labor force. Only 40 percent of the arable land is cultivated.

Tonga's principal crops are coconuts, bananas, root crops, and a wide variety of vegetables. Tonga is self-sufficient in poultry and eggs, but limited pastureland makes it necessary to import beef. Coconut production has declined considerably because mature trees have yielded about half of their potential. Due to underutilization of copra and coconut oil factories, higher production costs have reduced Tonga's competitiveness in these commodities.

Tonga's fifth development plan which begins in 1988, allocates less than 10 percent of the budget to agriculture, compared with 50 percent for investments in such items as wharfs, airport facilities, roads, and telecommunications. Three-fourths of the $6 million budget for agricultural programs is allotted to coconut tree plantings and banana revitalization.

Diversification into coffee is also planned. The government is investigating the feasibility of raising cacao trees (not now grown) and livestock among coconut palms, to use land more efficiently. The government funds agricultural research and extension services. The commodities board is the sole buyer and exporter of coconuts, bananas, watermelons, and other fruits.

The commodity board's plan to centralize copra production stems in part from the land tenure system that has left 60 percent of Tonga's cropland uncultivated. A small amount of land is initially given to all males at 16 years. But, there are now more young men than can fit on the land available to the government.

Although land can be leased in Tonga for up to 20 years, this is not long enough to reap the full benefits of coconut palms. In the face of competition from commodities with shorter term rewards, coconut production has not kept pace with factory capacity. In addition, much of the land held by emigrants remains idle or is haphazardly used by their extended families, pending the emigrant's eventual return. Increased agricultural output will consequently, depend on more intensive use of the land planted to coconut palms, a reformed land tenure system more suitable to coconut production, and better exploitation of land which is now idle or underutilized.

WESTERN SAMOA

Paul Johnston

Western Samoa's 161,000 people produced a GDP of $91 million, or $560 per person, in 1986. The 2-percent average growth rate of GDP in 1977-86 easily outstripped the net population growth rate of 0.6 percent. The natural population growth rate is about 2.5 percent, but emigration keeps the island's net growth rate low. Agriculture absorbs 60 percent of the labor force and accounts for 50 percent of GDP. Smallholders are supplemented by a relatively large plantation sector, dominated by the public enterprise Western Samoa Trust Estates Corporation (WSTEC).

Coconut oil and meal, taro, and cocoa provide about 85 percent of the exports. Coconut oil alone accounts for 45 percent. Other exports include bananas, timber, veneer, beer, cigarettes, and fruit juices. Copra was the largest export commodity until 1982. At that time, oil and meal products from the new coconut mill replaced copra as the leading commodity export.

Price stabilization schemes for copra and cocoa aim to reduce farmers' income fluctuations. The major long-term agricultural policy is to diversify away from the volatile copra industry and into such nontraditional crops as Tahitian lime, kava, and papaya. The long maturation period before this program yields benefits has required that traditional crops be maintained. Thus current efforts have focused on strengthening copra and cocoa production. Both WSTEC and smallholders have received financial assistance to plant high-yielding varieties of copra and cocoa. WSTEC received loans from the World Bank and the Asian Development Bank. Smallholders received subsidized inputs and preferential credit funded by New Zealand and Australia and administered by the Development Bank of Western Samoa.

Until mid-1986, the copra board maintained producer prices well above their severely depressed international levels. Then the depletion of its accumulated reserves forced the board to set producer prices below estimated production costs. The high-yielding varieties and replanting by smallholders have yet to improve production because of the long maturation period for coconut trees. In addition, the high population of old, less productive trees requires some time for replacement. Moreover, financial and management problems of WSTEC slowed replanting and production.

REGIONAL SUMMARY OF SOUTH ASIA

Maurice R. Landes

Most South Asian countries have rich agricultural resource bases and agriculture is the largest economic sector in terms of production and employment. The welfare of predominantly poor populations is heavily influenced by the availability and price of food staples. Food grain self-sufficiency, involving both higher farm productivity and income and improved supplies and price stability for food grains, are fundamental policy goals for all but a few countries in the region. Achievement of improved food grain self-sufficiency is leading to a gradual reorientation of policy priorities towards other commodities (oilseeds, pulses), better regional balance, better targeting of benefits, and improved economic efficiency.

Economic policy in South Asia has tended to emphasize infrastructure development, creation of employment and income through import substitution rather than export expansion, and heavy reliance on the public sector to allocate scarce capital. The resources needed to develop infrastructure and industrial capacity have, in large part, been generated through price and trade regimes that have dictated a decline in the agricultural terms of trade. Since the late 1970's, there has been a gradual shift toward more growth-oriented policies aimed at utilizing that infrastructure to achieve a more rapid reduction of poverty. In order to achieve faster growth and meet rising foreign capital needs, there has been more emphasis on export expansion, increasing the role of the private sector in production and investment, and a gradual improvement in agricultural incentives.

Trade policy tends to serve the interests of domestic policy goals by restricting imports to protect either producers or consumers, and controlling exports to assure both adequate domestic supplies and effective export revenue collection. Reflecting the adjustments in domestic policies since the late 1970's, there has generally been a modest liberalization of some imports and exports to boost efficiency and export competitiveness.

Agricultural Programs

Throughout the region, agricultural production is almost exclusively in the private sector and there is a common structure to farm programs. All have allocated large shares of public investment to develop farm infrastructure, particularly irrigation, roads, and marketing facilities. All countries have support price mechanisms for major crops, although marketing and financial constraints prevent effective implementation in some countries. Subsidies on inputs, including fertilizer, credit, and irrigation water, are common means of stimulating adoption of new technology, particularly among subsistence farmers, and where consumer welfare may be adversely affected by output price incentives. Many countries in the region have given high priority to development of agricultural research and extension.

Government distribution programs that provide domestically procured or imported food grains and some other staples, typically at subsidized prices, have been the key means of assuring food availability and price stability in most countries in the region. In some countries, buffer stocks of domestic and imported grain are maintained to assure adequate supplies for distribution. In nearly all countries, trade in food grains and other major farm commodities is firmly controlled by state trading organizations or regulatory measures to protect producer and consumer interests.

There have been several common trends in the evolution of farm programs in the region since the late 1970's. Adjustments in production policies include a modest shift of public investment toward smaller scale, quick-maturing irrigation projects with more immediate growth benefits, more emphasis on output price incentives, attempts to either withdraw input subsidies or more effectively target them, and more emphasis on production of crops other than wheat and rice, particularly oilseeds, pulses, and cotton. In many cases, there has been an attempt to reduce large outlays on general consumer food grain subsidies and either phase out intervention in domestic marketing, or develop programs targeted at needy groups.

Agricultural Program Evaluation

Gains in food grain production have led to increased self-sufficiency and food security in most countries in the region. The fastest gains have been made by the countries with relatively strong farm resource bases (Pakistan, India, Sri Lanka), while slower progress has been made by countries with more difficult physical environments (Afghanistan, Bangladesh, Nepal). Production gains, however, have generally not been shared among all crops and regions. Gains have been fastest for high-yielding wheat, rice, and cotton in areas with irrigation, and relatively slow for coarse grain, oilseed, and pulse crops grown in dryland areas without appropriate high-yielding technology. As a result, a number of countries have reduced dependence on cereal imports, but increased dependence on imports of edible oils, pulses, and feedstuffs.

Investment, price support, input delivery, and research and extension programs have all played an important role in expanding food grain production. But, these programs now must be refocused on developing and introducing appropriate technology for other crops. Producer prices of food grains and many other commodities have tended to fall in real terms and are typically below the border price of imports. But, steady gains in productivity have maintained farm incentives. Investments in irrigation and other productive assets generally yield more benefits than investments in most input subsidies and, in many cases, input subsidies are being phased out. In several countries, failure to invest adequately in research, extension, marketing, and other institutional services is seen as a serious longrun constraint.

Throughout the region, border policies and distribution pr^grams have been highly successful in maintaining relatively low and stable consumer prices for food grains and, to a lesser extent, other food staples. Buffer stocking capabilities and policies have improved steadily. Because of the high budgetary cost of general subsidized distribution programs, as well as improved domestic supply conditions, the shift to targeted consumer programs appears to be justified on both efficiency and equity grounds. However, the border policies that continue to isolate domestic prices from world prices generally translate into economic subsidies to consumers substantially larger than the budget subsidies from various distribution programs.

Despite the achievements made, all countries in the region continue to have large proportions of their population consuming less than the minimum recommended daily calories because they lack adequate purchasing power. The shift toward more growth-oriented policies, including more liberal trade regimes, may help speed the reduction of poverty. However, programs aimed at correcting regional and crop imbalances in production gains, providing subsidies for low-income consumers, and isolating domestic food staple prices from fluctuations in the world market will remain key components of efforts to reduce poverty.

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AFGHANISTAN

Maurice R. Landes

Afghanistan is one of the world's poorest countries, with a per capita income of under $200. About 80 percent of the population, estimated at 15.5 million, is involved in subsistence agriculture. Agriculture accounts for about 65 percent of economic activity. Crops, including wheat, rice, corn, barley, cotton, and sugar beets, account for 70 percent of farm output. Sheep, karakul, and other livestock contribute the remainder. Farm production is constrained by limited availability of arable land, dependence on unreliable winter snows and spring rains for water, and rough terrain that hampers transportation and marketing.

Soviet forces have occupied Afghanistan since December 1979, after opposition to a 1978 Marxist coup developed quickly into a countrywide insurgency. Since that time, the government and policies have been linked with Soviet interests. There has been persistent and extensive warfare between Soviet occupation and Soviet-backed Afghan forces and Afghan guerrillas. The hostilities have led to extensive disruption of economic activity and the outflow of 5-6 million refugees, primarily to neighboring Pakistan and Iran.

Natural gas is Afghanistan's major source of government revenue and export earnings. Although there are extensive subsidies and price controls, the bulk of economic activity, including all farm production, crafts, retail trade, and large shares of foreign trade, manufacturing, and transportation is in the private sector. After natural gas, farm commodities, including dried and fresh fruits, cotton, wool, and skins, are the major exports. Some wheat, sugar, and tea are imported, but most food needs are produced domestically.

However, most consumer and capital goods are imported and there is heavy dependence on foreign aid, about 80 percent from the Soviet Union.

The primary objective of the 5-year plan beginning in 1986/87 is to boost economic growth through reconstruction, industrialization, expansion of the energy sector, and strengthening of both the public and private sectors. Food self-sufficiency remains the prime goal of farm policy, but does not appear to have high priority because of the availability of commodity aid and because food imports remain relatively small.

Major agricultural programs are land reform, public irrigation investment, and improvement of input supplies and extension services. Plans implemented in 1978 involve redistribution of about 25 percent of agricultural land from large landlords to former tenants in an effort to enhance both equity in land ownership and incentives for farm production. The agricultural development bank is responsible for expanding distribution of subsidized fertilizer, other inputs, and credit.

With the exception of cotton and sugar beets, the major cash crops, producer prices of other farm commodities are determined in the market. Cotton and sugar beet prices are fixed to assure stable input prices for those industries. There are, however, extensive direct consumer food subsidies, including below-market sales to civil servants and through a network of cooperatives, as well as implicit subsidies stemming from exchange and interest rate policies and food aid. Essential food imports are generally subject to licensing and tariffs, but not quantitative restraints.

It is difficult to evaluate the effectiveness of farm policies in recent years because of the extensive economic disruptions since the 1979 Soviet incursion. Since 1979, agricultural production appears to have been virtually stagnant, in large part because of various disruptions, including refugee movements, transport and marketing problems for inputs and outputs, and lack of confidence to make investments. Hostilities appear to have resulted in only marginal progress in land reform, input delivery, and extension programs. In addition, investments in irrigation and other projects have been hampered or stalled by lack of revenues, diversions to security operations, and the interruption of aid flows from some donors.

Limited available data do not indicate an increase in food imports since 1979. However, consumer food prices now appear to be substantially higher and less stable in real terms, and agricultural exports have dropped sharply because of production and transport problems. To a considerable extent, the large movement of refugees out of the country since 1979 has probably eased pressure on available food supplies.

The apparently reduced emphasis on food self-sufficiency by the current regime may be a practical strategy at this time, given reduced pressure on food supplies, difficulties in implementing rural projects in the context of hostilities, and the availability of food aid. More urban-oriented industrial and energy-based projects may have a higher probability of success in the current environment.

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BANGLADESH

Gary Ender

The most important crops in Bangladesh are rice, wheat, jute, and tea. Agriculture accounts for about 50 percent of GDP and about 75 percent of employment. Jute, tea, leather, and fish products are exported, with jute accounting for about half of all merchandise exports. Although Bangladesh imports little rice, its primary staple, it annually imports 1-2 million tons of wheat to supplement domestic cereal production. Wheat is imported on both commercial and concessional terms, much of it from the United States.

Bangladesh has used concessional imports and a large-scale ration system to stabilize food grain consumption and prices and, indirectly, the volatile political economy. Consumption has been stable, but has shown little if any upward trend. Partly because large-scale food imports have contributed to rising foreign debt, more emphasis has been given to production and self-sufficiency in the 1980's. However, low domestic savings and a very small export base have limited the resources available to the government, so foreign aid is an important component of agricultural development.

The Economy

Bangladesh, formerly East Pakistan, became independent in 1971. The country has had a bumpy political history, alternating between governments headed by military leaders and civilians. Two heads of government were assassinated. Elements of democracy have persisted, partly because the military is largely centrist in outlook and generally respected by the citizenry. However, no changes of government have been by democratic means, and food price fluctuations, which have severe effects on the predominantly poor population, have sometimes been the cause.

Growth was rapid in the late 1970's but decelerated in the 1980's. The trade deficit declined in the 1980's as exports increased and imports were contained. Nevertheless, growth is constrained by a shortage of foreign exchange, a low rate of saving, and a high debt service ratio. Per capita GNP is less than $150.

The Agricultural Sector

Agriculture in Bangladesh operates in a rather hostile environment: crops are subject to floods and severe storms, capital and infrastructure are very limited, and population growth is rapid. About a quarter of all cropland is irrigated. Rice is the most important food grain produced in Bangladesh, with almost 80 percent of total cropland devoted to the three seasonal crops. Wheat is the only other food grain produced in significant quantity; it follows only rice and jute in area sown. Wheat output has grown rapidly from a small base.

Bangladesh imports most of its wheat, with low-priced wheat and particularly wheat made available as food aid, used to meet deficits in rice supplies. In recent years, it has annually imported a total of about 500,000 tons of wheat from the United States on both commercial and concessional terms.

Jute is the most important cash crop. Exports of jute products account for about half of all merchandise exports. Because jute earnings are also volatile, they are a key part of the trade balance. The jute/rice price ratio is an important parameter in domestic food policy, because of its effect in allocating land resources. Tea is an important export revenue earner, but receipts vary considerably because of price fluctuations. In recent years, earnings from tea have been surpassed by those from leather and frozen fish.

Policy Goals

The underlying goals of Bangladesh's food policies have always been political and economic stability. These goals have taken the more concrete form of maintaining minimum levels of food grain consumption and stabilizing food grain prices. Because food prices are a large part of the CPI, food grain price stability practically ensures overall price stability.

More emphasis has recently been given to production and self-sufficiency because of pressure from aid donors and because debt incurred by cereal imports has become burdensome. Associated goals have been to diminish the fiscal burden of the fertilizer subsidy, reallocate such subsidies to investments like irrigation and water control, and to foster greater efficiency in fertilizer use. Bangladesh has also attempted with the urging and help of donors to shift from general consumption stabilization to a program more targeted to the needy.

Agricultural Programs

The traditional keystone of Bangladesh's food policies is the ration system. There are several types of rationing which distribute large amounts of food grains to various clientele. In the 1980's, additional emphasis has been given to food-for-work and other targeted programs and to market-oriented operations. Because procurement has never been sufficient for public distribution needs, imports have been used to fill the gap. The government is the sole importer of food grains. Concessional imports, tied to policy reforms, are available from donors at prices which allow the government both to realize a profit on the resale and to subsidize consumers. Any subsidies on domestically procured grain would, conversely, come at a cost to the treasury. Fertilizer pricing is similar in that much is imported concessionally and released at a price which is both subsidized and profitable to the treasury.

The government has typically attempted to use both output price supports and input subsidies, particularly the latter, to encourage production and, perhaps, to transfer income to the agricultural sector. The fertilizer subsidy had become a heavy burden on the budget, however. By the end of 1986, it was expected to have been entirely eliminated.

In the 1980's, Bangladesh has made major investments in irrigation and water management. Modern methods of irrigation employed include tubewells, low-lift pumps, and gravity schemes. Drainage and flood control have also been improved. Fertilizer use was already growing when these complementary improvements in irrigation were begun. Moreover, the internal distribution of fertilizer was transferred to the private sector to improve its timeliness and reliability.

Food grain stocks were traditionally used as a pipeline to the ration system. They have also been used recently as a food security buffer stock. Thus, in addition to releases through the ration system, the government attempts to stabilize prices through market injections. To do so, the government has had to increase its warehouse capacity.

Agricultural Program Evaluation

The traditional ration system in Bangladesh had a strong bias toward city dwellers, the military, and employees of the government and other large organizations. It is now more targeted; about half the concessional imports now go to targeted programs like food-for-work and vulnerable group feeding. The ration entitlement has also been reduced. Imports and public distribution of food have been fairly constant in the absolute, and thus a decreasing proportion of consumption.

Early price support programs were ineffective for several reasons: prices were announced too late for farmers to use in making planting decisions, funding was inadequate, and administrators were inexperienced. On the other hand, without tested packages of new technology and agents capable of extending them, the government's program of price supports might not have called forth much additional production. In such a case, well-defended price supports would have been a subsidy to farmers but of little benefit to society overall. Domestic procurement was almost nil in the first few years of the republic, but in 1980/81 it topped 1 million tons, normally reaching about 400,000 tons.

Investments in irrigation and the transfer of fertilizer marketing to the private sector have paid off very well in rice production. About 25 percent of the land is now irrigated -- compared with 10 percent at independence -- three-fourths of that by modern methods. As a result, per capita rice production has been rising.

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BHUTAN

Maurice R. Landes

Bhutan is a landlocked, mountainous kingdom with a population of 1.2 million and a per capita income of $150. About 70 percent of the land area is high-quality forests, 10 percent is pasture, and only 3 percent is arable. Agriculture and forestry contribute nearly 60 percent of GDP and 95 percent of the population gain their livelihood from subsistence farming. Major subsistence crops are corn and paddy. Major cash crops introduced to boost exports include potatoes, oranges, apples, and cardamom. Animal husbandry, primarily cattle and yak, accounts for about 20 percent of farm output.

The economy depends heavily on India which provides annual grants-in-aid equivalent to a third of GDP. In addition, there is free trade with India which accounts for more than 95 percent of Bhutan's total exports and more than 80 percent of imports. Timber, cardamom, potatoes, alcoholic beverages, and cement are important exports, while development goods, food grains, and petroleum are major imports. Indian products such as coal, steel, fertilizer, rice, wheat, sugar, and salt are provided at below market prices.

Between 1960 and 1980, policies and investments stressed creation of the institutions and infrastructure needed for development. Since 1980, the emphasis has been on agricultural and industrial development that will reduce dependence on foreign aid. Top priority is to enhance farm production and income and to improve housing, health care, and education in order to boost rural living standards.

The top agricultural priority is self-sufficiency in cereals, particularly rice. Programs focus on boosting yields by providing a balanced package of inputs and incorporating new technology. About half of agricultural development outlays are devoted to expanding irrigated area. Priority is also being given to improving cattle and yak productivity and marketing. Most farm produce is marketed privately, with only about 1 percent of annual food grain procured at support prices and distributed by Bhutan's food corporation.

Agricultural production has annually expanded at 2-3 percent in recent years, with substantial fluctuations resulting from poor weather and minimal irrigation. Cereal import needs appear to be rising because of slow growth in production, in part because area is shifting to cash crops with higher yields and profitability and less vulnerability to poor weather. Local cereal production costs appear to be higher than in neighboring India because of scarcity of wage labor and low levels of technology.

The efficacy of cereal self-sufficiency goals and programs, now based on food security considerations, will depend on the success of recently introduced programs in raising yields and reducing costs. Free trade with India provides an ample market opportunity to support higher cash crop and livestock product production. Rich forest resources are largely untapped as the government seeks an appropriate commercial timber management policy.

INDIA

Maurice R. Landes

India, with a rich agricultural resource base, is among the world's leading producers of many grain, oilseed, fiber, and horticultural crops. Agriculture is the largest sector of the economy and accounts for about 60 percent of employment. Agricultural development, self reliance, and growth with equity are among the primary goals of economic policy. Major policy tools are state control of trade, producer price supports, public investment in irrigation, research and farm infrastructure, and a buffer stocking and public distribution system for food staples. India has had a farm trade surplus since the late 1970's. Farm imports, primarily edible oils, now account for about 8 percent of total imports, while exports of a broad range of high-value products account for about 30 percent of total export earnings.

Economy

India's GDP of $200 billion (1986), comprised of about 31-percent agriculture, 27-percent industry, and 41-percent services, is the 12th largest in the world. Land, water, and mineral resources are extensive and have helped fuel the development of a broad industrial base. The population of 780 million (1986) is the second largest in the world, with underlying demographic rates indicating that the annual growth rate of 2.2 percent is falling. Real GDP growth annually averaged 3.6 percent between 1949 and 1980, but increased to 5 percent in the 1980's because of strong farm sector gains and more growth-oriented industrial policies.

India is governed by a democratically elected, parliamentary government. Most executive authority is vested in the prime minister, a position held by a member of the Nehru family and the congress party for most of the period since independence in 1949. Substantial power, including most agricultural development and policy authority, rests with the democratically elected governments of India's 22 states. India has important trade and development ties with both Soviet bloc and Western countries.

Economic development is guided by central 5-year plans. A large share of industrial capacity and infrastructure is held in the public sector. Despite liberalization measures since the late 1970's, regulation of industrial capacity, investment, and pricing, as well as virtually all foreign trade, is extensive. India is a large recipient of foreign development assistance but, with one of the highest domestic savings rates (24 percent in 1986) in the world, most investment uses domestic resources. Overall, the Indian economy is one of the least dependent on foreign trade and resources in the world.

The Agricultural Sector

Agriculture, directly and indirectly, accounts for about 60 percent of employment in the economy. Extensive land and water resources and agroclimatic diversity permit cultivation of most crops. Major crops include rice, wheat, sorghum, millet, corn, pulses, peanuts, rapeseed, soybeans, cotton, jute, sugarcane, tobacco, and tea. The cattle and water buffalo population of about 253 million (1982) is the world's largest, but production of meats and other products is relatively low. Farm production is a small-scale private sector enterprise. About 3 percent of farmers control 10 or more hectares, 55 percent control 1 hectare or less, and the average holding is about 2 hectares.

Although about 64 million hectares are irrigated--the largest irrigated area in the world--about two-thirds of India's 180 million hectares of gross cropped area depends on the vagaries of monsoon rainfall, resulting in substantial instability in farm output. Adoption of high-yielding cereal technology has been largely neutral to farm size. There are significant regional disparities in agricultural productivity and development. More heavily irrigated areas in northern and southeastern India are generally more developed than rainfed areas of central and eastern India.

Imports of cereals have declined gradually since the introduction of high-yielding varieties in the mid-1960's. India is now an intermittent cereal exporter, and there have been no significant wheat or rice imports since 1983/84. Edible oils, of which India is the world's largest importer, are now the major farm import. Farm exports are primarily high-valued items, including tea, coffee, oilcakes, tobacco, cashews, and spices. There has been a farm trade surplus since the late 1970's. Farm items account for about 8 percent of total imports and 30 percent of exports.

Policy Goals

Fundamental economic policy goals have not changed since independence. They include exploitation of domestic resources to become self-reliant in most sectors, close regulation of the allocation of scarce capital, and growth with equity. Economic policy is shaped by the coincidence of three factors: a broad resource base that makes self-reliance possible; a large, poor population that places a premium on creation and protection of domestic employment; and a democratic political system that requires price stability and incorporation of equity issues in policies and programs.

Since the late 1970's, there has been a modest shift toward looking outward for markets, technology, and capital, lowering industrial protection, and increasing growth. More emphasis is now placed on expanding manufactured exports through enhanced competitiveness, there is more participation in world commercial capital markets, and regulation of private foreign investment has been eased. Key factors behind this shift are the need for foreign earnings and capital because of limited scope for increasing domestic savings, the need to expose inefficient industries to competition, and dissatisfaction with slow growth.

The major goals of agricultural policy are self-sufficiency in food staples, and adequate food supplies at affordable prices for low-income consumers. The broad strategy has been to forego food imports that would yield short-term gains in consumption in order to invest scarce resources in permanent longer term reductions in poverty. Imports are used only to meet domestic shortfalls and halt unacceptable swings in consumer prices. Farm exports are a secondary goal and adequacy of domestic supply typically takes precedence over export commitments.

Until the early 1980's, goals emphasized increasing wheat and rice production in irrigated areas of northern and southeastern India and improving subsidized cereal distribution in urban areas. Now, there is increasing emphasis on enhancing the low productivity of coarse grains, oilseeds, and pulses, crops grown in primarily rainfed areas of central, western, and eastern India. In addition, there is more emphasis on improving food distribution programs in rural areas.

Agricultural Programs

Government intervention in the farm sector is extensive and includes major public investments in irrigation and other farm infrastructure, producer price supports, fertilizer subsidies, support for research and extension, buffer stocks, and subsidized food sales through the public distribution system. Surface water irrigation schemes absorb about 10 percent of total annual public investment and, along with private investment in groundwater development, contribute to an annual increase of about 2 million hectares in irrigation capacity. Central and state government outlays also support the development of farm roads and markets, storage facilities, and rural electrification.

Producer price support programs are in effect for all cereals, major oilseeds, pulses, fibers, sugarcane, and tobacco. Supports are most effective for wheat and rice, with a substantial share of their production procured for sale through the public distribution system. Domestic supply, demand, and costs, rather than world prices, are the major determinants of support price levels. Annual budget outlays for fertilizer subsidies have increased to about $1.5 billion in recent years, but consist primarily of transfers to high-cost domestic fertilizer producers, rather than subsidies to farmers. Subsidies on seeds, pesticides, and other inputs are largely promotional and targeted and involve comparatively small costs. India's extensive agricultural research system consists of centrally funded institutes focusing on specific crops, and a network of state agricultural universities with comprehensive teaching, research, and extension programs. Extension services, largely organized according to the "training and visit" system, are operated by state governments.

India's public distribution system, which distributes domestically procured and imported food grains at subsidized prices through a network of about 321,000 fair price shops, is the government's primary tool for maintaining consumer price stability. The system's sales, along with increasing allocations for food-for-work and other targeted programs, now annually account for 15-18 million tons of wheat and rice. In addition to maintaining operational stocks to meet normal system needs, the government also tries to maintain a buffer stock of 10 million tons to offset production shortfalls.

Foreign trade of virtually all farm commodities is controlled either by government monopolies, by any combination of quotas, duties, and minimum export prices, or by an outright ban on trade. The monopolies, such as the food corporation of India (cereals) and the state trading corporation of India (edible oils and sugar), implement trading decisions made by interministerial committees. While many exports are handled by private traders, most are regulated to assure adequacy of domestic supply. Pulses are currently the only major farm commodity that can be imported by private traders, subject to a 25-percent duty.

Agricultural Program Evaluation

Despite continued weather-induced variability, growth in cereal production has outpaced population growth and market self-sufficiency in cereals has been achieved. Use of fertilizer, irrigation, high-yielding varieties, and other production inputs has expanded steadily, but potential remains for increasing production through improved technology and expansion of irrigation capacity. Production gains, however, have not been shared by all crops and all regions. Growth in production of coarse grains, pulses, and oilseeds has been sluggish, and rainfed areas throughout the country have generally not benefited from new technology.

Subsidies have successfully promoted fertilizer use without significantly distorting domestic prices, but they have supported some inefficient domestic fertilizer production. Public outlays have expanded irrigation capacity, but there is concern with the high cost and inefficiency of surface irrigation schemes. Research and extension capabilities are strong for wheat, rice, and major cash crops, but relatively weak on other crops.

Agricultural price policy has generally been successful in striking a balance between adequate producer price incentives and the pressing need to assure affordable prices to low-income consumers. Declining real prices for some crops, including wheat and rice, have benefited consumers, while producers have benefited from productivity gains. Rising prices for crops such as oilseeds, pulses, and sugar reflect efforts to increase production and manage demand.

Despite success in boosting production, expanding distribution programs, and stabilizing food grain prices, there has been limited progress in improving dietary standards. Policies do not appear to have biased income gains against the poor but growth in effective demand has been inadequate, as evidenced by a large current wheat and rice surplus while 40-50 percent of the population consumes a nutritionally inadequate diet. In addition, the public distribution system is largely untargeted and urban in orientation, resulting in leakages to nonpoor and limited benefits in rural areas. These factors contribute to the more recent shift to more growth-oriented macroeconomic and industrial policies, production programs for relatively low-income rainfed crops and regions, and targeted food distribution programs.

Protectionist border policies have held producer prices of some crops, including wheat, rice, and cotton, below import parity prices, and prices of others, such as oilseeds, pulses, and sugar, above world markets. Exposure of essential low-priced goods to world market conditions probably involves unacceptable political risks, while high internal prices of others are judged necessary to adjust cropping patterns, stimulate investment, and conserve foreign exchange. Border measures have hampered marketing of most farm exports, and there is a modest trend toward relaxing these constraints to boost foreign exchange earnings.

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THE MALDIVES

Maurice R. Landes

The Maldives consist of about 1,200 islands with a combined area of 298 square kilometers in the northern Indian Ocean. About 200 of the islands are inhabited with a population of about 180,000 having a per capita income of about $310. The topography is flat and the climate hot and humid. The principal natural resource is extensive fishing grounds. The country is ruled as a republic, with a president and popularly elected unicameral legislature.

Fishing and, increasingly, tourism and shipping are the mainstays of the economy. Agriculture, largely subsistence gardening of fruit, tubers, vegetables, coconuts, and condiments, is severely hampered by poor soils and lack of space and accounts for only about 10 percent of GDP. Economic activity and foreign trade is primarily in the private sector. Tourism and exports of fresh and processed fish account for most foreign exchange earnings. Imports consist largely of food and capital goods.

The major economic policy goals are rapid growth and an equitable regional balance in development. The tourism, fishing, and shipping industries are the focus of most policies and programs, along with improvements in services.

No incentives are provided to expand agricultural production. Institutional support to provide improved inputs, seeds, or technology is negligible. A large portion of food requirements is freely imported, including all rice (the food staple), wheat flour, and most food for the tourist industry.

During the 1980's, the economy has experienced strong incomes and employment, a high rate of productive investment in sectors with comparative advantage, and solid gains in revenues and exports. Fishing, tourism, and shipping have been the engines of growth. However, all regions have not benefited equally and future programs will focus on neglected areas, as well as improved services. Although the agricultural resource endowment is poor, productivity is below its potential. Better institutional support for agriculture could boost productivity, provide employment in processing sectors, and result in economically efficient import substitution.

NEPAL

Gary Ender

Nepal traditionally exported small amounts of food, mostly to India for nonconvertible currency. These exports took place despite persistent malnutrition because of very low effective demand. Inadequate growth in production has recently almost eliminated these exports, with little change in average availabilities. When shortfalls occur, Nepal's landlocked position, limited exports, and low per capita income make commercial food imports almost impossible. Moreover, regional surpluses generated in the Tarai (plains) are unable to meet deficits in the nearby mountain areas because of forbidding terrain and low effective demand.

The main food crops are rice, corn, wheat, and millet. Agriculture accounts for about 60 percent of GDP and an even higher percentage of employment.

Nepal was closed to the world and to any development until the early 1950's. Thus, the country's objectives remain quite basic: to provide physical infrastructure, education, and new technology so that Nepalis can improve their productivity, income, and nutrition. Because of a long, porous border, Indian policies have a strong influence on Nepal. Over the past 35 years, Nepal has adopted much modern technology but is still one of the poorest nations in the world.

The Economy

Nepal is a constitutional monarchy, with most power remaining with the king. Political parties have typically been banned under the panchayat system. Nepal is neutral, and receives substantial development assistance from the United States, India, China, the U.S.S.R., and many other countries and organizations. Without this assistance, little development could occur, as the government's ability to raise revenue, both domestically and from exports, is extremely limited. Per capita income in Nepal is less than $150.

The Agricultural Sector

Food grains occupy about 90 percent of total cropped area in Nepal. Rice, the most important, is grown in the Tarai and on terraced land in the lower mountains. Most irrigation goes to rice, but output is still very dependent on rainfall. Maize is the most important crop grown on sloping land and the main staple in the mountains. Wheat is usually grown on residual moisture after rice. Some rice was traditionally exported, mostly to India, but this exportable surplus is virtually gone now. Jute has also been exported.

Policy Goals

Nepal's policy goals have been to provide infrastructure of all types to foster development. In the early 1950's, there were no public schools, roads, or hospitals, and almost no commercial sector. The population was illiterate and malnourished, and landholding was on a feudal basis. The government attempted to provide electricity and universal education, reform landholding, and build roads. As expectations and population pressure have risen, recent 5-year plans have given highest priority to roads and to agriculture as the leading sector for development.

Agricultural Programs

Nepal's primary tools for implementing its agricultural policy goals have been the research and extension services. The creation and development of these institutions have been more important than any specific programs they conducted. Hundreds of scientists have received degree training, and several major research stations have been established. Early programs favored the Tarai region, because of accessibility/marketing problems in the hills. Political pressure has recently led to a more geographically balanced allocation of resources.

Few attempts have been made to influence output prices directly. This is not due to a lack of urgency, but rather the government's very limited resources and the difficulty of influencing prices in the face of the nearby Indian market. Subsidized rice has been sold to government workers in Kathmandu. Transportation of fertilizer to the mountains has also been subsidized, but little has moved this way because of low incomes and low monetization of the hill economy.

Road construction has been a major program of importance to agriculture. In the Tarai, an east-west highway running the length of the kingdom is complete in all but the least populous far west. Many feeder roads to district centers have been built. The government also legislated a land reform program which includes ceilings on landholding and provisions for tenant purchase of land.

Agricultural Program Evaluation

Grain yields, incomes, and literacy are still low, transportation is still difficult, and attitudes are still quite traditional. But, a comparison with conditions of 30 years ago reveals enormous changes. Agricultural extension and family planning organizations deliver messages to a majority of Nepalis, either in person or by radio, and agricultural research programs have begun to produce not only high-yielding varieties, but ones with other characteristics sought by farmers. Wheat has become the third most important crop, although it was hardly grown 20 years ago. Although nutritional status has not improved much, serious declines have been prevented.

Landholding in Nepal still takes a modified feudal form, especially in the Tarai, land reform having had only a limited impact. In many areas, however, the government has been able to effect a change from share tenancy to fixed rents, and it hopes that this will improve incentives to produce.

Nepal's soils and farmers have the potential to be very productive. Farming systems are highly intensive and were ecologically stable until the eradication of major human diseases caused substantial population pressure on the land. Nepal's most urgent problem is that population pressure and declining soil fertility have begun a vicious circle, which must be broken. Declining corn yields--and recent area increases onto very erodable land--are a clear manifestation of this problem. While efforts have begun, progress on hilly and sloping land technology has been slow.

Today's Nepali farmer--once limited in knowledge of modern varieties and methods--is most constrained by lack of irrigation and fertilizer. Nepal has tremendous hydroelectric/irrigation potential, but large projects have typically been delayed by their complex, multinational political economy. Fertilizer could be supplied better by the private sector than by the existing parastatal, and steps are being taken in this direction. Movement of inputs and output could also be further improved by the construction of numerous, low-technology, farm-to-market roads.

Suggested Reading

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PAKISTAN

Maurice R. Landes

Wheat, cotton, rice, and sugarcane are the major crops grown in Pakistan's predominantly irrigated farm sector. Agriculture is the most important economic sector. Main policy goals are to sustain a high rate of output growth for exports and import substitutes, to increase and stabilize farm income, and to reduce poverty. Major current policy initiatives involve reduced government intervention in input and output marketing, increased productivity through improved input use and institutional services, and improved price support capabilities. Pakistan's importance to U.S. agriculture stems from its role as a major competitor in world rice and cotton markets, as well as a major world importer of edible oils, including U.S. soybean oil.

Economy

Pakistan's GNP is $35 billion, with agriculture and industry each contributing about 25 percent and services accounting for about 50 percent. Per capita GNP is about $352, but more than a third of the population lives below the absolute poverty line of about $150. The population of 99.2 million in 1986, including 3-4 million Afghan refugees, is growing at about 3 percent per year and is becoming rapidly more urbanized. Real GNP growth has averaged nearly 7 percent a year since 1980, benefiting from strong gains in both farm and manufacturing output. Cotton, rice, and cotton yarns and textiles are the major exports. Principal imports are petroleum, edible oils, machinery, and chemicals. A large merchandise trade deficit is financed by remittances from workers employed in the Middle East, increasing foreign borrowing, and foreign aid, of which the United States is the largest donor.

Since a bloodless coup in 1977, Pakistan has been ruled by a military junta led by Mohammad Zia ul Haq. Despite the election of a prime minister in 1986, General Zia continues to hold executive authority. Political stability has been fragile and closely linked with national security. The threat resulting from the 1979 Soviet occupation of Afghanistan and the flow of refugees to Pakistan provides a strong rationale for the maintenance of military rule. That threat has strengthened economic and military ties with the United States. Pakistan also has close ties with China and with fellow Muslim nations in the Middle East.

The Agricultural Sector

Primary agricultural production contributes 25 percent of GNP, more than 50 percent of employment, and 30 percent of export earnings. The cotton textile industry is, by far, the largest industrial producer and employer, and accounts for an additional 30 percent of exports. Crops account for 70 percent of farm output and include wheat, the food staple (about 41 percent of total crop output), cotton (18 percent), rice (16 percent), sugarcane (15 percent), corn (3 percent), and gram (2 percent). Livestock, principally goat, poultry and eggs, beef, and dairy, account for the remaining 30 percent of farm output.

Pakistan has 20.3 million hectares of arable land of which 19.3 million are cropped and 16.2 million irrigated, giving Pakistan one of the most extensively irrigated farm sectors in the world. However, 84 percent of irrigated area relies on an aging and inefficient canal system heavily dependent on unreliable monsoon (July-August) and winter (January-February) rains. Soils are generally of very good quality, although over-irrigation and poor drainage create increasing problems with waterlogging and salinity. Punjab province, with 60 percent of the cropped area, is the most important agricultural region and has benefited the most from the introduction of high-yielding wheat, rice, and cotton technology. Average farm size is 5.3 hectares, but two-thirds of all farms are smaller than 4.1 hectares.

Pakistan is among the world's largest exporters of both cotton and rice. Farm imports account for 15-20 percent of the import bill and are dominated by edible oils, but also include tea and wheat. Wheat was the major farm import until the late 1970's, but is now normally imported only on a grant basis to help feed Afghan refugees.

Policy Goals

From independence in 1947 until the late 1970's, economic policy focused on the development of an industrial base and large water resource projects. Most industrial capacity and infrastructure were developed in the public sector, and regulation of domestic industry and foreign trade was extensive. Although growth performance was generally strong, annually averaging near 6 percent, the economy began to stagnate in the late 1970's. Key problems were industrial inefficiency, deteriorating agricultural incentives, and an increasingly hostile external environment that included the oil price shocks, recession, and the Soviet incursion into Afghanistan. In the fifth (FY1979-FY83) and sixth (FY1984-FY88) 5-year plans, policies have aimed at high growth, demand management through prudent fiscal and monetary policy, export expansion, deregulation of domestic industry and foreign trade, improved price incentives, and an expanded role for the private sector in investment and production.

Until the late 1970's, agricultural policies focused on large public surface irrigation investments, food and input subsidies, and wheat self-sufficiency. Resources were drawn out of the farm sector by an administered price regime that dictated a decline in agricultural terms of trade. By the late 1970's, farm output growth began to slow. Current farm policy objectives are to move the farm sector from self-sufficiency to an export orientation, and to achieve higher and more stable farm incomes. The new strategy calls for attaining high output growth by giving priority to investments with a faster payoff, reducing input subsidies and improving price incentives, improving institutional services, and reducing the role for the public sector in domestic and foreign marketing.

Agricultural Programs

Intervention in farm production, domestic marketing, and trade remains extensive. Major programs involve public investment in surface irrigation and drainage systems and other farm infrastructure, producer price supports, subsidies on fertilizer, irrigation water, and credit, public sector control of rice and cotton exports and most edible oil imports, and, until recently, subsidized wheat sales. Although irrigation priorities have shifted to shorter term water management and reclamation projects, public outlays in the water sector still account for about 13 percent of total development expenditures. In addition, about half of annual irrigation system operation and maintenance costs are covered by public subsidies.

Support prices are established for most farm commodities based on production costs and, for export crops, international prices, and are effectively maintained for the major crops: wheat, rice, cotton, and sugarcane. The government intends to eliminate all fertilizer subsidies by 1988. Domestic nitrogen prices have already been decontrolled, but substantial subsidies remain on domestic phosphate and all imported fertilizers. Other than relatively small subsidies on credit and tubewells, there are no other direct farm input subsidies. Investment in agricultural research, extension, marketing, and other institutional services for agriculture has been a relatively low priority.

Pakistan's wheat rationing and subsidy program has now been largely dismantled, but domestic wheat price stability remains a key priority. Intervention in the domestic wheat market now consists of price support purchasing, buffer stocking, open market sales, and sales in remote areas, but about two-thirds of production is handled by the private sector. Government monopolies defend the support prices for rice and cotton and also buy large portions of each crop at market prices to meet export commitments. But, rice and cotton for domestic consumption are privately traded. Pricing and marketing of domestically produced edible oils have been largely deregulated, although the government still controls most vegetable ghee (hydrogenated oil) production capacity, and maintains a duty on imported oils which account for the bulk of consumption.

Despite steps towards liberalization and privatization of nonfarm trade, imports and exports of virtually all farm commodities remain controlled by government monopolies and/or regulatory barriers. Wheat trade is a firm government monopoly to ensure protection of both producer and consumer welfare. The cotton export corporation and the rice export corporation currently handle all aspects of trade in those commodities, and exports remain subject to export duties. Edible oil imports are now conducted by both the public and private sectors subject only to a regulatory import duty. Imports of pulses, breeding cattle, soybean meal for poultry feed, and tallow face relatively small duties, but imports of most other farm commodities are either banned, face prohibitive tariffs, or are government controlled.

Agricultural Program Evaluation

With the exception of a slowdown during the mid-1970's and periodic setbacks from poor weather, the growth performance of Pakistan's farm sector, and the economy as a whole, has been quite strong. There is now self-sufficiency in wheat except in extreme weather years, rice output gains have been largely consistent with export market opportunities, and gains in cotton have been strong, particularly in recent years. However, gains in other crops, particularly oilseeds, pulses, and coarse grains have been negligible, and Pakistan is now one of the world's largest importers of edible oils, a growing importer of pulses, and an emerging importer of feedstuffs. It is not clear whether these shifts reflect true comparative advantage or a lack of incentives and institutional support for these crops.

Despite steady improvement in productivity and input use, both average yields and input use remain low by international standards, particularly considering Pakistan's extensive irrigation. Fertilizer subsidies have, in large part, accrued to domestic producers rather than to farmers, and the main beneficiaries of farm-level subsidies on fertilizer, credit, and water have been large farmers. There are widespread inefficiencies in the distribution, management, and use of irrigation water, as well as increasingly prevalent problems with waterlogging and salinity. Failure to adequately develop institutional services for agriculture, including research, extension, water management, and marketing is a key shortcoming of farm policy.

Pricing and trade policies imposed a heavy tax on the farm sector and farm incomes until the late 1970's, with the benefits accruing largely to agricultural processors and consumers, as well as government revenues. Since the late 1970's, stronger price incentives and productivity gains have strengthened farm incomes. However, domestic prices of most major commodities remain below border prices, implying continued economic taxation of farm production for the benefit of consumers and processors. Domestic producer and consumer prices for imported commodities, including oilseeds and pulses, are held near international prices to benefit consumers. But, the lack of both price incentives and institutional support for producers has contributed to stagnating output.

Low investment in institutional support for agriculture in Pakistan is symptomatic of a broader deficiency in domestic savings and investment that is a key threat to sustained agricultural and economic growth. Concentration on growth-oriented policies has done nothing to improve low rates of savings and investment, or prevent what is viewed as a deterioration of the physical and human capital base. Gradual liberalization of trade, primarily for nonfarm items, since the 1960's has opened the economy considerably, with imports and exports now adding to more than 25 percent of GDP. Freer trade has probably improved efficiency and quickened growth, but it has not contributed to growth in public or private rates of investment.

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SRI LANKA

Gary Ender

Sri Lanka's most important crops are rice and tea, followed by copra and rubber. Agriculture is about 28 percent of GDP and about 45 percent of employment. Sri Lanka imports rice, sugar, and substantial amounts of wheat, which is not produced. Much of its wheat enters on concessional terms, with the United States a major supplier.

Early policies centered on human development and consumer welfare. There has been a recent shift toward more market-oriented policies, faster growth, and rice self-sufficiency. The Mahaweli hydroelectric/irrigation project is Sri Lanka's most important development project for the 1980's. GDP growth accelerated after 1977 and rice production doubled in 10 years. However, tea production and exports have been stagnant, the trade deficit shows no sign of decreasing, and the debt service ratio is worrisome.

The Economy

Sri Lanka is a socialist democratic republic. The government controls about 60 percent of productive capacity and the national budget is about 40 percent of GNP. Per capita income is about $350. The government has generally been stable.

An insurgency by Tamil separatists has diminished tourism and foreign investment. Rising civil defense costs and ambitious development projects have led to a substantial government deficit. Despite increases in textile exports and remittances from the Middle East, the current account and trade are in substantial deficit and the debt service ratio has risen sharply to a dangerous level.

The Agricultural Sector

Rice is the only food grain produced in significant quantities. It occupies about 80 percent of food cropland and about 40 percent of all cropland. Although two-thirds of the crop is irrigated, weather has an important influence on harvested area and yield.

Tea is the most important nonfood and export crop. More than half the production occurs on government-owned or managed estates. A perennial crop, its supply shows little response to price and export revenues sometimes fluctuate significantly. The perennial nature of the crop also makes rapid improvements in productivity difficult.

Sri Lanka's major agricultural exports are tea, rubber, and coconut products, which together account for about half of all exports. Important agricultural imports are wheat (which cannot be produced economically), sugar, and rice.

Policy Goals

Until 1977, Sri Lanka's policies targeted human development, especially education and health, including nutrition and food consumption. A massive food distribution program guaranteed everyone a minimum amount of rice. Since 1977, the government has targeted higher GDP growth and more investment. It has striven to reduce both the size of government and its control over the economy. It promoted exports by reforming exchange rate controls, setting up industrial free-trade zones, and providing incentives to export nontraditional commodities.

In the agricultural sector, rice production and self-sufficiency received considerable attention. This emphasis on rice was recently broadened to support both diversification and productivity improvements in other traditional crops. Domestic rice and wheat marketing has been shifted to the private sector. The target group for consumption subsidies was scaled back from the entire population to selected, needy groups, and a food stamp program was implemented.

Agricultural Programs

Since 1977, rice marketing has been performed mostly by the private sector. Government research and extension efforts have been concentrated on rice production. The Mahaweli hydroelectric and irrigation project, the country's biggest in the 1980's, has claimed the lion's share of government resources. The largest current expenditure for agriculture is the fertilizer subsidy.

A targeted food stamp program, probably the only one in a developing country, replaced the comprehensive rice distribution program of the previous era. Households meeting an income criterion receive stamps for the purchase of basic foods and some other essential commodities. Under this program, rice is also available at below-market prices.

All wheat is imported. The government is the sole importer of food grains. Because of Sri Lanka's precarious foreign exchange position, the availability of both food aid and barter opportunities are important determinants of food import levels. For the same reason, exporters must compete strongly on price to ship food to Sri Lanka.

Developments in the perennial crops contrast markedly with those in rice. A devaluation of the rupee was balanced by the imposition of high export taxes, and government resources were generally unavailable for support of traditional crops like tea. However, successes in the rice program, the availability of loans from international institutions, and the need to boost exports have recently led the government to strive for more balanced results in the agricultural sector. Various policies to improve the productivity of the perennial crops are being put in place, including coordinated investment strategies, reductions in export taxes, and a stabilization fund.

Agricultural Program Evaluation

The government's focus on rice paid off. Devaluation and the privatization of rice marketing led to substantial price increases and a doubling of rice production. Rice self-sufficiency increased from 60 percent to almost 90 percent. Yields and fertilizer applications in rice increased steadily with improvements in fertilizer availability and timeliness of supply. Rice farmers have also benefited most from the fertilizer subsidy, because they consume the majority of the fertilizer. In addition, the Mahaweli project is creating new irrigated areas, and its benefits could go either to rice, to other crops, or to both.

Although there are administrative problems and some abuse of the eligibility criteria, needy consumers still receive some assistance from the food stamp program. Partly because wheat is priced below open-market rice (which accounts for most rice purchases), wheat imports have continued to grow. On the other hand, improved rice supplies have slowed the rate of growth of wheat imports. Besides having a price advantage, wheat is popular with high-income consumers.

Tea, coconuts, rubber, and other traditional crops have not fared as well as rice. While the government removed resources through export taxes, until recently few resources like research and extension were devoted to these crops. Their area and productivity stagnated. Profitability was squeezed by taxes, the devaluation, and declining world prices. Perennial crop production has also been constrained by insufficient coordination and consistency among the several government agencies which are responsible for determining and implementing policies.

Events outside the sector will continue to have important effects on agriculture, particularly the trade deficit and civil unrest. The government's limited supply of convertible currency continues to compel it to seek cheap, concessional, subsidized, or barter terms on which to import wheat and other essential commodities. Increased defense allocations due to the civil unrest capture resources that might have gone toward agricultural investments like research, extension, or irrigation.

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REGIONAL SUMMARY OF SOUTHEAST ASIA

Jitendar S. Mann

Economic activity in the centrally planned economies of Vietnam, Laos, Cambodia, and Burma is directed by socialist regimes. Other countries follow mixed economy plans with overall directions provided by a government planning body. The multi-year plans provide growth targets for various sectors, but the major economic activities are carried out by private entrepreneurs. Parastatal organizations play a major role in carrying out the agricultural programs.

The Southeast Asian countries have followed policy goals of food self-sufficiency, diversification of agricultural production, and export promotion. The goals are pursued through the input subsidy programs (especially irrigation and fertilizer) and tariff and trade policies to protect domestic producers. Indonesia has attained self-sufficiency in rice and is on the verge of exporting rice. The Philippines are self-sufficient in corn. Burma is a traditional rice producer. Thailand dominates international export markets in rice, corn, and cassava. Malaysia's palm oil is strongly competitive in the world vegetable oil markets.

The economies of the Southeast Asian countries depend heavily on agriculture. A major proportion of GDP is generated in agriculture which employs a substantial proportion of the workforce.

Rising incomes are accompanied by diversification in food consumption from cereals to livestock products. This provides market potential for feed grains and protein meals. However, a number of regulatory constraints impede agricultural development.

BRUNEI

Leslie Ross

After nearly a century under British protection, Brunei Darussalam regained its independence on January 1, 1984. Brunei is a hereditary sultanate in which all major decisions are made by the sultan whose family has been in power for 29 generations. The economy is dominated by the oil and gas industry, which accounts for almost 75 percent of GDP, 99 percent of export earnings, but only 7 percent of employment. Nearly half of Brunei's labor force works for the government, with many others involved in retail and construction.

During 1975-84, the economy averaged annual growth of 4 percent. Because of the recent weakness in the international oil market, Brunei's substantial trade surplus has narrowed in recent years. Still, Brunei's overall balance of payments situation is likely to remain comfortable as a result of large international reserves, income from overseas investments, and a negligible foreign debt estimated at only $10 million. Brunei's major suppliers of import goods are Singapore, the United Kingdom, and Japan while its main export markets are Japan, Thailand, Singapore, and Malaysia.

Roughly a tenth of the country's 2,200 square miles is devoted to farming of rice, sweet potatoes, cassava, rubber (traditionally, the main export), fruit, vegetables, and spices. About 80 percent of Brunei's food needs are imported, while agricultural exports are limited to rubber, pepper, and jeluntong (used in the manufacture of chewing gum). Forests cover two-fifths of Brunei. However, forestry exports are now restricted in the interest of conservation.

The main objectives of the fifth 5-year plan (1986-90) are diversification of the economy and export earnings, development of the financial sector, expansion of ethnic Malay citizen's participation in the Chinese-dominated private sector (called bumiputra policy), and stable economic expansion.

Agricultural policy focuses on beef self-sufficiency and increased rice production. Labor shortages and poor soil quality are the major constraints of the agricultural sector. Even though Brunei's 225,000 people are among the world's wealthiest, with per capita income estimated at nearly $18,000 in 1984, the government subsidizes rice to consumers and offers subsidized fertilizer, free pesticides, and technical advice to encourage labor into the shrinking agriculture sector.

Beginning in the mid-1970's, the oil and service sectors replaced farming as the mainstay of the economy. Agricultural programs have been unsuccessful in luring workers back into farming from white-collar government jobs. In 1984, there were fewer than 100 farmers, while the department of agriculture had a staff of 2,000.

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BURMA

Jitendar S. Mann

The centrally planned economy of Burma depends heavily on rice. Government efforts to increase production for export include a comprehensive extension program encompassing entire townships. The government also runs a procurement system to obtain rice for export and distribution in urban areas.

The economic policies of Burma remain committed to centralized state planning. The Burma socialist program party is the only political party, with the ultimate objective of laying the economic, social, and political foundations of socialism by the end of the 20-year plan (1974-93). The country earns about 50 percent of its foreign exchange from agricultural exports.

The Burmese economy is predominantly rural. Agriculture employs about 63 percent of the labor force producing about 28 percent of GDP. Rice has dominated Burmese agriculture for centuries. However, the nation's diverse resources also support other agricultural activities: oilseeds, pulses, plantation crops, livestock, teak, and other tropical hardwoods.

The country strives to promote export earnings. Specific aims include improvement of rice quality, import substitution, expansion of oilseed production by providing improved seeds and fertilizer to targeted areas, diversification of exports by assigning high priority to pulse and bean production, and expanded production of corn for exports.

The whole township program, launched in 1977, aimed at the introduction of modern cultivation methods. The program was originally aimed at providing fertilizers and other inputs required by higher yielding and faster maturing varieties of rice seed. The success of the program prompted the government to provide inputs to 20 other crops including oilseeds, corn, wheat, pulses, and cotton. The program, in conjunction with other research and extension programs, has led to considerable progress in Burmese agriculture. The townships participating in the program continue to receive priority distribution of fertilizer, high-yielding seeds, credit, and other inputs.

The government initiated the second phase of the whole township program in 1984. The first phase, which consisted of nonprice incentives to increase yields and production in selected townships, resulted in spectacular agricultural growth. The second phase goals are to increase supplies of fertilizer, seeds, and credit in targeted townships, improve the extension service, and initiate a crop monitoring system.

The government usually procures about 30 percent of the total rice output for urban distribution, export, and stocks. Farmers are given a quota to fill, and are paid at prices fixed since 1980. Farmers are free to use the remaining rice for home consumption, seed, or sale in the open market. The government distributes rice in urban and deficit areas through a rationing system and families often supplement their diets from the black market. Some rice leaks out of official marketing network since farmers can earn more in the black market than they receive from the government.

The quality of Burmese rice remains low because of antiquated storage, milling, and shipping facilities. International donors are helping Burma modernize its infrastructure to support high-quality exports. Notwithstanding the introduction of high-yielding rice varieties and efforts to diversify agriculture and produce for exports, Burma's agriculture remains traditional.

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CAMBODIA

Leslie Ross

Cambodia is officially governed as the communist People's Republic of Kampuchea (PRK), yet it is the exiled tripartite Coalition Government of Democratic Kampuchea (CGDK) that is recognized by the United Nations, China, and most noncommunist nations. War between the PRK, led by Heng Samrin and supported by Vietnam, and the CGDK, composed of Sihanouk-Son Sann-Khieu Samphan forces, has caused political instability and hampered economic development. A constitution was proclaimed in 1981. However, Vietnam has placed advisors at every level of the PRK government who make or approve all major decisions.

Cambodia is an agrarian country, with agriculture increasing its share of the economy from less than 40 percent in 1970 to 75 percent in 1982. However, the country has changed from an exporter to importer of its primary staple, rice. Rice production has fallen from 3.8 million tons in 1968/69 to about 1.0 million tons in 1985/86. Modest quantities of corn, cotton, jute, kapok, pepper, rubber, soybeans, sugar, and tobacco are also grown.

Agricultural products dominate Cambodia's trade with its key partners, the Soviet Union and Vietnam. In exchange for fertilizers, tractors, fuel, and raw materials for industry, Cambodia exports rubber, timber, tobacco, and other agricultural and handicraft products. Accurate trade data are not available because official foreign trade figures include only trade by the state trading agency and do not include trade between provinces or private cross-border trade with Thailand and Vietnam. Cambodia's primary source of economic aid is the Soviet Union, while Vietnam provides technical and military support.

The PRK, established in January 1979, inherited a peasant society, divided into seven largely autonomous zones. During the communist Pol Pot regime (1975-79), the educational and social class systems, the urban sector, money, taxes, and markets had been abolished and replaced by a state-run agrarian economy, whose goal was self-sufficiency and in which communal living and food rationing were strictly enforced. To increase agricultural production, people were assigned to build irrigation and water control systems without regard to their villages of origin or family ties.

The goal of the PRK, like its predecessor, is a socialized, food self-sufficient economy, with the agricultural sector seen as the key to economic growth. The PRK's first 5-year plan (1986-90) emphasizes food supplies, rubber, timber, and aquatic products. The state continues to own all land, equipment, and major means of production, but initially implemented an agricultural policy that permitted tax-free, private production, consumption, and trade of crops. Foreign aid met the needs of the resettled urban population.

In 1980, money was reintroduced and payment-in-kind ended, although subsidized rice and other essential commodities are still rationed to state employees. The sale of surplus rations and products in the private market continues. However, in 1984 farmers were required rather than encouraged to sell an unspecified part of their output to the state. In 1983, agricultural taxes, called "patriotic contributions," began as well as a three-tier import tax system. The import taxes were designed to encourage local production, contribute to state revenues, and slow the growth in nonessential good imports.

As a result of the Pol Pot regime's ambitious but misguided agrarian revolution, the economy was nearly destroyed, living conditions deteriorated sharply, disciplinary executions increased, and purges of dissenting leaders became widespread. Under the PRK, state plans officially propose greater collectivization of agricultural production, yet most farms remain private, family-run operations, as they were before the Pol Pot revolution. Recognizing the weaknesses of the state-run sector, four groups are recognized: state, collective, family, and private.

Food self-sufficiency has not yet been regained for several reasons, including severe flooding in 1981-84 and inadequate incentives for farmers to produce more than their own consumption needs. In 1986, the government announced that the rice harvest would meet only 80 percent of the country's needs and appealed to the world for emergency assistance. Shortages of draft animals and tools have hindered agricultural expansion and led to some work being done collectively. Agricultural growth has also been dampened by inadequate supplies of fertilizer, which prevents wider use of high-yielding rice varieties, and insufficient facilities to prevent flooding crops. Still, Cambodian farmers since 1979 have been able to consume and dispose of their crops with greater independence than before.

The import rates are modest, partly because of the need for those commodities traded. Insufficient raw materials and energy impede the output of many industrial and consumer goods. Both the agricultural and industrial sectors of Cambodia's economy remain below 1970 levels, keeping the country heavily dependent upon foreign aid.

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INDONESIA

J. Albert Evans

Agriculture is the largest sector in Indonesia's economy. Millions of small farmers cultivate food crops and a few thousand large plantations produce perennial export crops including rubber, oil palm, coffee, and tea. Agricultural development priorities include opening up new agricultural land and increasing production of plantation crops such as rubber and palm oil.

The current government 5-year economic plan extends through early 1989 and ostensibly seeks to maintain self-sufficiency in rice production and to intensify production of secondary food crops. Yet, in 1985, several very successful rice production incentive programs were terminated and fertilizer subsidies are apparently being phased out. Such policies, if maintained, would likely again make Indonesia highly dependent on rice imports within the next decade.

Indonesian economic growth in the 1980's has been generally sluggish because of weak export demand, primarily for petroleum and natural gas, but also for other exports. The government has implemented various austerity measures to restructure the economy and adjust to lower petroleum export revenues. The government is promoting job-creating industrialization and value-added exports. Although Indonesia's industrial sector still exists behind a wall of protective tariff and nontariff barriers, major U.S. bulk agricultural exports to Indonesia enter duty-free or with minimal duty.

The Economy

Indonesia's economy, nineteenth largest in the world, is based primarily on agriculture, mineral and oil exploitation, manufacturing, and trade. Agriculture accounts for about 25 percent of real GDP and nearly 60 percent of employment. Further development of manufacturing has high priority. The nation's economy continues to reflect the health of the general world economy because of its relatively heavy export earnings from crude petroleum and natural gas. Indonesia is a developing country, having a per capita income of only about $500.

During the 1970's, real GDP growth averaged about 7 percent, while booming petroleum revenues provided about 70 percent of total export earnings and government revenues and the basis for rapid economic growth. Growth since 1981 has generally been sluggish, peaking at 6.7 percent in 1984 before slumping to 1.9 percent in 1985 and turning negative in 1986.

Slow growth and development, current account deficits, government-imposed austerity, and increasing foreign debt-service obligations seem likely to continue through the late-1980's, mainly because of generally dim prospects for primary export commodities.

The nation is governed by the 1945 constitution drafted when independence was proclaimed after 300 years of Dutch rule. The president occupies the most powerful position in this highly centralized government.

The Agricultural Sector

Indonesia's dual agricultural sector consists of about 14 million small operations and approximately 1,800 large estates largely producing for export markets. The smallholders, using extremely labor-intensive methods, dominate the production of all subsistence crops and major cash crops except palm oil, sugarcane, and tea. Food crops account for about two-thirds of total agricultural output. Rice, which accounts for about 40 percent of the value of Indonesian food crop production, supplies 85 percent of domestic grain production and about half of daily caloric intake. The major domestically produced and consumed secondary food crops are corn, cassava, soybeans, peanuts, and sweet potatoes. Secondary food crops are usually grown in rotation with rice, where the supply of irrigation water limits multicropping, and separately or in rotation with each other on unirrigated land. Agricultural holdings average less than 0.6 hectare on Java, where 60 percent of the nation's population resides on only 7 percent of its land.

Plantation crops occupy a third of the total cultivated area in Indonesia and are major contributors to export earnings, although contributing less than 10 percent to the nation's GDP. Major agricultural exports are rubber, coffee, palm oil, tea, and forestry products. Estates produce about 30 percent of Indonesia's rubber, 10 percent of its coffee, and about 98 percent of its palm oil. Palm oil has been selected as the top priority estate crop, with output to be sharply increased for domestic use and exports. Indonesia's edible oil sector is dominated by palm oil and by coconut oil, a smallholder crop inefficiently produced. Each of the two oils accounts for over 40 percent of domestic use.

U.S. agricultural exports to Indonesia in 1985/86 were 61 percent less than the $438 million in 1983/84. There are no significant border policies that limit imports of U.S. bulk agricultural products. Raw cotton, wheat, soybeans, soybean meal, and tobacco accounted for 82 percent of total sales in 1985/86.

Policy Goals

The objectives for agricultural development during the current government 5-year plan are: (1) maintain or achieve national self-sufficiency in rice and major secondary food crops and improve dietary patterns, (2) raise farm incomes and improve rural income distribution, (3) provide consumers with food at reasonable and relatively stable prices, (4) create employment for the rural population in agriculture and in agricultural processing industries, (5) increase agricultural exports and reduce imports, and (6) control budget subsidies to producers and consumers, consistent with the above objectives. Fertilizer subsidies have been sharply reduced with the objective being to phase out the relatively expensive program.

Indonesia subsidizes the production of rice, corn, cotton, and soybeans to conserve foreign exchange and to develop its agricultural sector and related industries. Agricultural credit, government irrigation infrastructure, and fertilizer, pesticide, and other input subsidies, and extension assistance are among incentives to enhance agricultural productivity and limit imports.

Recent national budgets have reflected changes in international demand for petroleum, the primary contributor to export earnings and government revenue. Since 1982, the government has implemented various austerity measures to restructure the economy based on lower anticipated petroleum export revenues. These included sharp reductions in fuel subsidies, elimination of food and export subsidies, two currency devaluations, deferment of large capital projects, tax reform, and improving the efficiency of the customs service. However, Indonesia's industrial sector still exists behind a wall of protective tariff and nontariff barriers that hinder the nation's movement toward a more open, flexible economy able to compete in the international market.

Principal policy objectives for the development of the oilseeds and oils economy are: (1) increase production of major oil crops (including oil palm, coconut palm, and soybeans), (2) satisfy rising domestic demand at reasonable and relatively stable prices, and (3) expand exports if possible. A comprehensive and consistent policy approach has not been implemented for the oilseeds, oil, and oilmeals sector, although the government is moving in that direction.

Indonesian agricultural policymakers continually face difficult agricultural development choices. The issues are complicated because much marginal land that can produce food crops other than rice can alternatively produce perennial tree crops including oil palm, coconut palm, and rubber. The central problems are to determine the most efficient use of the country's land resources, the best means of diversifying dietary patterns, and the degree of emphasis to devote to exportable tree crops.

Agricultural Programs

Food security oriented agricultural policies since the late 1960's have primarily focused on rice by investing heavily in irrigation, fertilizer production and distribution, and credit and price support programs. Government food crop programs have aimed to expand crop production through increasing both yields and areas under cultivation. Rice dominates budget allocations to the agricultural sector. The government now is attempting to increase the participation of producers of corn, cassava, sweet potatoes, peanuts, and soybeans (secondary food crops) in output-expanding programs similar to those introduced for rice in the mid-1960's. These programs resulted in rapid farmer acceptance of high-yielding rice varieties and associated production technology, including fertilizers and chemical pesticides.

BULOG is the government agency responsible for the national food/rice price stabilization program. In regulating prices of rice and other major food crops, BULOG's strategy includes: (1) direct intervention in the market, mainly for rice and sugar, (2) maintenance of price ceilings for consumers and price floors (supports) for producers, and (3) reliance on trade to sustain per capita consumption at desired levels. BULOG is the sole importer of rice, wheat, sugar, corn, soybeans, and soybean meal. It maintains reserve stocks of rice and other commodities to stabilize retail prices through market injections of additional supplies as needed.

The government continues to encourage the development of new oil palm plantations under the nucleus estate and smallholders (NES) scheme. New plantations are being approved for development in Sumatra, West Kalimantan, Sulawesi, and Irian Jaya.

Agricultural Program Evaluation

An ample domestic supply of rice at reasonably stable prices remains the foremost political concern. Indonesia's remarkable success in increasing rice output since the 1960's resulted in its becoming a rice exporter in the mid-1980's. However, rice output declined slightly in 1986 and may not increase in 1987. Per capita rice output and consumption had consistently trended higher until leveling off since 1984. As recently as 1977-80, Indonesia was the world's leading rice importer, averaging about 1.9 million tons a year, drawing heavily on foreign exchange reserves, even during relatively prosperous years. Government-imposed austerity and newly achieved domestic rice sufficiency led to the 1985 termination of several very successful rice production incentive programs and the recent reductions and planned phase-out of fertilizer subsidies.

A new super-intensification program to expand rice output was introduced in West Java for the 1986/87 crop. Plans are to extend this program to other major rice producing regions of Indonesia in the near future. The new intensification program, like the programs terminated in 1985, provides various inputs including seed, fertilizer, and pesticides to producers at preferential prices. Still, Indonesia's domestic rice sufficiency is threatened by pressures on the government to reduce subsidies to rice producers during the current era of general austerity.

In the early 1980's Indonesia widened its focus in order to increase the output of major secondary food crops. Corn and soybeans are the secondary crops receiving major emphasis. Results have been spectacular in the case of soybeans, and noteworthy for corn. Corn yields per hectare have increased steadily due to better management and the increasing availability and acceptance of high-yielding hybrid seed. Yet, largely due to climatic variability, the total area and production of corn fluctuate more from year to year than those of any other secondary food crop.

Soybean output has about doubled the 536,000 tons produced in 1982/83. This output gain resulted from expanded area and higher yield. All soybeans in Indonesia are for food. The nation's first soybean crushing facility is being constructed. The government has motivated farmers to expand soybean output by providing an "input package" of credit, seed, fertilizer, and extension services. Although the government goal of output self-sufficiency by the end of 1986 was not realized (375,000 tons were imported), official data reveal remarkable progress in increasing domestic production in recent years.

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LAOS

Leslie Ross

Following 30 years of warfare, the communist Lao People's Democratic Republic

(LPDR) was established in 1975. The LPDR economy has grown steadily, yet has one of the world's lowest per capita incomes. It is characterized by subsistence agriculture and a small industrial sector geared toward supporting the agricultural sector. Agriculture (including forestry) employs about 85 percent of the population, supplies a third of export earnings, and has increased its share of GDP to 60 percent.

The main agricultural crop is rice which is produced primarily for home consumption. Other crops grown include coffee, corn, cotton, root crops, soybeans, sugarcane, tobacco, and vegetables. All land is owned by the state, yet over 75 percent of cropland is controlled by private farms. Forests cover an estimated 40 percent of total area and provide the second largest source (after hydroelectric power) of foreign exchange. Livestock output is small and hampered by diseases, while fish provide an additional source of income and protein for many families.

The country remains heavily dependent on foreign aid, supplied mainly by the Soviet Union, Vietnam, and other socialist countries. The chronic trade deficit has worsened in recent years, international reserves are low, and foreign debt service payments have risen. Still, there has been an overall balance of payments surplus since 1982 as foreign aid has more than offset the widening trade deficit.

Beginning with the 1978-80 interim development plan, policy goals of the LPDR have focused on: (1) food self-sufficiency, (2) development of industry primarily based upon hydroelectricity and forestry, and (3) improvement of the transportation network. Expansion of rice production was encouraged through investment in irrigation and expansion of state and cooperative stores exchanging subsidized manufactured goods for rice. The second 5-year plan (1986-90) has shifted the emphasis in agriculture from expansion of irrigated land to adoption of better farm techniques, and from rice to other crops and forestry. In an effort to stimulate the economy, limited capitalist-style reforms have been introduced to the public sector, which accounts for more than 90 percent of industrial output and more than 75 percent of the transport and commerce sectors.

Although private trade of rice, coffee, and cardamom is restricted or prohibited, private retail markets exist for nearly every commodity. In 1986, provinces became eligible to export and retain part of their earnings. The government sets procurement prices and regulates retail prices. However, it is active in only rice, coffee, wood, and forest products. The government procures about 5 percent of rice production and obtains another 3 percent through taxes levied on rice land.

Rice self-sufficiency was attained in 1984. However, yields of rice and other crops are very low. In addition, agricultural harvests remain highly vulnerable to poor weather. Historic gains in production resulted mainly from area expansion, while further production gains, particularly for crops other than rice, continue to be constrained by low prices and a lack of access to markets, agricultural credit, extension services, improved seed varieties, and modern inputs. In line with the government's policy to expand state control over agriculture, which is largely private, the supplies of agricultural credit, modern inputs, and machinery are monopolized by the state and first priority is given to state cooperatives. These inputs are subsidized to compensate for low official prices.

The highway to Vietnam's port in Da Nang was successfully reconstructed by 1985, causing some shift in trade of transit goods away from Thailand to Vietnam. Imports rose rapidly with this improvement However, exports have declined largely because of inadequate development of and incentives to specialize in exportable commodities. Hydroelectric power exports, accounting for two-thirds of total export value, are an exception. Inefficient management by state enterprises, transportation difficulties, and low official procurement prices continue to depress the country's export performance, including its traditional exports of forestry products and coffee.

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MALAYSIA

J. Albert Evans

Malaysia's dual agricultural sector consists of: (1) a relatively small number of large export-oriented estates that account for more than 50 percent of overall agricultural output by mainly producing natural rubber, palm oil, and/or cocoa, and (2) many thousands of relatively impoverished smallholders that mostly produce subsistence crops including rice. Agriculture accounts for about 20 percent of GNP and its share continues to decline. Agriculture is targeted to grow 2.6 percent a year through 1990, compared with 3.4 percent in 1981-85.

Long-term policy stresses increasing palm oil and cocoa production while sustaining that of rubber and timber. Expanded output of fruits, vegetables, and poultry and eggs is also deemed important, in part to reduce the nation's large food import bill. Plans are to keep the agricultural sector generally market oriented, except that rice, produced at high cost compared with surrounding countries, will remain highly subsidized.

Malaysia imposes little or no duties on such basic commodities as rice, corn, wheat, soybeans, and cotton. Higher duties, averaging 30-40 percent, apply to most processed agricultural products. The government is seeking growth of local food processing to dampen rising food imports. Overall trade policy objectives are to increase foreign exchange earnings while limiting imports, especially of processed products through import substitution measures. In 1985, Malaysia's agricultural imports were equivalent to $1.56 billion, of which the U.S. share was 9 percent, consisting mainly of fruits and vegetables, leaf tobacco and tobacco products, wheat, and cotton.

The Economy

Malaysia is governed as a constitutional monarchy, having a cabinet and prime minister. Over several decades, Malaysia evolved from an agricultural economy dependent on rubber and tin exports, to a more diversified economy exporting electrical components and products, rubber, tin, petroleum, liquified natural gas, palm oil, cocoa, and other goods. The industrial sector contributes about a fifth to GDP, and provides employment for over a sixth of the workforce. Leading 1985 exports and their percentage of total export earnings were: manufactured goods (35 percent), petroleum (23 percent), rubber (8 percent), sawlogs (7 percent), palm oil (10 percent), and tin (3 percent).

Malaysia's GDP was $26.7 billion in 1986, led by the manufacturing and agriculture sectors. Following an average of 7-8 percent annual real growth in 1981-84, Malaysia is experiencing its third consecutive year of very low growth and activity, with sluggish recovery projected through the 1980's. Economic development is guided by the government, with the fifth Malaysia plan covering 1986-1990.

In February 1986, the industrial master policy was devised. The goals of this plan are to speed up development of the manufacturing sector, promote opportunities for the efficient utilization of Malaysia's abundant natural resources, and lay the groundwork for developing industries through upgrading technological expertise.

The Agricultural Sector

Although agriculture's relative importance in the economy has declined, the sector currently accounts for 20 percent of GDP, provides employment for 35 percent of the workforce, and contributes 40 percent of export earnings. Malaysia continues to exploit its strong comparative advantage in producing tropical tree crops, especially rubber and palm oil, on large, efficiently managed estates. Malaysia's major export crops, palm oil and rubber, together account for more than half of agricultural output. With rice included, the three account for about two-thirds of total output.

Over the last 25 years, Malaysia has become a major vegetable oil producer and the second largest exporter of vegetable oils. Output has been boosted by rapidly expanding the area planted to oil palms and by increasing oil yields. The main oilseed imported is soybeans for crushing into soymeal to supply the rapidly growing animal feed industry.

Malaysia is essentially self-sufficient in poultry and pork production, but it produces less than half its beef and mutton and has only a limited government-sponsored smallholder dairy industry. Domestic milk production is only about 4 percent of total requirements. Almost all corn is imported, 1.2 million tons in 1986, 89 percent from Thailand. Malaysia produces no wheat and relies on imports, which grew 5-7 percent a year until leveling off during the current recession.

Immediately following independence in 1957, Malaysia embarked on a drive to achieve self-sufficiency in rice production. By 1970, rice output had risen by more than a third, reaching 1.1 million tons compared with 1.2 million tons in 1986. About 60 percent of the rice area is irrigated and around 50 percent is growing high-yielding varieties. Rice imports accounted for 54 percent of domestic use in 1957 but only 19 percent of it in 1986. Thailand, being nearby, supplies nearly all Malaysian rice imports in most years.

Policy Goals

Malaysia's 5-year (1986-90) economic plan targets annual average real GDP growth at 5 percent. The manufacturing sector has been earmarked to provide the major impetus to growth. Public development spending in 1986-90 is budgeted at M$74 billion, compared with M$80 billion in 1981-85.

Malaysia's national agricultural policy (NAP) through the year 2000 calls for concentrating more on highly profitable crops, such as palm oil and cocoa, and for increasing farm productivity through such innovations as mechanization and pooling of land. Policy guidelines for the palm oil sector emphasize that production should be expanded through the establishment of well-managed estates, the adoption of improved technology, and increased efficiency. The NAP has dropped the long-held goal of self-sufficiency in rice production. It also discourages stepped-up beef and dairy production and planting crops for animal feed.

The NAP calls for opening more new agricultural land and for greater production efficiency on existing land. It seeks solutions to rural poverty by encouraging migration away from overpopulated rural areas to government land. It also recommends continued government support services for farmers, such as credit and extension advice. Central management will attempt to consolidate small uneconomic plots of unused land into larger plots to improve productivity and facilitate mechanization. Continuing efforts in diversification will emphasize the production of fruits, vegetables, and other food crops.

Policy guidelines for palm oil emphasize that production should be expanded through establishment of well-managed estates, adoption of improved technology, and increased efficiency. About 50 percent of the total oil palm area is in private estates. The public sector, dominated by the federal land development agency, is likely to grow faster than the private estate sector in coming years.

Malaysia's overall trade policy objective is to increase foreign exchange earnings through the expansion of exports and the promotion of exports with higher value-added.

Agricultural Programs

Smallholder producers of rubber, rice, coconuts, and tobacco continue as beneficiaries of government policies and programs designed to increase farm productivity and reduce poverty. For example, small rice farmers are supplied with free seed and fertilizer, low-interest production credit, free irrigation water, and subsidized pesticides. Government officials continue to encourage migration away from overpopulated rural areas to government-developed plantations.

Malaysia's current rice policy is mainly administered by the national padi and rice board (LPN) which operates a network of rice drying complexes and mills, purchases rice from growers at "floating" support prices above the government guaranteed minimum price, and is responsible for importing all rice. Also, to protect consumers, the board establishes ex-mill, wholesale, and retail ceiling prices for many grades of rice.

The government does not control or support producer prices for oilseeds sector products, including palm oil. There is a longstanding export tax on palm oil products with rates based on international market conditions. Government regulation of the industry has increased with the rapid expansion of the palm oil sector.

Malaysian import duties for bulk foods and feeds such as rice, corn, wheat, soybeans, and cotton are nil or negligible. Imports of processed items, however, are hindered by high import duties which average 30-40 percent.

Agricultural Program Evaluation

The NAP seeks the revitalization of Malaysian agriculture through more efficient use of resources while maximizing income from agriculture. With the exception of rice, Malaysia's agricultural sector is generally free of outright subsidies. In the important palm oil sector, commodity prices are freely determined by supply and demand. Government nonprice financial assistance includes land development and settlement schemes that focus mainly on producing and marketing palm oil and cocoa, thereby improving rural incomes and well-being.

Palm oil research is funded by a tax on crude oil output and is conducted by the palm oil research institute of Malaysia. The institute has sharply expanded research on palm oil production, processing, end-uses, and techno-economic studies. A technical advisory service effectively promotes wider use of palm oil.

Cocoa industry growth in Malaysia has been spectacular and profitable during the last decade. The industry appears to be making progress in controlling the cocoa pod borer or moth, the major pest. Because Malaysian beans are relatively high in acidity and shell content and are small and irregular, export prices are often discounted 3-4 percent. In 1984, the federal marketing authority established a mandatory cocoa bean grading system in peninsular Malaysia, but growers in the major producing state of Sabah in east Malaysia have declined to implement it there. The new grading system has resulted in peninsular Malaysia beans trading at a premium to Sabah beans. Malaysia's cocoa export competitiveness would be further enhanced with a similar mandatory grading system in Sabah.

Although the NAP stresses innovative mechanization and pooling of land, this policy's practical application to rice farming, given the overwhelming incidence of very small high-cost producers, is apt to be quite limited. Shortrun socioeconomic and political objectives that result in high subsidies tend to perpetuate structural inefficiencies and hinder the transfer of sector resources elsewhere. Economic and social barriers to efficient land use include the attraction for alternative employment, the cultural importance of land holdings, inheritance laws that reduce the average size of operating units, and state government land use policies.

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THE PHILIPPINES

Leslie Ross

The Philippines is a predominantly agrarian country that has achieved self-sufficiency in its major staples, rice and corn, while continuing to be a major supplier of coconut products, tropical fruits, minerals, and forestry products to the world market. Agriculture's potential as a source of income and export growth has long been neglected in favor of an industrialization strategy, but is now seen as playing a key role in the country's economic recovery. The Philippines is a net exporter of farm products (which are a declining but still important source of foreign exchange), while food imports account for less than 10 percent of the total import bill. The United States is a major agricultural supplier and market for the Philippines.

The Economy

The Philippine economy, which ranks in the lower middle range of developing countries, is export-oriented. The country is well-endowed with natural and human resources. Following over 300 years of colonial rule under the Spanish, then nearly 50 years under the United States, the Philippines gained independence and established a democratic form of government in 1946. On February 25, 1986, a relatively peaceful revolution brought an end to nearly two decades of autocratic rule. Since then, the Philippines have been rebuilding its institutions along democratic lines by restoring the writ of habeas corpus, ratifying a new constitution, and scheduling congressional elections.

Between 1946-76, the economy grew at an impressive rate of 6 percent a year in real terms. Through the 1960's, import substitution motivated the rapid expansion of a highly protected industrial sector, while the agricultural sector was left to develop as it had during the colonial period. This strategy failed to absorb the rapidly growing labor force, leading the government to promote labor-intensive export industries. In addition, the benefits of the growth have been unequal, causing the highly skewed distribution of wealth to worsen.

A steady accumulation of foreign debt allowed the Philippines to continue financing large-scale infrastructure projects despite the oil price shocks of the 1970's and chronic current account deficits. The deficits were largely caused by the nation's trade and industrial policy, which failed to graduate the manufacturing sector to the export sector from the domestic market and discouraged agricultural production through export taxes and marketing and price controls. As the nation's financial indicators deteriorated in 1981-82, the credit mix became increasingly skewed toward short-term commercial bank loans. Lack of confidence in both the political and financial systems led to capital flight and drying up of foreign loans. In facing its worst crisis since World War II, the Philippine economy has been marked by high unemployment, rescheduling negotiations for its $27-billion debt, weak export earnings, uncompetitive import-substitution industries, and widespread poverty.

The current development strategy aims to utilize the country's comparative advantage arising from its agricultural and labor resources. The Philippines aims to comply with a growth-oriented strategy, designed in conjunction with the International Monetary Fund. Despite widespread domestic and international support for President Aquino's administration, the political situation remains tenuous, particularly because of the upcoming congressional elections, a strong communist guerilla force, militant unions, and a restive military.

The Agricultural Sector

Philippine agriculture provides 25-30 percent of national income, about a third of merchandise exports, and over half of total employment. During the last 30 years, population pressure and traditional inheritance customs have led to a steadily decreasing average farm size, reckless deforestation, and high tenancy rates. In the Philippines, about two-thirds of all farmland is devoted to food crops, with the remaining third to commercial crops. Rice, corn, and coconut are the leading crops, but sugar, bananas, pineapples, rootcrops, abaca, coffee, and tobacco are also grown. With the exception of poultry, backyard operations characterize the Philippine livestock sector. Per capita meat consumption remains low and output is small because of high production costs and relatively low purchasing power for most consumers. As a result, fish supply much of the protein in the diet.

The agricultural sector has long been neglected and discriminated against as the government embarked on its industrialization strategy. During the 1950's, the sector grew primarily because of increases in area. The 5-percent annual growth of the 1970's largely reflects the Masagana 99 rice self-sufficiency program which raised rice productivity. After rice self-sufficiency was achieved in 1977, there was a slowdown in farm sector growth as marked by low productivity, declining investment, and poor access to bank credit.

Policy Goals

The aim of the government is to lay the foundation for an equitable, efficient, and ecologically sustainable growth in the agricultural and rural sector. Unable to greatly expand area harvested, current Philippine agricultural policy stresses increasing productivity by: (1) removing macroeconomic biases against agriculture, (2) encouraging diversification of exportable crops, (3) improving rural incomes, (4) strengthening conservation policies, (5) expanding land reform, and (6) providing better institutional and infrastructural coordination. Food security in rice and corn will continue to be important. However, in keeping with the government's longer term goal to decentralize development activities, the actual crop mix will be left to regional and private initiative.

Recognizing its comparative advantage in agricultural production, the Philippines seeks to expand markets for its export commodities. Emphasis is placed on food processing industries, such as meat, poultry, vegetable, and fruit products. The Philippines continues to have high import tariffs and import restrictions for many agricultural commodities, except by tourist- or export-oriented businesses.

Agricultural Programs

Compared with the 1950's and 1960's, when the private sector was the primary engine of growth, the government began to expand its role in development by the early 1970's. Recognizing that area expansion could no longer be counted on to fuel agricultural growth, Government programs designed to modernize farming have centered on expansion and improvement of irrigation facilities, agricultural research, land reform, and the rice self-sufficiency credit program (Masagana 99). The government has subsidized consumer prices while attempting to support rice producer prices by procuring 10 percent of the rice harvest. During the 1970's, the government gradually became the sole trader of key Philippine commodities and agricultural inputs, as the private sector continued the local trade of farm goods.

To improve efficiency and production incentives, the government has: (1) removed trading monopolies, export taxes, and price controls, (2) liberalized imports of inputs, (3) increased government expenditure on infrastructure, particularly farm-to-market linkages, and (4) consolidated the institutions involved in agricultural planning, credit, and policy.

Agricultural Program Evaluation

In recent years, food supply has appeared adequate to meet the country's needs. Yet, income-related malnutrition has recently been increasing. The government's longstanding priority of self-sufficiency in food staples (except wheat) was largely reached in 1977 with the attainment of rice sufficiency. However, this success came at significant cost to the rural financial system, which is still in arrears from nonrepayment of loans. After 1977, the urban consumers received the major benefits of higher rice productivity as the real price of rice declined. By the early 1980's, production of major crops (particularly rice, sugar, and coconut) had stagnated. Due to the rapid population growth, expansion of farmland is increasingly limited, while Philippine yields of many crops are among the lowest in Asia.

Because of past distortions of price and access to credit, all crops have not been assisted equally and some farm activities are more efficient than others. In addition, political considerations have often outweighed economic rational for infrastructure improvement, resulting in high transportation and distribution costs.

Until recently, agricultural trade policy taxed agricultural exports, yet did not protect agriculture during periods of depressed prices. The rice, coconut, and sugar sectors were the most severely affected. High ad valorem tariff rates continue for many key agricultural imports, while bans on fresh fruits, nuts, meat preparations, and blended Virginia leaf cigarettes are scheduled to be lifted by May 1988. The import policy has resulted in smuggling and high costs to consumers for these items.

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SINGAPORE

J. Albert Evans

Singapore's small size and high population density have resulted in annual food imports valued at more than $1 billion, including all rice, the major cereal staple. The relatively high earning power of its citizens generates diversified and highly competitive demands on suppliers of agricultural bulk and processed products. Total U.S. agricultural exports to Singapore amounted to $118 million in 1986, up 4 percent from 1985. Leading items included poultry meat, nuts, fresh and processed fruits and vegetables, and coffee. The nation's strong dependence on trade accounts for its continuing status as a basically duty-free nation. The country anticipates moderate economic recovery through the 1980's due to lingering effects of a severe recession in 1985, the first in the nation's history.

The well-managed city-state of Singapore, with extremely limited natural resources and an increasingly important export-oriented manufacturing sector, depends on trade. Situated at the crossroads of international shipping and air routes in Southeast Asia, Singapore serves as a center for transportation and communications. It processes, packs, and markets regional raw materials, such as rubber, palm oil, timber, coffee, spices, and grains. Also, Singapore distributes manufactured products of industrialized countries to nations in the region, and conducts trade-related activities such as banking, shipping, insurance, and storage.

Since the mid-1960's, Singapore has experienced rapid economic growth. Nominal per capita income reached $7,123 in 1986, among the highest in Asia. Singapore's recession-racked economy shrank 2 percent in 1985 but recovered slightly to register 2-percent growth in 1986. Only slight to moderate growth is forecast through the 1980's.

Agriculture accounts for less than 1 percent of the nation's GDP. Singapore's land for farming will continue to shrink. Singapore's food self-sufficiency varies from about 20 percent of its vegetable needs to more than half of its poultry and pork requirements. It must import at least 80 percent of the food consumed by its population of 2.6 million, at an annual cost of more than $1 billion. Rice, the major cereal staple, is totally imported.

In the 1990's, Singapore's total land available for farming may be limited to 1,500 hectares, with farmers to be grouped in high technology research and development parks. Land may be leased to local farmers and investors and to multinational agro-based companies for horticulture, fish and aquarium farming, poultry and bird breeding, crocodile breeding, and dairy cattle and frog farming.

Singapore will likely continue to be basically a duty-free port without trade restrictions. U.S. agricultural products face a highly competitive and diversified market in Singapore.

Trade barriers on imports of agricultural products are almost nil except for duties on sugar, tobacco, and alcohol. The greatest potential to expand U.S. agricultural sales to Singapore is for high-value and value-added products. Singapore's relatively high per capita income is sufficient to avoid any need for U.S. food aid or credit programs. However, there is some subsidized competition, primarily from the EC in dairy and whole poultry products. Many supplier countries are competing for this growing market.

Despite the government's announced plans to reduce or eliminate production of hogs and poultry because of environmental pollution, it seems certain that local production of both pork and chicken will still exist in 1990. Because of protests and the political implications of adding to unemployment, the government seems to have eased the initial phase-out schedule that concentrated mainly on small-scale hog producers, a group unable to afford pollution control investments. However, production is expanding at Singapore's joint-venture pork and poultry farms in nearby countries. Imported feed grains, soybeans, and soybean meal will accordingly be increasingly transhipped to neighboring countries.

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THAILAND

Leslie Ross

Over the last two decades, Thailand's agriculture has changed from one dominated by rice to a more diversified agriculture featuring export-oriented crops such as rubber, corn, cassava, sugarcane, and pineapples in addition to rice. Although agriculture's share of GDP has declined from 40 percent in 1960 to 18 percent in 1985, it has averaged about 4 percent growth per annum. The farm sector continues to dominate the Thai economy, with as many as two-thirds of the population dependent on agriculture for a living and its commodities providing the single largest source of export earnings. Thailand is one of the world's leading exporters of food and is a major U.S. competitor.

The Economy

Thailand's economy rests on several basic activities and on exports from them: farming and fishing, mining, and light industrial production. Thailand is a constitutional monarchy led by a civilian/military coalition but stabilized by well-entrenched bureaucratic institutions and a popular royal family.

Sustained economic growth in Thailand was interrupted by World War II and did not resume until the late 1950's because of wartime reparations and the government's unsuccessful change of policy from laissez-faire to active intervention in the economy. During the 1960's and the 1970's, growth averaged 7 percent a year and was broadly based, with all sectors participating in the growth. In contrast to the prior 15 years, this growth was led by private initiative, while the government played a supporting role. The government assisted the private sector by investing in projects that improved the country's agricultural, transport, and power infrastructure. A combination of several factors--Thailand's abundant natural resources, its enterprising and mobile private sector, cautious economic management, and relative political stability--have enabled Thailand to become one of the most successful and rapidly developing countries.

During the 1980's, the slowdown in Thailand's economy paralleled other middle income countries, which were buffeted by deteriorating terms of trade, declining growth of export volumes due to recession in developed countries, and rapidly growing debt service obligations due to rising interest rates. The sixth plan (1987-91) aims to achieve average economic growth of 5 percent per year, largely based on strong export growth. The Thai economy is relatively free of controls and will continue to rely primarily on private rather than public initiative.

The Agricultural Sector

In the mid-1970's, Thailand's farm sector began changing from a traditional, extensive agriculture toward a more intensive, market-oriented sector. The sector's growth has slowed compared with the 1960's and 1970's. Growth in that period, averaging 4.5 percent per year, was achieved largely through expansion of cultivated area and irrigation and Thailand could export its surpluses at attractive world prices. During the 1980's, the increasing use of marginal land has lowered productivity, while the sharp reduction in commodity prices has dampened production incentives and kept average yields among the lowest in Asia.

Rice remains the leading crop, currently occupying about 60 percent of the farmland. However, some farmers have diversified into cassava, corn, sugarcane, pineapple, rubber, sorghum, cotton, soybeans, and tobacco. While subsistence farming persists in the northeast region and some other poverty areas, commerce clearly dominates the fate of most farmers today. Most farms are small and owned by the farmers. Since the 1970's, Thailand's livestock sector has been marked by rapid growth in poultry and swine production, while the cattle industry has stagnated. Although supplies are dwindling, fish is the second largest source of protein in the Thai diet after rice.

Policy Goals

Government agricultural policies have been designed to maximize export earnings while providing adequate low-priced food for domestic consumers. To do this, the government has used instruments such as export taxes, quotas, bilateral trade agreements, price supports, and ceiling prices. Crop diversification is a key component of development, which continues to be led by the private sector, while the government provides research and physical infrastructural support. Irrigation has accounted for the largest share of public investment in agriculture for the past 15 years.

Agricultural Programs

The dynamic growth of the agricultural sector has been led largely by the private sector. The private sector actively encouraged production by not only providing key services (such as transportation, financing, storage, input supply, and processing facilities) but by locating export markets. The government has encouraged agricultural output and complemented the private sector's efforts in several ways. The government is responsible for: (1) expanding irrigation by 7 percent each year between 1961 and 1976, (2) investing in crop research, notably for distributing improved rice, soybean, rubber, and cassava varieties, (3) constructing roads and highways, and (4) expanding institutional sources of farm credit.

Thailand uses tariffs, quotas, and licensing arrangements to restrict the flow of agricultural commodities. However, it became a charter member of the Group of 14 "Free Traders in Agriculture" in 1986. As in the past, the private sector is the primary trader of agricultural products, although weak agricultural export prices have prompted the government to become more open to countertrade and long-term bilateral agreements.

Agricultural Program Evaluation

Thailand's agricultural sector has been successful in meeting its domestic food requirements and in generating substantial foreign exchange earnings. Yet, the problems of low yields and low incomes remain. In balancing demand between home and abroad, export taxes have been used to support a cheap food policy, pay for public investment projects, and regulate the food surplus. This policy has tended to protect urban consumers from high domestic and world prices, while exposing farmers to low prices. In addition, studies have indicated that the bulk of the export tax is not transferred to foreign buyers. Instead, it depresses farm prices.

Largely because of falling farm commodity prices, the persistent gap between rural and urban incomes appears to have widened in recent years. This problem is reflected by the increase in seasonal migration that is occurring in the rural sector. The government's price guarantee and price support programs have failed to reach the majority of farmers due to insufficient funding and inadequate storage. The government's investment in irrigation did improve yields in affected areas. However, the policy benefited the already better off regions and the provision of cost-free water meant more inequity. A related issue, malnutrition, continues to be a major concern in the rural areas, where two-thirds of the population live, and urban slums. This problem continues, despite the nutrition programs outlined in Thailand's national economic and social development plans since 1961.

A number of regulatory constraints still impede agricultural development. Included are restrictions on private slaughterhouse operations, the ban on landownership by foreign nationals, the need for land reclassification, and the fertilizer import restrictions. The latter restriction results in high-cost fertilizer for Thai farmers, making their input/output ratio one of the highest in Asia.

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VIETNAM

Leslie Ross

The Socialist Republic of Vietnam, reunified under communist rule in 1976, is primarily an agricultural country. Integration of the country's two diverse regions, the agrarian, market-oriented South and the more industrialized, socialized North, has proceeded slowly. All major decisions regarding the economy are made by the government in the context of its 5-year plans. However, the private sector plays a large role in production and trade. In an effort to revitalize the Vietnamese economy, major policy reforms were introduced in the early 1980's that relaxed some of the socialistic and economic controls. Despite its self-sufficiency policy, Vietnam is a net importer of its major food grain, rice. The recent slowdown in agricultural productivity has caused a decline in agricultural exports, a top source of export earnings.

The Economy

Vietnam was first recognized as an independent state in the 10th century by the Chinese, who had ruled it for nearly 1,000 years. Except for a 20-year reoccupation by the Chinese early in the 15th century, Vietnam retained its sovereignty until late in the 19th century, when it was colonized by the French. The French invested heavily in expanding the canal system in southern Vietnam which, prior to World War II, exported rice. Vietnam's war for independence from the French, known as the Indochina War, began in 1946 and led to the partitioning of Vietnam in 1954. The Vietnam war began in 1964 and continued until 1975, when the South Vietnam government fell. In 1976, the country was officially reunified under communist rule.

Agriculture continues to be the dominant economic activity in Vietnam, although its share of national income has declined as industry has expanded. Industry centers on food processing, mining, and textile production. As one of the world's poorest countries, Vietnam relies heavily on the Soviet Union for balance-of-payments support. In addition, the socialist bloc countries account for three-quarters of Vietnam's total trade, while Japan, Singapore, and Hong Kong account for most of the remainder. Foreign exchange and trade are controlled by the state, which either imports (exports) directly or issues licenses (permits) to local trading firms or centrally managed companies. When export subsidies do not exceed established levels, exports by centrally managed companies are subsidized through the export support fund, while local companies receive support from import profits and from local government. Commodity taxes, especially on tobacco and liquor sales, provide an important source of government revenue.

During 1976-81, Vietnam's rapid population growth outpaced the economy's annual real growth rate of 2 percent. In 1981, price and profit incentives were introduced that reversed the declines in per capita income. As a result, annual economic growth during 1982-84 averaged about 7 percent. With the economy improving, the socialization of the south again became a priority. Free market activities were restricted, heavy taxes were assessed, and agricultural collectivization was accelerated. These policies caused the economy to slow in 1985 and 1986, as agricultural output nearly stagnated and industrial production slowed.

The Agricultural Sector

Agriculture accounts for more than 40 percent of Vietnam's national income, employs nearly 70 percent of the workforce, and is the country's second largest source of export earnings, after handicrafts. Yet, less than 20 percent of Vietnam's land area is devoted to farming. Food imports usually account for less than 10 percent of total imports. While export crops tend to be grown on state farms and most of the farmers in the north and central regions belong to producer cooperatives, agriculture in the south remains largely private.

About 80 percent of the country's farmland is devoted to rice, which is cultivated mostly along the Mekong River in the south, but also along the Red River in the north. Roughly a third of the rice area has adopted high-yielding varieties. Apart from rice, the main food crop, Vietnam produces corn, rubber, tea, coffee, sugar, soybeans, jute, and a variety of fruits and vegetables. The livestock and poultry sector is characterized by backyard operations and dominated by pork production, the preferred meat. Fish provide the other important source of protein in Vietnamese diets, while cattle are used mostly as draft animals. Poultry output is small and comprised of free ranging chickens.

Policy Goals

At the outset of the 1986-90 5-year plan, agriculture is in the forefront of Vietnam's development goals. The communist party of Vietnam views agriculture as a basis for industrial development and industry as an engine for modernizing agriculture.

Attaining food grain self-sufficiency, particularly rice, is a major objective. Peanut, soybean, tobacco, and sugarcane yields are to be raised, with further investment in longer gestation crops of rubber, coffee, and tea encouraged. Aquaculture, especially shrimp, will continue to be relied upon as an important foreign exchange earner. Restoration of irrigation infrastructure in the Mekong River and Red River deltas is a top priority and, along with Soviet aid, is seen as key to meeting the agricultural goals set for the 1986-90 plan.

Agricultural Programs

The drive toward collectivization of southern agriculture was temporarily suspended as authorities sought to reverse the downturn in agricultural production. A new end-product contract system was introduced in 1981, allowing farmers to sell excess agricultural goods on the open market after cooperative quotas were met. In addition, several companies were given greater autonomy to trade and set wages.

Under the end-product contract system, the farmer signs a contract to farm the land owned by the the collective or cooperative and meet a production quota. The cooperative provides land preparation, irrigation, and pest control while the farmer is responsible for transplanting, weeding, and harvesting. The system provides incentives for increased output by setting a production quota to be supplied to the cooperative (determined by the land productivity over the preceding 3 years) and allowing the farmer to sell any surplus on the free market, to sell it to the state at "negotiated prices," or to keep it for domestic consumption. If the farmer does not meet the production quota, the shortfall is made up in the following year.

The production of various cash crops, namely tea, rubber, and coffee, is being assisted by the socialist bloc countries, often in return for guaranteed exports of those products. Efforts to expand area cultivated and to relocate people from overpopulated areas to areas abandoned during the war, called new agricultural zones, are continuing.

Agricultural Program Evaluation

The product contract system successfully boosted farm output, causing agricultural productivity to accelerate to an average annual rate of 5 percent during 1980-84. However, these gains have not been sustained as agricultural growth has slowed to less than 2 percent in 1985 and 1986. Among the main reasons for this are fertilizer and other input shortages, low procurement prices, and poor weather. Domestic fertilizer production has been operating at less than a fourth of capacity because of power outages and inadequate supplies of raw materials. Productivity has also been hampered by inefficient use of and lack of spare parts for farm machinery.

Because of a widening budget deficit, price reforms were initiated in 1985 that were designed to eliminate subsidies, rations, and price distortions; expand the public sector's role in distribution; and more efficiently allocate resources. The reform was unsuccessful, with spiralling inflation adversely affecting agricultural production and procurement. The new agricultural zones relocation program has been frustrated by inadequate infrastructure and financial resources.

The weak state of Vietnam's economy dominated the sixth party congress held in December 1986. Despite much discussion and renewed determination to solve the country's economic problems, no clear programs or measures emerged.

REGIONAL SUMMARY OF SUB-SAHARAN AFRICA

Carl Mabbs-Zeno

Sub-Saharan Africa stretches from Mauritania on the Atlantic Ocean in the west to Somalia on the Indian Ocean coast in the east, to South Africa on the southern tip of the African continent, and includes several island nations in both the Atlantic and Indian Oceans. Although population density is low, its distribution is uneven. Sub-Saharan Africa is the only major region in the world where population growth rates exceed food production growth rates. Twenty-five of the 36 countries identified by the United Nations as being least developed are in the Sub-Saharan region. Agriculture typically provides at least 50 percent of both GDP and employment.

The history of government involvement in Sub-Saharan agriculture shows a pattern of net support for consumption and net taxation for production. Principal government intervention mechanisms include trade monopolies, direct trade barriers, regulation of foreign investment, foreign currency restrictions, currency overvaluation, and subsidized retail prices. Relatively low levels of input subsidies, research, and irrigation are used.

The failure of both food production and GDP to keep pace with population growth, the famines of 1983-85, and unmanageable debt burdens resulted in an international review of African development policies, with an emphasis on agriculture, and renewed domestic willingness to implement change. Two reform programs dominate policy considerations. The first calls for a shift in development focus from building infrastructure and developing human resources to increasing crop output. It recommends reduced trade barriers, open market valuation of currency, privatization of parastatals, and more open domestic markets. The other approach targets self-sufficiency in foodstuffs using trade barriers and development similar to the "green revolution" in Latin America and India.

Privatization and trade liberalization have gained wider acceptance in recent years. By early 1987, 22 of the 45 Sub-Saharan countries were undertaking structural adjustment through the World Bank or the International Monetary Fund. Since 1983, major currency devaluations occurred in Equatorial Guinea, Ghana, Guinea-Bissau, Nigeria, Madagascar, Somalia, Sudan, Tanzania, Zaire, and Zambia. Since 1985, at least eight countries have ended state monopolies for marketing of particular agricultural goods (Congo, Guinea-Bissau, Malawi, Niger, Nigeria, Sierra Leone, Somalia, and Zambia). At least six countries, including Benin, Ghana, Guinea-Bissau, Nigeria, Sierra Leone, and Togo, have undertaken programs to privatize state involvement in agriculture during the same period. A stronger reliance on market incentives is shown in state tactics to raise agricultural productivity and to reduce import demand. Private investment, including foreign investment, is encouraged, especially in agriculture. These countries, along with Mozambique, Senegal, Uganda, and Zaire, cited by the World Bank in 1981 as already enacting privatization programs, account for more than half the Sub-Saharan population.

With very large debt burdens, Sub-Saharan countries are aiming at conserving foreign exchange by import substitution and raising producer prices. Producer prices were raised in many countries, mostly after 1983. These measures represented a significant turnabout for socialist countries, such as Guinea-Bissau and Tanzania, which had not previously accepted higher producer prices as a legitimate tool for raising output.

At the same time, consumer prices were raised to lower imports or reduce food subsidies which burden national budgets. This occurred in Guinea-Bissau, Sierra Leone, and Zambia, as in most food-importing countries that devalued their currency, as in Nigeria. However, raising consumer prices has costs; the riots accompanying the price increases in Zambia in December 1986, as well as riots in North Africa, warn that such policy changes are difficult to implement.

Some countries, such as Ethiopia and Zimbabwe, have not followed the continental trend toward freer trade and greater private sector involvement in agriculture, continuing to promote the efficacy of state-led rural development. Other governments, such as in Uganda and Mozambique, have too little control to effect new policies. The strongest reason for not modifying agricultural policy in several countries has been preoccupation with national security. Civil strife marked at least seven countries in the early 1980's, with a combined population representing about 30 percent of Sub-Saharan Africa.

Agricultural development in Sub-Saharan Africa in the latter half of the 1980's is plagued by declining per capita income and food production, recurrent droughts, and unmanageable debt. Under pressure from international donors and lenders, African governments have increasingly turned to privatization of domestic markets and trade liberalization. The success of this strategy cannot yet be demonstrated. Uncertain international economic conditions, environmental stress, and rapid population growth make the task extremely difficult. But such reforms seem to be bringing improvement in some countries.

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ANGOLA

Stacey Rosen

Angola gained independence from Portugal in 1975 and is now governed by a Marxist government. The economic situation is dominated by a civil war. Most economic activity is in the hands of the government, but there is room for the private sector in small-scale activities. Per capita GDP of $500 is high relative to other Sub-Saharan countries. Angola is the second largest oil producer in Africa, after Nigeria. Oil contributes over 30 percent of GDP and is the primary source of export earnings. Even though oil prices have fallen, oil revenues have maintained recent levels because of increased output. Agriculture now contributes less than 10 percent of GDP. The United States is Angola's main export market, receiving almost half of Angola's exports (primarily oil). Conversely, the United States supplies only 10 percent of Angola's imports.

Major food crops are cassava and corn which are grown by smallholders. Because of transportation problems, Angola has been forced to import these commodities for the urban consumers. At one time, Angola was the largest producer of coffee in Africa and an exporter of cotton, sisal, sugar, and corn. This is no longer the case. Production of plantation-based crops has fallen substantially since the 1970's. The country does have tremendous agricultural and mineral potential but it has not been exploited because of shortages in trained workers and the conflict in the rural areas. Only 2 percent of arable land has been cultivated.

Defense is the country's priority-allocated half of government expenditures. The authorities have realized that lower oil prices are bound to slow economic activity. For that reason, constraints have been imposed on foreign travel and expenditures. However, reduced expenditures probably translate into less funding for projects affecting agriculture, such as improving the transportation system or providing improved inputs.

Investment has been geared toward fisheries rather than agriculture because output in the fisheries sector is not as dependent on weather conditions or land-based problems such as the civil war. Priorities for agriculture have been expressed, such as emphasizing food crops, private sector participation, and a role for the government in providing technical assistance to small farmers. However, it is difficult to discern whether any actions have been taken.

Prior to independence, Angola was 90-percent food self-sufficient. The lack of skilled labor and foreign exchange coupled with drought and internal fighting have negatively affected the agricultural sector. Domestic output now supplies only half of the food requirements. Cereal output has declined 40 percent since the 1970's. The inadequate transportation network has constrained the marketing of surplus crops, the distribution of inputs and consumer goods, and the provision of extension services.

If some of the expenditures on defense could be freed and allocated to agriculture, the economy could expand significantly. Imports of the staple crops could be reduced which would increase available reserves. Also, the production of coffee and other potential export crops could be expanded to offset probable reductions oil revenues.

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BENIN

Margaret Missiaen

President Kerekou has led Benin since he came to power in a military coup in 1972. Kerekou proclaimed Benin a Marxist-Leninist state in 1975, leading to difficult relations with the West. In the 1980's, the government moved away from centralized controls toward privatization and closer ties with France. Benin's economy is dominated by subsistence farming and re-export of goods to neighboring countries, especially Nigeria. Per capita GDP is about $250. Agriculture is the major economic sector, employing 80 percent of the labor force and contributing a third of GDP. Food crop production, including corn, yams, and cassava, represents about 80 percent of cultivated area. Cotton is the main cash crop. Until 1983, re-exports were Benin's major source of foreign exchange. Since then, a combination of regional trade contraction with increased cotton and petroleum exports has changed the picture. The share of export receipts from cotton increased fivefold. Petroleum earnings averaged 30 percent of the total during 1983-85.

The main policy goals are to achieve food self-sufficiency through increased and diversified production and to develop agro-industry and socioeconomic infrastructure. Another recent policy initiative is to eliminate subsidies for fertilizer and pesticides. After 1975, the government began to nationalize industry and financial institutions. However, since 1983, the worsening economic situation and heavy losses by the parastatals forced the government to reassess its public sector policies. Some public enterprises were sold or merged. Other measures included introducing performance bonuses, increasing retail prices, and ending the monopoly for the import and distribution of wheat, rice, and sugar. Pricing policy has aimed at stabilizing consumer prices of basic commodities through a combination of subsidies and controls while trying to increase farmers' incomes. The prices of essential imports, such as wheat, rice, and sugar, are controlled, while market conditions determine the prices of domestic foodstuffs.

Benin is largely self-sufficient in food crops, with exception of annual wheat and rice imports of 60,000-70,000 tons. Nigeria was a ready market for surplus production, but Nigerian import restrictions have dampened this demand at a time when Benin has food surpluses. The low world prices will force the government to reconsider price policy for cash crops, especially cotton. The Societe Nationale pour la Promotion Agricole (SONAPRA), responsible for cotton marketing and price stabilization, is facing a number of problems. The low world cotton price has reduced Benin's export earnings and lowered SONAPRA's profit margin. Ginning equipment and storage facilities are inadequate to handle the increased production and the markating system is inefficient. The government is moving toward restructuring public enterprises. Rehabilitation is scheduled to begin this year. However, progress in privatization has been slow, and the government still feels that public enterprises have an important role to play in the economy.

BOTSWANA

Lawrence A. Witucki

Botswana's major agricultural challenge is to increase its crop production and maintain its livestock industry in the face of severe natural constraints, including droughts and pests such as locusts. Cattle sales contribute about half of agricultural GDP. The leading crops are sorghum, corn, millet, pulses, peanuts, and sunflowers. Agricultural production has been dropping since the 1970's and, with the sharp growth in mining production, agriculture's share of the GDP is now under 5 percent.

Botswana, after 20 years of independence, has one of the most democratic, liberal, and open governments in the world. It has maintained stability in the unstable environment of Southern Africa. It welcomes foreign investment, but the government role in the economy is large although fiscal policies are conservative.

International trade is very important as meat exports make up a large part of agricultural GDP and food imports continue to increase. The EC, the United States, and neighboring countries, particularly South Africa, are important in Botswana's agricultural trade. U.S. agricultural imports from Botswana are very low, consisting mainly of hides and skins. U.S. agricultural exports to Botswana consist largely of food aid.

Botswana's economy has been growing rapidly. GNP per capita is over $900. Mining, dominated by diamonds, has increased its share of the economy to slightly over 50 percent of the GDP. The challenge is to expand other sectors, as mining provides less than 10 percent of employment. South African mines employ 2.5 times more Botswana citizens than do Botswana mines.

Under pressure from drought, real agricultural GDP has declined in the 1980's and accounts for under 5 percent of GDP. The ratio of permanent pasture to arable land, at 32:1, is one of the largest in Africa. Livestock accounts for much of the agricultural product. Wage employment is growing very slowly in agriculture, accounting for only 5 percent of the total. A large part of the population depends on subsistence agriculture including the keeping of small herds of sheep and goats. Many do not own cattle. Food production, after droughts, has dropped to slightly below 10 percent of requirements, so cereal imports have grown sharply.

Policy Goals and Agricultural Programs

The main policy goals emphasize the private sector while attempting to raise living standards in the rural areas. The goals of the present national development plan are rapid economic growth, employment growth, rural development, and increased economic independence and social equity.

Newer priorities include the use of high mining GDP to develop other sectors and increase the economy's overall viability. Social services are given more priority, including housing and education while private enterprise is continually encouraged. Import substitutions are encouraged to make the economy more independent from South Africa.

The goal of increased food security has been given greater priority. More assistance is to be given to the small, poorest farmers. Dryland as well as irrigated agricultural development is to be stressed.

Foreign investors are encouraged and they are permitted to repatriate dividends. The local currency, the pula, has been delinked from the South African rand. But, Botswana remains a member of the South African Customs Union. As part of its conservative approach, the government holds large foreign exchange reserves, currently well in excess of 1 year's imports.

The Botswana agricultural marketing board (BAMB) was established in 1974 when the grain crop was very large. The board began an emergency purchasing program at a guaranteed price. Many smallholders were served but inadequate storage space forced termination of the program before the entire supply could be purchased. Marketing cooperatives began serving as agents for the board, both for purchases and for the supply of inputs to farmers. Storage space has been increased greatly since 1974 and continues to be increased.

The BAMB provides annually fixed producer prices for a number of grain and legume crops. Sorghum prices were doubled from 1980/81 (April/March) to 1985/86. Since October 1980, the prices have been announced before the planting season. Since 1981/82, the board has adjusted prices geographically, adding transport costs to base prices to encourage more widespread production. Prices on food crops are based on the landed costs of imported grains from South Africa, while nonfood crop prices are based on the potential sales value to the board. Consumer subsidies are not provided. In general, prices are not controlled at retail except for petroleum products. Beef prices were decontrolled in 1984. Botswana intends to maintain commercial beef exports including its EC beef quota for exports at high prices.

Feasibility studies have recently been conducted to determine how to expand irrigated area, particularly off the Okavango and Chobe rivers. Salinity is a problem. So far, irrigation has been restricted to farms along the Limpopo River.

The arable land development program (ALDEP) began in 1980 to provide implements, fencing, catchment, development and draft power to small-scale farmers. In 1985, the accelerated rainfed arable program was initiated to assist both small-scale and large producers, particularly in obtaining draft power and seeds. In 1986, ALDEP was modified to help the smallest farmers. Female-headed households are also being given additional assistance.

Agricultural Program Evaluation

The persistence of drought in Botswana from 1982 thru 1986 restrains evaluation of recent programs. Despite strong earnings from diamond mining, rural poverty has increased and many people depend on food assistance. Well-managed food aid programs have considerably mitigated effects of the droughts.

Commercial beef production and marketing is one of the most developed in Africa. But, the range environment, particularly in communal areas, has deteriorated with overgrazing. Beef production is decreasing. Ownership of cattle appears to have become more concentrated, with some owners' cattle sales making up substantial percentages of the Botswana meat commission's intake. Development of small stock enterprises would serve more rural households near the subsistence level.

Botswana has done well in international trade, generating a large surplus. But, it has not been able to diversify its exports, and remains heavily dependent on the South African transportation infrastructure.

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BURKINA FASO

Arthur J. Dommen

The major agricultural policy problem facing the government is how to translate its revolutionary ideals into development of the country and improvement of living conditions. Burkina Faso (formerly Upper Volta) starts from a very low base since its per capita GDP of less than $200 ranks it with the world's poorest countries. The agricultural sector is the most important, contributing 40 percent to GDP.

The military coup d'état of August 4, 1983, carried out in the name of putting an end to the stagnation and corruption in which the country had become mired after 23 years of nominal independence from France, posed real challenges for the economy. Henceforth, the new government, headed by Capt. Thomas Sankara, was to give more attention than that of previous governments to the rural sector, where 82 percent of the population lives. In international economic affairs, the regime avoided giving offense to the International Monetary Fund (IMF), remained in the French franc zone with the benefits of currency stability which this conveyed, and retained its links with the other Sahel states through the committee to fight the drought, CILSS.

The severe drought in the Sahel in 1983-84 was a serious setback for Burkina Faso's progress in agriculture, which largely depends on rainfall. The main crops are sorghum, millet, and corn, which account for about two-thirds of the total value of crop production and provide about 70 percent of the caloric intake of the average person. The official grain procurement program run by the parastatal OFNACER continued, although it is a relatively small-scale operation in view of Burkina Faso's low rate of urbanization. Livestock raising, a big income earner in the rural sector, was especially hard hit by the drought. A notable success has been registered by cotton production, which continued its upward trend throughout the drought years.

The government's policy goals are development of the country using mainly locally available resources, especially mobilization of labor to work on agricultural and transport infrastructure projects. These goals involve a large measure of persuasion through use of the media and public appearances by Sankara and other leaders in the countryside. The main agricultural policy objective is food self-sufficiency. Since independence, pricing policy has aimed to protect the purchasing power of the population through a system of price controls.

Although the regime nationalized land and talked about setting up state farms to be run by civil servants, the agricultural sector of Burkina Faso changed little as a result of the revolution. Lack of trained cadres was a serious problem, as the regime was based on no grassroots party organization which could serve as a training mechanism. Self-sufficiency is, of course, a constant refrain, but reality dictated that actions go step by step.

Marketing of cotton is entirely controlled by a parastatal, SOFITEX, which is a mixed enterprise with 55-percent participation by the government and 44-percent by the French company CFDT. Marketing of other crops and livestock is handled by private traders and producer cooperatives. Minimum producer prices are fixed by the government for the major cereal crops as well as for cash crops. In order to encourage producers and reduce price distortions, the government in 1985 increased retail prices for sugar and cottonseed oil and producer prices for cotton, peanuts, sesame seed, and shea nuts. Authorities plan to phase out fertilizer subsidies for cereals.

Unlike some other African governments, which promised green revolutions and transformation of the countryside, the Burkina Faso leaders based their agricultural program on internal resources rather than on foreign aid. The notable exception is the ambitious irrigation and land reclamation scheme in the north of the country propounded by a private consulting firm, SERAGI. Burkina Faso, with its smaller size and more homogeneous ethnic makeup than some of its neighbors, has a relatively well-developed system of village organization, an important asset for development with which the revolutionaries have avoided tampering. For a number of years, Burkina Faso has been facing serious economic and financial difficulties arising from deep-seated structural problems. These problems were compounded by a number of factors, including price controls, an inefficient public enterprise sector, and poor infrastructure. Since 1984, the government has taken steps to reduce expenditures and improve revenues. Despite these efforts, external and domestic payments arrears have continued to rise. The government also took steps to improve the performance of public enterprises and to introduce some flexibility in marketing and pricing policies. OFNACER's domestic purchases are limited by financial losses and lack of storage facilities. Grain purchased at official prices was sold at prices which were lower than total costs.

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BURUNDI

Stacey Rosen

Burundi gained independence from Belgium in 1962. The government is a presidential system with a legal system based on German and French civil codes and customary law. Per capita GDP is about $250. Real GDP grew rapidly in 1985 due to increases in agricultural output and an expanding industrial sector (primarily manufacturing).

Agriculture contributes over 60 percent of GDP and employs 90 percent of the population. Agricultural production is highly labor-intensive and uses traditional cultivation methods. Agricultural output is constrained by poor soil which has been damaged by erosion and inadequate management. The main food crops include beans, rice, peas, cassava, corn, sorghum, and bananas. Recent growth in food output has lagged behind population growth.

Marketing of food crops is in the hands of the producers at the local level and private traders between regions, meaning that there is little government intervention. Almost all producer prices are determined by the free market. Cash crop production is allocated only 5 percent of total arable land and it accounts for about 10 percent of total agricultural output. The main cash crops are coffee, cotton, and tea. The producer price of coffee is fixed by the government. Even though producer prices were increased in 1984, they have fallen in real terms. With coffee accounting for 90 percent of export earnings, the economy is vulnerable to weather conditions and world price developments.

The fourth development plan of 1983-87 calls for a change in the structure of the economy, an equitable distribution of income, mobilization of resources for production, and the promotion of education. Expenditures are concentrated in transportation, agriculture, and energy.

Agricultural goals include increasing food production to attain self-sufficiency and expanding and diversifying export crops to increase export earnings. To achieve these goals, the government has expanded cultivated land area, slowed soil erosion through reforestation, and provided better extension services and inputs. For export crops in particular, the government has emphasized improving product quality and marketing. Planting of new, higher yielding coffee trees has been encouraged along with improved cultivation methods and greater use of fertilizers and insecticides.

Coffee has responded to these policies, with production showing an increasing trend since 1978. However, output of other crops has not been good. These policies fail to address the problem of low producer prices. Increased real producer prices, when combined with the efforts mentioned above, would certainly increase the probability of attaining self-sufficiency and increasing export earnings.

CAMEROON

Margaret Missiaen

Agriculture, including livestock, forestry, and fishing, contributes 20 percent of Cameroon's GDP. The principal goals of the current development plan include food self-sufficiency, expanded production of export crops, increased industrial use of domestic raw materials, and improved infrastructure to promote trade and regional development. Agricultural products account for about 30 percent of Cameroon's exports and nearly 10 percent of imports. U.S. agricultural exports to Cameroon fell from $15 million in 1985 to $5 million in 1986. U.S. agricultural imports from Cameroon average about $20 million per year, mostly coffee.

Cameroon's per capita GDP of $900 is one of the highest in Africa. The country's rapid economic growth has been based on increased petroleum output which accounts for 15 percent of GDP. President Biya has been in office since 1982 following the resignation of his predecessor who held the office for over 20 years. The president has maintained good relations with the West, especially France.

Although the relative contribution of agriculture, forestry, and fishing declined as the oil sector expanded, the agricultural sector still provides 20 percent of GDP, generates 27 percent of export earnings, and employs 75 percent of the labor force. The main food crops, grown mostly on small farms by traditional methods, are plantains, cocoyams, cassava, yams, corn, millet, and sorghum. The major cash crops are cocoa, coffee, and cotton. These commodities, together with bananas, wood, and rubber, are Cameroon's traditional exports.

Policy Goals and Agricultural Programs

Cameroon's strong economic growth, 2.9 percent per capita per year for the 1960-78 period, was fostered mainly by expansion of the agricultural sector. Although Cameroon remains essentially an agrarian economy, it owes much of its recent prosperity to the rapid expansion of the oil industry since the late 1970's. The authorities have been careful to avoid the pitfalls of over-dependency on oil, and only a small proportion of oil revenue is injected into the budget each year.

The government has given priority to the development of the agricultural sector, which it considers to be the backbone of the economy. Programs aimed at increasing productivity of food and cash crops have been financed mainly through either the national produce marketing board (Office National de Commercialization de Produits de Base, ONCPB) or the agricultural credit agency (Fonds National de Development Rural, FONADER). Government intervention in the manufacturing sector has been less successful and policy has shifted to emphasis on privatization and the easing of bureaucratic constraints.

The 1986/87-1990/91 development plan proposes that a much greater priority (36 percent of total expenditure, compared with 20 percent in the previous plan) be allocated to the social sectors, notably education, health, town planning, and housing. Reflecting the government's concern with reinforcing the position of agriculture, the sector has been allocated 26 percent of investment. Of total planned investment, 55 percent is to be carried out by public sector and 45 percent by the private.

Agricultural policy involves price supports for cash crops, subsidies on fertilizers and pesticides, and bonuses for replanting coffee and cocoa trees. There are no guaranteed minimum producer prices for food crops, which are handled largely by private traders. Emphasis is being placed on the expansion of the agro-industrial sector. Projects include corn, soybean, and sorghum processing, and pineapple canning. These will supplement the present heavy investment in both rubber growing and processing and in the long-established palm oil industry.

The main institutions used to implement the agricultural programs are the ONCPB and FONADER. The marketing board (ONCPB) assures uniform and guaranteed prices for cocoa, coffee, cotton, peanuts, and palm oil. It also has the monopoly on their internal and external marketing. The board represents Cameroon at international conferences dealing with these crops. The ONCPB has an operating fund covering its normal marketing costs and other outlays, and a reserve fund to support its price stabilization role. Both funds normally accumulate surpluses on their operations

FONADER is an agricultural credit agency established to foster agricultural development by aiding farmers and cooperatives. Subsidy programs constitute the bulk of FONADER operations. The subsidies are directed toward the distribution of fertilizer and pesticides, the supply of water to villages, and the development of food and export crops, including programs to encourage the replanting of aging cocoa and coffee trees and to attract young farmers.

Agricultural Program Evaluation

While Cameroon remains close to self-sufficient in food, output levels for both food and export crops have shown little sustained growth. If high economic growth rates are to be maintained despite dim prospects for the petroleum sector, there would have to be a marked acceleration in the growth rates of agriculture and other sectors. Slow growth in food crop output is attributed to low productivity and an inadequate marketing system, while low prices have been a disincentive to cash crop producers. Despite increased producer prices, the government's policy is to tax cash/export crop producers and to transfer resources out of the sector. Producers now receive only about 50 percent of the world price for coffee and cocoa. The revenue kept by ONCPB because of the low returns to producers is used to finance fertilizer subsidies, replanting of cocoa and coffee trees, seed distribution, and large-scale wheat and rice-growing projects. None of these programs has contributed to increased agricultural output as expected.

To induce rapid increase in agricultural output, the government will have to take a harder look at agricultural polices and be more amenable to timely policy reforms. The need for reform to increase efficiency and reduce the budgetary burden will be reinforced by declining oil revenues.

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CAPE VERDE

Arthur J. Dommen

This small country consists of 10 volcanic islands lying 400 miles off the west coast of Africa. Its main agricultural policy problem is how to ensure an orderly development of an agricultural sector that, because of sparse suitable land, water, and other resources, accounts for barely 15 percent of GDP. Food imports are an inevitable and permanent feature of the economy.

The economy is open, largely based on services which account for over 50 percent of value added. The country's limited output has to be supplemented with imports, causing the trade deficit to remain at about 70 percent of GDP in recent years. The lack of employment opportunities has encouraged substantial emigration which results in remittances equivalent to a fourth of GDP. Cape Verde's main export is fresh fish (more than 50 percent of the total) followed by canned fish, shellfish and lobsters, and bananas. Agricultural products, mainly grains, make up about a fourth of Cape Verde's imports.

The agricultural sector employs about 40 percent of the economically active population. Only 15 percent of the total land area is estimated to be under cultivation, for the most part on rainfed land, primarily used for growing beans and corn. About 5 percent of the arable land is irrigated, evenly divided between bananas, the main export crop, and sugarcane. Livestock numbers have been declining because of drought. There are no officially established producer prices, and prices for the limited output of food crops are freely determined by market forces.

The government hopes to implement a second national development plan covering 1986-90. Overall investment would represent 51 percent of GDP on average during this period. About 90 percent of this investment would be financed with foreign resources. Although it lacks resources of its own, Cape Verde has achieved a record of effective government administration and maintains good relations with a large number of trading partners and foreign aid donors, including the United States. Prospects for growth in the agricultural sector remain uncertain because of the drought and poor soil conditions. The government is making a strenuous effort to reduce erosion, increase irrigation, and improve land conditions. Low yields and inadequate extension services have discouraged farmers from applying modern cultivation techniques. Also, fees for irrigation and potable water do not reflect economic costs, leading to inappropriate cultivation patterns and uneconomic crop selection (sugarcane).

CENTRAL AFRICAN REPUBLIC

Stacey Rosen

The Central African Republic has been under military rule since 1981. The country gained independence from France in 1960. Per capita GNP is only $260 per year. The agricultural sector accounts for almost 40 percent of GDP and 60 percent of export earnings. Due to favorable weather conditions and continued policy implementation, the economy has experienced significant growth in the last 3 years. Also, the financial situation of the country is better than that usually associated with such a destitute country. The balance of trade deficit is about $30 million. In recent years, foreign exchange reserves covered about 4 months of imports. Debt servicing, which has grown in the last 3 years, remains less than 15 percent of exports of goods and services.

The agricultural sector employs 60 percent of the labor force. Production of the major food crops (cassava, groundnuts, corn, and sorghum) has stagnated since the early 1980's. This could be attributed to the lack of producer price increases until 1984/85. The major export crops (cotton, coffee, and tobacco) together contribute over 40 percent of export earnings. Diamonds are the largest single export earner, accounting for a record 29 percent of the total in 1984.

Current policy calls for a reduction of the current account deficit through supply-oriented policies such as increasing and diversifying the production of food and export crops, rehabilitating state activities, and encouraging private sector investments. The most important agricultural project is an integrated rural development project aimed at increasing production of cotton and food crops. This project receives substantial foreign investment.

Agricultural incentive policies, such as increased producer prices and the provision of better inputs and extension services, have been instituted. Production of most crops has responded positively to the increased producer prices. However, lower world prices for cotton have overridden any domestic incentives for increased production. Continued foreign assistance, along with policy reforms, are essential for maintaining or stimulating economic development.

CHAD

Shahla Shapouri

Chad is a landlocked country with 5 million people, 80 percent of whom live in rural areas. Chad is one of the poorest and least developed countries in the world with per capita income of about $130. The agricultural sector dominates the economy, contributing about half of GDP. Food crops are the principal output in value terms, followed by livestock and fisheries. The major export commodity is cotton, providing about 80 percent of export earnings but only 4 percent of GDP in 1985.

The economy underwent a difficult civil war from 1979-82. Economic activity was seriously disrupted with at least a 30-percent reduction in aggregate output. The banking system collapsed and industries either suspended or severely reduced their operations. The trade movement was crippled because of a deterioration of the marketing infrastructure, in particular the road network.

A new government took control in 1982 and has worked effectively to establish relative political stability and to resume economic activities. The economic recovery, however, was hampered by the unprecedented drought of 1984-85.

The government identified the following broad objectives related to the agricultural sector: provide sustainable food security, resettle population displaced by drought, reconstitute the livestock herds, to improve the water supply and combat desertification, and intensify and diversify the export sector.

Chad maintains an exchange system free of restrictions for international transactions. No official retail food prices are enforced and producer prices have been increased substantially since early 1980's to encourage production. The marketing strategy is to purchase grain from surplus areas for resale by traders in deficit areas. To increase exports, the government is focusing on a medium-term restructuring/diversification program. Diversification from cotton could mean increases in food production. With mounting financial difficulties, increases in foreign exchange earnings either by increasing export earnings or raising additional aid will remain the government's goal, at least in the near term.

With the establishment of relative political stability and recovery from drought, Chad is ready to move toward normal operations and a plan for long-term development. However, the performance of the agricultural sector will remain uncertain because of the continued threat of drought in the rainfed areas where most crops are produced, the lack of resources for agricultural support services, and the crippled road network which continues to disrupt commercial activities.

COMOROS

Carl Mabbs-Zeno

The government of the Comoros, based on French and Muslim law, is headed by an elected president. About 40 percent of GDP and 80 percent of employment comes from agriculture. Per capita GDP is among the lowest in the world at $265 in 1985. Since reconciliation in 1978 with its former colonizer, France, foreign aid has averaged over 40 percent of GDP. National debt has accumulated rapidly in the 1980's such that it now exceeds GDP although payments on the debt remain below 25 percent of export earnings. Comoros is a member of the French franc area but it must hold its foreign reserves with the French Treasury.

Exports are nearly all agricultural, led in most years by vanilla which accounts for over half of export revenue. Cloves and ylang-ylang, a flower used in perfume manufacture, are also important. About half of grain consumption, mainly rice and corn, is supplied domestically in addition to coconuts, bananas, cassava, and sweet potatoes. Over 10 percent of agricultural value comes from livestock, mainly cattle, although poultry production is expanding within development project areas.

The primary agricultural goal expressed in the 4-year plan announced in 1983 is self-sufficiency. Internal transportation was previously recognized as the key problem limiting agricultural growth, but road improvements have allowed other programs to gain emphasis. Development projects, partly funded by various United Nations agencies, now provide demonstration farms, extension services, credit, and breeding stock.

Minimum producer prices are set by the government only for vanilla. They are based on producer costs. Food is imported exclusively by state enterprises so the price of imported food is also controlled. The government states that these prices are set to limit the profit accruing to traders.

Following the adoption of the interim plan for 1983-86, consumption and investment rose rapidly, particularly in the public sector. This spending was paid for by drawing down vanilla stocks, increasing debt, and accepting foreign aid.

Although internal transportation has been improved, Comoros continues to suffer from isolation as a nation of islands. Its dependence on only three crops for exports leaves it vulnerable to price changes. The strategy of seeking food self-sufficiency for protection from these stresses has been slow in improving production, thus foreign aid is likely to remain important for many years.

CONGO

Stacey Rosen

Gaining independence from France in 1960, Congo is a socialist country which is increasing its ties with the West. Real GDP growth has been on the decline since 1985 when oil prices fell sharply. However, per capita income (over $1,000) remains high relative to other Sub-Saharan countries.

The economy is dominated by oil which accounts for 40 percent of GDP and 90 percent of export earnings. Following prosperous years of increasing oil output and government expenditures, the economy has begun to decline. The once large balance-of-trade surplus has shrunk and the current account deficit has grown. The current economic decline was mitigated by the depreciation of the CFA franc and the reduction in public investments.

Agriculture contributes only about 5 percent of GDP even though it supports 40 percent of the population. The principal food crop is manioc, accounting for 90 percent of total food crop production. However, due to transportation difficulties, two-thirds of the country's manioc consumption must be imported. A wheat price subsidy has resulted in some substitution of bread for manioc. Wheat imports have consequently risen sharply. The agricultural sector is slowly recovering from the drought years of the early 1980's. Agricultural output is constrained, however, by a poor transportation network, urbanization encouraged by the oil boom, and inappropriate marketing and pricing policies.

Congo is in the midst of a 2-year intermediate economic plan in anticipation of the next 5-year plan. This plan emphasizes projects with the potential of earning oreign exchange and private sector projects. Because the anticipated percentage of foreign financing was never realized and domestic financing was also limited, many planned expenditures had to be reduced.

The authorities have only recently begun instituting agricultural policies. Efforts had been focused on state farms which proved to be unsuccessful. Also, real producer prices had fallen. In the 1986/87 crop year, producer prices were raised significantly, doubled in some cases in an effort to discourage movement to the cities and encourage production.

The previous 5-year plan resulted in debt accumulation of over $2 billion in 1985. The agricultural policies initiated in response are relatively young and, therefore, difficult to evaluate. Producer prices have been increased which should raise production levels. Also, a state-owned marketing organization, an export monopoly, has been eliminated with hopes of promoting traditional exports and diversifying into new exports.

In the face of declining oil prices, Congo must diversify its economy. More emphasis needs to be placed on agriculture with a priority given to small-scale agriculture.

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IVORY COAST

Margaret Missiaen

Agriculture accounts for about a third of GDP, with the main food crops being yams, cassava, plantains, rice, and corn. Grains, including imported wheat and rice, supply about 40 percent of the calories in the diet while roots and plantains contribute 35 percent. The major export crops are cocoa and coffee. The main goals of the government's current agricultural policy are to diversify cash crop production, achieve self-sufficiency in food crops, promote modernization and regional development, and manage the use of forest resources. Farm exports average 65 percent of total exports while imports are only 20 percent agricultural. U.S. imports, mostly coffee and cocoa, averaged over $400 million in recent years, but U.S. exports to the Ivory Coast average less than $10 million.

The Economy

President Houphouet-Boigny has led the government since independence from France in 1960. He is the leader of the sole political party and was re-elected to his sixth consecutive 5-year term in 1985. He has provided stability to politics and fostered growth with the country's open economy and close ties to France. The country's 10 million people have a per capita GDP of $700, one of the highest in Sub-Saharan Africa. The service sector of the economy contributes over 50 percent of GDP. Industry, including petroleum production and refining, provides about 20 percent of GDP.

In the 20 years following independence, GDP annually grew 7.5 percent. This record was based on a rapidly growing farm sector, which generated surpluses for investment, and on liberal and pragmatic economic policies that combined domestic and foreign factors in productive uses. About a fourth of the country's population are immigrants from neighboring countries who responded to employment opportunities. The country has a mixed economy in which the public sector plays a leading role in key areas (especially agriculture) and where private initiative has been encouraged in industry and commerce.

The Agricultural Sector

Agriculture, forestry, and fisheries together provide employment and income for about 60 percent of the population and contribute a third of GDP. The sector also forms the basis of the country's principal industries. The Ivory Coast is the world's largest producer and exporter of cocoa and the third largest exporter of coffee. The cocoa and coffee shares of total exports are about 40 and 20 percent. Other agricultural exports are cotton, pineapples, and bananas.

Policy Goals

The major goals of the development plan are to promote rapid growth of the economy as well as regional equality. Economic reforms being carried out include sharply cutting public expenditure, restructuring state corporations, promoting private enterprise, and liberalizing trade. Investment priorities are agriculture, transportation, and urban development. Agricultural policy aims to diversify production of cash crops, achieve self-sufficiency in food crops, promote modernization and regional development, and rationalize the exploitation of forest resources. Despite higher coffee prices in 1986, the government remains concerned about low international prices for its main export commodities.

Agricultural Programs

Ivory Coast began the 1980's with severe financial problems caused in large part by overly ambitious development programs begun following the 1975-77 boom in coffee and cocoa prices. The country's terms of trade deteriorated sharply in the late 1970's. Rather than abandoning development projects, the authorities financed the growing deficits by drawing down foreign exchange reserves and by borrowing in international financial markets. As a result, the country's debt service ratio reached a high of 42 percent in 1983. In 1981, the government began adjustment programs aimed at improving the country's financial position while resuming economic growth. The overall balance of payments then shifted into surplus in 1984 for the first time since 1978. The country is vulnerable to falling world coffee and cocoa prices and its high debt-service obligations expose it to unfavorable developments in international financial markets.

The government's policy of expanding agricultural production is being implemented by increasing incentives to private smallholders who produce the bulk of the crops. Actions taken to support these policies include: (1) substantial increases in producer prices for major cash crops and in the retail price of rice which indirectly increase the producer price of food crops, (2) privatization of government-owned rice mills, (3) recruitment of a private consortium to assist in managing the palm oil industry, (4) restructuring the sugar, pineapple, and banana subsectors, and (5) launching of coffee, oil palm, rubber, and timber planting projects.

The main function of the Caisse de Stabilization et de Soutien des Prix des Productions Agricoles (CSSPPA) is to stabilize producer prices of coffee, cocoa, sugar, cotton, and rice. The fund directly exports sugar as well as a small proportion of the coffee and cocoa. The bulk of these crops is marketed by private traders, with terms of sales contracts subject to the fund's prior approval. The CSSPPA is also in charge of balancing the accounts of domestic rice production channeled through modern rice mills. In addition, it is responsible for implementing the international commodity agreements. The role of the Caisse Générale de Peréequation des Prix des Produits de Grande Consommation (CGPPPGC) is to stabilize consumer prices of such commodities as sugar and rice. It partly finances its operations with earmarked tax revenue.

Although national development plans have traditionally emphasized cash crops, a development agency has also been created for rice and the producer price is guaranteed. The country's trade policy is oriented toward ensuring rice supplies by compensating shortfalls in production with imported rice. Imports of rice are controlled by the government through licenses granted by the CGPPPGC, under the supervision of the ministry of commerce and, since 1982, through direct government-to-government purchases. Rice imports are subject to a variable duty, estimated as the difference between the wholesale price and the CIF price. The variable import duty has generated significant profits to the CSSPPA which uses them to finance subsidies to the rice sector. Since 1984, the government has launched a crash program aimed at self-sufficiency in rice production. However, less than 10 percent of rice area is under the technical assistance program.

Ivory Coast is a member of the International Coffee Organization (ICO) and the International Cocoa Agreement. The nation's decision to sign the 1986 cocoa agreement reversed the previous policy of not joining the 1980 agreement because the price levels were too low.

Agricultural Program Evaluation

The 4.4-percent annual growth rate of agricultural production was the highest in Sub-Saharan Africa during 1977-86. However, the growth was only 0.4 percent per capita. The country's mixed economy, with government marketing of cash crops and private control of most food crops, has allowed production of both to expand rapidly.

Ivory Coast has been very successful in implementing its coffee and cocoa programs. The country remains Africa's largest coffee producer and has increased exports from 200,000 tons in the early 1970's to about 250,000 tons in recent years. The level of coffee exports is controlled by the ICO. Exports of higher valued soluble coffee have risen fivefold since 1970. The country has also expanded exports of processed cocoa products, mostly paste and butter.

Since its inception, the CSSPPA has consistently generated net surpluses on its stabilization operations. In recent years, these surpluses have increased rapidly as producer prices for cocoa and coffee have been set at levels well below the rising trends in export prices in local currency terms. Most surpluses on stabilization operations have been transferred to various government entities to finance their outlays rather than used to build reserves of the fund.

Ivory Coast cocoa does not command premium prices on world markets because of quality problems. The government has been urged to offer higher prices for better quality beans, a move likely to meet producer resistance. There is concern about overproduction of cocoa since plantings were expanded very rapidly in the late 1970's and 25 percent of the trees have not yet reached full productivity. The government policy is to distribute hybrid cocoa seedlings for replanting only, but farmers continue to expand cocoa area on their own.

The government is attempting to increase coffee productivity by offering premiums to farmers who prune their trees. The age structure of the coffee plantations, together with the lower levels of new planting, indicate that coffee production may start declining before the end of this decade.

Producers receive the same price for cocoa and coffee beans. With higher production costs for coffee, a price differential will have to be introduced if coffee production is to increase.

Sugar production expanded sixfold between 1977-82 in response to government support. Given the high production costs, estimated at three times the world price, the government closed the least efficient sugar complexes. Exports were limited to quota agreements with the United States and the EC. The U.S. quota has since been eliminated.

Cotton production increased rapidly in the 1980's mainly as a result of government efforts which included subsidized inputs, support services, and regular increases in producer prices. Falling world prices have forced the government to hold producer prices constant for the last 2 years. The stabilization fund lost money on the cotton account in 1985/86.

The private sector has been successful in producing and marketing most food crops. Indications are that food production has expanded more rapidly than population despite rapid urbanization. Wheat imports are also in private hands. The government's rice policies have been less successful. While increases in the producer price have led to higher production, falling world prices have meant larger subsidies. The current producer price is above the world price. With the present price structure, the levy on imported rice more than covers the losses on domestically produced rice. The losses stem from the fact that the differential between producer and consumer prices is low compared with the milling, transportation, and marketing costs. The government is apparently backing away from its policy of rice self-sufficiency because of the cost.

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DJIBOUTI

Brian C. D'Silva

Djibouti has minimal natural resources, fisheries and stockraising being the principal agricultural activities. Hence, food products constitute the largest share of imports. Djibouti is well-known as a trading and commercial center, with exports from Ethiopia transiting the country to markets in the Middle East. The government became independent from France in 1977. However, France is still responsible for the country's defense. The government is democratically elected and is nonaligned in its political outlook.

Less than 10 percent of the economy's GDP comes from agriculture and less than 5 percent of the population is involved in agricultural activities. Saudi

Arabia, France, and the United States are the major aid donors for the country. As a result of drought and conflict in neighboring countries, Djibouti has had to cope with a large and growing refugee population. Food products constitute over 50 percent of the country's imports and transhipped agricultural products constitute over 65 percent of the country's exports.

Agricultural policies have focused on increasing fish production and improvement of the water supply to increase stockrearing. The government's agricultural strategy focuses on developing water resources, increasing the number of farms, and improving fisheries and stockraising. Water is a primary constraint on agriculture as the annual average rainfall is 144 mm. Stockraising, done primarily by the nomadic population, produces goats, sheep, camels, cattle, and donkeys. But meat from the nomadic sector rarely enters the urban market where meat which is consumed is imported from Ethiopia. As water availability affects stockraising, the government has embarked on a series of water projects to tap groundwater resources. Small-scale fisheries are primarily organized as cooperatives and annual production of fish has increased from less than 80 tons at independence to over 500 tons in recent years. The target for 1990 in fish production is 3,000 tons.

EQUATORIAL GUINEA

Shahla Shapouri

Agriculture and forestry account for over half . ` GDP and the public sector for about a third, with manufacturing accounting for the rest which is limited to cocoa, coffee, and wood processing. Since independence in 1968, the economy has been depressed because of a weak administrative capacity and political disruptions. The Spanish-speaking country is isolated from its French-speaking neighbors who have a common central banking system and common customs institutions. The present government took power in 1979 and initiated an economic reform program. In this effort, the government joined the Bank of Central African States (BEAC) in 1983 and the African Customs Union (UDEAC) in 1985, becoming the first nonfrancophone member of both institutions.

Cocoa is the main export crop, cultivated in about half of the total area. The country was famous for producing high-quality cocoa prior to independence. Since 1968, cocoa production has declined with the average quality deteriorating because most of the managers of plantations and workers left the country. During the 1980's, lack of labor to plant and harvest cocoa reduced the planted area to about half of the total available area. The production performance of timber and coffee, the important export commodities after cocoa, showed a slowly declining trend after independence. The main subsistence crops are cassava, plantains, and cocoyams. The production of food crops, similar to the cash crops, has declined since independence. The country's food import dependency has increased, accounting for about 20 percent of the total import bill in recent years.

Financial difficulties forced the government to adopt a comprehensive policy program in 1985. Government agricultural policy is to revitalize the export sector by increasing incentives, improving quality control, and removing the price control of goods and services by dissolving the state-run marketing board. The producer prices for export crops were set in line with neighboring countries and a new official tax base was established for export commodities.

The integration of the country into the Central African Monetary Area in 1985 has been the major economic change for the country. The first implication was the conversion of local currency, the ekwele, to CFA francs, at a rate implying a devaluation of about 80 percent. Despite government efforts, the economy remains weak and is dependent on the speed of recovery of exports. So far, shortages of labor remain the major constraint for the cocoa sector. Cocoa producer prices, which have been increased annually since 1980, did not keep up with the increase in production costs (due to devaluation and removal of input subsidy). However, the governmer' seems to be committed to policy reforms and the move to a convertible currency has encouraged commercial activity in the country with the possibility of increasing trade with the neighboring CFA franc countries.

ETHIOPIA

Arthur J. Dommen and Stephen Hayk--

The People's Democratic Republic of Ethiopia, officially proclaimed at the beginning of 1987, is Africa's newest Marxist-Leninist state. The revolution which culminated in the overthrow of Emperor Haile Selassie in 1974 led to the nationalization of land and capital and the creation of a centrally planned economy. Ethiopia's economic performance in the 1980's has been colored by the new economic regime and by the widespread drought of 1983-85. In 1984, per capita income was only $110, making Ethiopia one of the world's poorest countries. Estimated population is 42 million. Ethiopia is fighting civil wars in Eritrea and Tigre which absorb a large share of public resources and disrupt food production, pest control, and food relief activities in these regions. Agriculture contributes about 40 percent of GDP. Major crops grown are sorghum, teff, barley, corn, wheat, cotton, and coffee. Major trading partners are Saudi Arabia, Japan, Italy, and West Germany.

The Economy

GDP has been steady over recent years. Manufacturing, especially food processing and textiles production, accounts for 8 percent of GDP. Construction, marketing, transportation, and communications are other important activities. Most manufacturing and trading enterprises are publicly owned.

The Agricultural Sector

Agriculture is the principal productive sector in the economy, providing 40 percent of GDP, contributing 85 percent of export revenues, and employing 80 percent of the country's population.

Ethiopia, with a rugged terrain rising from sea level to over 10,000 feet, has a wide range of agro-ecological conditions supporting a variety of crops as well as rangelands and forests. Most crops are grown in the highlands. Although highland soils are relatively fertile, many are deficient in nitrogen. Weather conditions, overuse, and deforestation contribute to land degradation. Loss of tree cover has been substantial. The United Nations Development Program estimates that forests, which covered 40 percent of Ethiopia at the turn of the century, now cover only 3 percent. There is a physical potential to expand irrigation, mainly from surface water. But, only 100,000 hectares are irrigated, less than 1 percent of arable land.

Coffee is the principal source of Ethiopia's export earnings. In 1985/86, coffee output was 186,000 tons, 20 percent above the drought-reduced 1984/85 output. The coffee marketing corporation handles 70 percent of coffee exports and sets procurement prices in response to fluctuations in world prices. But, taxes cut sharply into producers' returns. Food grains account for 60 percent of crop production with teff (a traditional cereal), wheat, barley, corn, and sorghum all being important.

Ethiopia has Africa's largest livestock population. Many animals are kept by smallholders for draft and transportation uses. In addition, 10 percent of Ethiopians are nomadic pastoralists, relying on animals for the bulk of their food and incomes.

Agricultural Programs

Following the land reform associated with Ethiopia's revolution, there have been three types of farms: smallholders, producer cooperatives, and state farms. Over 90 percent of Ethiopia's crops are produced by peasant farmers or smallholders who comprise 75 percent of Ethiopia's 42 million people. These subsistence farmers typically work less than 2 hectares of land in Ethiopia's highlands. Most peasants are organized into peasant associations. The government has tried to encourage the formation of collective farming units called producer cooperatives. Despite preferred access to credit and inputs afforded to the producer cooperatives, they account for only 3 percent of cultivated land. Former large commercial farms were nationalized as state farms which today account for 5 percent of cultivated area. Although these state farms receive a disproportionate share of public investment, they have been less efficient than peasant farms, requiring continuing government subsidies to stay afloat.

Ethiopian agriculture has been hurt not only by weather and pests, but also by government interference. The government intervenes extensively in the domestic cereal market, often in a harmful manner. Farmers and traders are subject to mandatory purchases by the agricultural marketing corporation, and all private trade is regulated.

The government intends to resettle 1.5 million people, about 3 percent of the population, from the poorer agricultural areas in the north to virgin agricultural areas in the southwest. This controversial policy has diverted resources from famine relief and uprooted some farmers in the midst of their harvests. The United States has objected to this program on humanitarian grounds.

In addition to the people being forced to emigrate long distances, a much larger proportion of Ethiopia's rural population is being regrouped into villages. In many cases, farmers are being moved to villages as far as 10 miles from their farms. This program allows the government to provide services to the rural population. However, it comes at a high cost of disruption of agricultural production. This is added to the disruption caused by Ethiopia's numerous wars.

Agricultural Program Evaluation

Because of its poverty, Ethiopia is severely constrained in its capacity to mobilize the domestic resources required for economic growth. During the

1980's, consumption expenditure has accounted for a large proportion of GDP. As a result, domestic savings [illegible] averaged below 5 percent of GDP. With investment running at 12 percent of GDP and a consistent trade deficit, Ethiopia has become increasingly dependent on external financing. Ethiopia's domestic resource gap grew to 11 percent of GDP in 1983/84 and 1984/85 at the height of the famine, falling to a still troublesome 7 percent as output increased in 1985/86.

Ethiopia's trade deficit continued to grow during the 1983/84 and 1984/85 famine years. In 1985/86, the trade balance improved. Export revenues increased 38 percent in 1985/86 to $494 million. Coffee, hides and skins, and petroleum byproducts provided 88 percent of export earnings. The volume of coffe exports increased by 30 percent to 90,000 tons in 1985/86, while world market prices also rose, giving a strong boost to Ethiopia's trade balance.

Although the value of imports has recently been steady, there has been a substantial change in import composition. At the height of the famine, imports reflected large food and fuel shipments, including concessional imports. A resurgence in industrial capital goods and consumer goods imports began in 1985/86 and is likely to continue.

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GABON

Arthur J. Dommen

Gabon is a small coastal country situated in the rain forest zone south of Cameroon and Equatorial Guinea. Gabon's economy heavily depends on petroleum, which accounts for 45 percent of GDP, more than 80 percent of export earnings, and two-thirds of government revenue. In terms of average per capita income ($3,000), Gabon is the second richest country in Africa (after Libya), but nowhere in Africa is the cleavage between urban and rural sectors so sharp. High income from oil and minerals (manganese and uranium) and a sparse population account for the peculiarity of its rank in wealth, but these two factors create problems for the agricultural sector which the government's policies and programs are attempting to correct. President Bongo, head of state since 1967, was re-elected to another 7-year term in 1986. The Parti Democratique Gabonais is the only legal political party. France retains substantial commercial interests in Gabon.

Agriculture, including livestock and fishing, accounts for less than 5 percent of GDP. From a modestly prosperous plantation agriculture in colonial days, Gabon's rural sector has lapsed back to subsistence agriculture because wage rates for agricultural labor have been driven so high by the offer of jobs in the oil and mining subsectors that large-scale agriculture, whether oil palms, bananas, pineapples, or peanuts, has become unprofitable. Overland transport costs are so high that rice grown a few hundred miles from the capital is uncompetitive with rice imported from abroad. Getting inputs like fertilizer, diesel fuel, and machinery spare parts out to the countryside involves a major operation.

Government plans for the agricultural sector revolve around the creation of agro-industrial blocks, which are capital intensive units aimed at creating "spread effects" on surrounding areas to incite agricultural production. They depend on high-yielding crop varieties or imported breeding stock and almost total mechanization. Many are financed by European investors. Among the export crops are cocoa, coffee, and palm oil, and timber exports are important. Gabon's external and internal financial balances have deteriorated as a result of declining oil prices and production. Authorities are implementing structural reforms designed to diversify the economic base away from overdependency on the oil sector. In an effort to revitalize the agricultural sector, producer prices for coffee and cocoa were increased, provision of extension services to farmers were stepped up, and emphasis was placed on development of agro-industrial projects.

In view of the smallness of its domestic market, only insignificant progress in solving Gabon's agricultural problems can be expected unless there is a drastic change in the climate for world investment in tropical agriculture. Despite the growth of public expenditure based on oil revenue in the early 1980's, little progress has been made in reducing the economy's dependence on oil, slowing migration from rural areas, or establishing a structure of relative prices conducive to production in the nonoil sectors. In the past, public investment, which mainly was geared to infrastructure, contributed little to the diversification of the economy.

GAMBIA

Arthur J. Dommen

Gambia is located on the west coast of Africa along the estuary of the Gambia River. On its landward side, it is entirely surrounded by Senegal. Gambia's main agricultural policy problem over the past century has been allocating land and labor between production of food crops and cash crops. Agriculture remains the most important economic activity, providing a livelihood for more than 80 percent of the population and accounting for about a third of GDP. Markets for agricultural products such as millet, sorghum, corn, peanuts, rice, and vegetable oils are well integrated.

The economy is heavily dependent on production and processing of peanuts, which provide about half of export earnings. Other important sources of foreign exchange are tourism and fishing. Despite real GDP growth in recent years due to good harvests, Gambia's external financial position remains extremely tight. Authorities continue to face major difficulties in meeting external obligations, including debt service payments. Gambia's per capita GDP is about $200. The people's progressive party, in power since independence in 1965, is led by President Jawara. Senegalese support during a 1981 coup attempt led to the Senegambia confederation agreement effective in 1982.

Services account for over half of GDP while agriculture contributes a third. In normal years, peanuts dominate the other crops and livestock subsectors. However, during drought years, livestock becomes the most important because of the high slaughter rates. Agriculture provides income for 80 percent of the population and contributes 80 percent of the export value of domestic goods. Peanuts continue to provide the basis of the principal industrial activity, oil mills, and are important in the trading sector. Approximately 70 percent of value of Gambia's exports comes from transshipments. Exports of peanuts, oil, and meal account for 70-80 percent of domestic exports; fish and fish products account for 10-20 percent. Almost 40 percent of Gambia's imports are agricultural products. Gambia's traditional food crops are millet, sorghum, and upland rice grown in rainfed conditions and rice grown in swamplands along the Gambia River and its bywaters.

The government has progressively liberalized the economy, pursuing goals advocated by its major foreign partners, including the International Monetary Fund, the World Bank, and the United States. In mid-1985, the Gambian government began implementing an economic recovery program. The main elements of the program were: (1) exchange rate and pricing policies that take into account the openness of the economy, (2) sharply restrained demand-management policies, and (3) a reduction in the size and role of the public sector. The government's agricultural programs aim at restoring marketed peanut production while increasing food crop production at the population growth rate.

Agricultural development has been pursued with relatively little fanfare or overly ambitious goals of making the country self-sufficient and eliminating food imports. Under a U.S. aid-financed mixed farming project, corn production has accelerated due to better cultivating practices and implements, and the establishment of an effective fertilizer distribution system throughout the country by local corn growers' associations. Peanut producer prices were tripled between 1984 and 1986 to provide adequate incentives to producers and to maintain competitiveness with producer prices in the region. Retail rice prices were decontrolled and rice importing turned over to the private sector. The government is improving input distribution and output marketing and taking steps to create a viable system of agricultural credit.

Agricultural Program Evaluation

The Gambia produce marketing board, a public enterprise with monopoly rights to purchase and export peanuts and products, palm kernels, cotton, and corn, is facing severe financial problems. The board has incurred a series of large and increasing annual losses on its peanut trading activity as costs continued to rise while export prices fell. The board also incurs losses on subsidization of domestic rice operations and fertilizers. The board depleted its stabilization reserves in earlier years and must now rely on budget support.

The currency is reaching more realistic levels of exchange. As a result, there has been less cross-border smuggling with Senegal. The control of inflation, however, remains a serious problem. Wage rates have increased only moderately, suggesting a marked decline in real incomes and forcing particular hardship on urban dwellers.

Larger scale projects, notably World Bank irrigation projects, have not proved cost-effective in the opinion of agricultural experts in the Gambia.

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GHANA

Margaret Missiaen

Ghana became independent from Great Britain in 1957 under the leadership of Kwame Nkrumah, who was overthrown in a military coup in 1966. Ghana has since alternated between civilian and military governments. The last civilian ruler was overthrown in 1981 by Flt. Lt. Jerry Rawlings, now chairman of the provisional national defense council (PNDC), the supreme governing body.

Ghana's main food crops are cassava, yams, plantains, and corn. The principal cash crop is cocoa. Roots and plantains provide 45 percent of the calories in the diet while grains supply about 33 percent. Agriculture, forestry, and fishing account for more than half of GDP. In early 1983, the government began a program of wideranging reforms to rehabilitate the economy as a basis for sustained growth. The major objective of the program was to redirect incentives and resources to sectors in which Ghana has a comparative advantage and away from inefficient industrial and trading activities. For the agricultural sector, policies have focused on increased output of both food and cash crops. Ghana ranks among the top 10 markets for U.S. products in Sub-Saharan Africa. About half of these sales are concessional.

The Economy

Ghana, with a population of about 13 million, is well endowed with human and natural resources. Its per capita GDP is only $350. The country experienced a prolonged period of recession during the 1970's and early 1980's resulting from years of economic mismanagement and deteriorating terms of trade.

The Agricultural Sector

Agriculture is central to the Ghanian economy, providing about half of GDP. Over 70 percent of the population derives its income from agriculture or related activities. Cocoa alone employs a fourth of the labor force and accounts for 65 percent of export earnings. In normal years, about 10 percent of total imports are agricultural products. Grains are the most important food import.

Policy Goals

The economic recovery program, formulated in 1983, includes measures to restructure relative prices through devaluation and provision of greater incentives to producers, with the aim of generating higher foreign exchange receipts, increasing government revenue, and improving the availability of consumer goods. Within the program, the government has identified the following agricultural policy objectives: (1) self-sufficiency in the production of cereals, starchy staples, and animal protein, (2) maintenance of adequate buffer stocks of grains, (3) self-sufficiency in industrial raw materials such as cotton, oil palm, tobacco, and peanuts, (4) increased production of cocoa and other exportable crops, and (5) improved storage, processing, and distribution systems to minimize post-harvest losses.

Agricultural Programs

Prior to 1983, agricultural production policy was largely based on increasing output by expanding area. Private investment in the agricultural sector received tax concessions, but exports of food crops were banned. Agricultural inputs were highly subsidized and distributed through the public sector. The producer pricing policy was enforced through a parastatal food distribution system, complemented by a policy of consumer-oriented food marketing at low prices. However, inadequate finances for stock purchases, storage, and distribution infrastructure precluded effective implementation of these pricing policies.

Guaranteed minimum producer prices have increased for major crops, including cocoa, corn, cotton, rice, and palm kernels. The price increase for cocoa is the most significant because of its importance in the economy and the actual control of marketing by the cocoa board. The sevenfold increase in the producer price of cocoa since 1982 has brought Ghanaian prices more in line with the world and Ivory Coast prices. However, in real terms, the price remains below that of the early 1970's.

Agricultural Program Evaluation

The Ghanaian economy has staged an impressive recovery. Real GDP growth annually averaged more than 5 percent during the last 3 years. Agriculture led the recovery in 1984, while in 1985 and 1986 a more broadly based recovery was achieved, reflecting the overall improvement in the supply position. Strong demand management together with falling food prices and low capacity utilization throughout the economy account for success in curbing inflation. Inflationary pressures have increased recently as the cedi has been devalued. (The cedi has depreciated by over 3,000 percent since 1983.) A two-tier foreign exchange system was introduced in September 1986 allowing supply and demand to determine the cedi exchange rate at auction. This rate has averaged about ¢150 = $1. Imports purchased with foreign exchange bought at this rate will be substantially more expensive. The government is moving toward unification of the two rates.

In response to higher prices, cocoa production has risen in each of the last 3 years reversing the decline of the previous decade. The effect of increased "official" producer prices on output of other crops is difficult to determine. While the prices and production of food crops have both increased since 1983, marketing of food is largely outside government channels. The government does not have the resources needed to support producer prices in good crop years. When the excellent corn harvest of 1984 caused market prices to drop below the official price of ¢1,800 per ton, the government lowered the price to ¢1,000.

Policy reform programs have been implemented in other areas. Fertilizer, seed, machinery, and irrigation subsidies were reduced. The Ghana food production corporation was restructured to include ownership by public financial institutions as well as worker participation. The cotton development board was privatized to incorporate equity participation by the major textile mills. Privatization of fertilizer distribution began in 1986. The ban on food exports was lifted. Consumer price controls are being gradually dismantled to allow market forces to determine price levels.

The benefits of the economic recovery program to Ghana's external sector are clear, but they have come at the expense of declining real incomes for most Ghanaians. The government, concerned about this trend, increased the minimum wage at the time of the last devaluation. Civil service pay was also adjusted. However, the minimum wage is still less than half of its 1972 level in real terms. In early 1986, the government had to face up to a serious challenge from the trade unions when it tried to trim budgets to meet International Monetary Fund conditionalities, imposing tight control of wages which are already too low to guarantee survival. With public employment being cut, it remains to be seen whether private sector employment can be boosted to raise the generally depressed standard of living.

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GUINEA

Shahla Shapouri

Although rich in natural resources, Guinea became one of the poorest countries in Africa because of economic mismanagement during the last 25 years. The economy presently consists of three sectors: the mining sector managed by foreign partners without much government intervention, the public sector which in 1985 employed about 84,000 persons, excluding armed forces (total population 5.7 million), and the private sector, composed mainly of subsistence agricultural producers.

Until recently, the government directly regulated the economy, resulting in an overextended public sector. For example, a survey of the banking system in 1985 concluded that all state banks were bankrupt, with no reliable accounting procedure. Depositors were normally unable to withdraw money from their accounts. Since 1984, policies have been fundamentally revised and call for increasing the role of the private sector. According to data for 1981-85, the country showed declining per capita GDP growth because of stagnant agricultural and mining output. Agriculture employs about 80 percent of the population, but contributes less than 1 percent of export earnings. The export crops are coffee, palm kernels, and pineapples. Minerals, mostly bauxite, contribute 98 percent of export earnings.

Agricultural productivity has sharply declined in the last 20 years because of the failure of agricultural policies to meet the needs of the sector. The smallholders who are the major producers of agricultural products have been neglected in favor of collective farms, managed by the government. The major food crops produced by subsistence farmers are rice, corn, and fonio, a low-yielding, drought-resistant cereal. Rice, the staple food, is mostly produced and consumed on the farm with small quantities traded in local markets.

The low and declining food production was supplemented by imports, mostly food aid. The production of cash crops was cut back because of disincentive policies, including low producer prices, lack of inputs and consumer goods, and marketing problems associated with government management. With the low official prices set for cash crops, more farmers switched to subsistence food crops. The remaining cash crops were directed away from official markets and sold in neighboring countries at higher prices. Since 1984, major policy changes have been made. Compulsory marketing of food and cash crops was abolished, collective farms were dissolved, and the local currency was adjusted. Prices for cash crops were raised to about 80 percent of world levels. Consumer subsidies for rice and the rice rationing system were abolished, thus sharply increasing the rice price.

The current policies imply a fundamental shift from an economy which has been regulated during the last 25 years. The policy direction calls for a substantial increase in the role of the private sector in the economy. The short-term results of the recent reforms remain uncertain; however, monetary reform has made it possible for capital and consumer goods to be imported without major difficulty at domestic prices reflecting their true value. The foreign exchange needed to import essential commodities will remain tight as demand for Guinea's exports is declining. Guinea's economic problems are institutional in nature. Even with the availability of physical resources, the lack of managerial and institutional capacity are expected to slow the economic growth at least in the medium term, and increase the country's reliance on imported services and foreign aid.

GUINEA-BISSAU

Shahla Shapouri

Guinea-Bissau is among the 10 poorest countries in the world, with per capita GDP of less than $200. Since independence in 1974, the country has faced growing economic difficulties. The lack of managerial skills in the economy, which was modeled after centrally planned countries, resulted in misallocation of resources, growing deficits, and slow growth. Foreign aid played a major role contributing about two-thirds of government revenue. In 1983, the pressure of economic difficulties forced the government to adopt policy reforms. The country has good potential for economic recovery, particularly in agriculture and fisheries. Mineral resources include bauxite phosphates, and off-shore petroleum.

Agriculture contributes about half of GDP. The major food crop is rice, followed by corn, sorghum, sugar, and beans. The main export crops are peanuts, palm kernels, cashews, and cotton. Most of the rice is produced in irrigated coastal areas. Rice output has grown slowly and the country relies on imports for a third of its consumption. Other food imports include wheat flour, dairy products, and sugar. The food import bill is about 15-20 percent of total imports. The agricultural sector contributes two-thirds of total export earnings, with peanuts supplying about half the total agricultural exports.

After independence, Guinea-Bissau adopted a system of centralized planning with heavy emphasis on market control. By 1980, the country was faced with severe financial difficulties and shortages of basic items such as food and intermediate goods. The droughts of the early 1980's aggravated the economic problems. The growing deficits and overvalued currency led to increases in external borrowing. By 1983, the foreign credit line was exhausted and the country was more dependent than ever on foreign aid. The growing economic distortions and mounting debt service finally forced policy reforms. The main reforms were devaluation, increased producer prices for main crops, limits on wage increases, consumer price adjustments reflecting import costs, liberalized marketing, increased income taxes, and restricted government expenditure.

The price policy reforms have had some success in redirecting output from unofficial to official channels. However, price controls remain strong: fixed retail prices for most food items, fixed producer prices for agricultural products, supervised prices for manufacturing and services, and fixed margins for other goods. The price adjustments which occur about once a year have resulted in sharp and discontinuous price increases. The continuation of price controls could revive black market activities and reduce incentives. Guinea-Bissau's economic problems are not temporary. Prospects over the medium term are promising, provided that an expansion of the basic infrastructure is accompanied by adequate price incentives, a realistic exchange rate policy, improvements in the marketing system, and prudent financial policies.

KENYA

Lawrence A. Witucki

Kenya's agricultural sector provides about a fourth of GDP. The country has been successful in maintaining a high degree of food security, one of its central policy goals. Because the agricultural land base is limited, growth prospects depend heavily on increasing yields.

U.S. agricultural exports to Kenya are not large, but Kenya is a growing market for U.S. wheat. The United States imports large amounts of high-quality coffee and tea, resulting in a negative agricultural trade balance with Kenya. Agriculture accounts for over two-thirds of Kenya's export earnings.

The economy has advanced satisfactorily in most years. But, given the high population growth rate of about 4 percent per year, recent real GDP increases per capita have been limited. About 80 percent of the economically active population is in the agricultural sector. The natural resource base is modest, but infrastructure such as transport and airport facilities are relatively well developed. This helps explain Kenya's success in making the most out of export opportunities such as in coffee, tea, and horticultural products.

Unlike agriculture, the manufacturing sector, which contributes about 10 percent of GDP, developed mainly to serve the domestic market. Foreign exchange shortages have often limited the supply of industrial inputs.

Kenya is a one-party state, which has generally maintained political stability. The country is an outstanding example of a mixed economy, containing strong elements of private enterprise together with considerable government control over key prices, marketing, and trade.

Kenya's agriculture has one of the best records in Africa, although its food production per capita is trending downward, reflecting a limited land base and the world's highest population growth rate (4.4 percent). Major food crops are corn, wheat, rice, sorghum, millet, beans, potatoes, and sugar. Leading export crops are coffee, tea, sisal, horticultural crops, and pyrethrum.

Policy Goals and Agricultural Programs

Agriculture is to continue to receive priority as the major source of economic growth. The proportion of land owned and operated by smallholders will continue to increase. Kenya's plans call for better supplies of improved inputs through research, extension, and private sector investment. Dual, balanced objectives of both food security and export production are to be continued Higher yields of some food crops such as corn are a goal, as is increased area of coffee, tea, and horticultural crops. Oilseed crop development, particularly sunflowerseeds, is another goal. Marketing goals include more flexible pricing and an increased role for private enterprises. Kenya's major international goals are to continue to increase its markets and/or market shares for coffee, tea, and horticultural products.

The industrial sector had been highly protected and import substitution oriented. But, in recent years, the government has reduced protection and devalued the Kenya shilling.

Kenya in recent years has set producer prices high enough so that, with good weather, marketings have grown. Price reviews have received higher priority since 1980. Some liberalization has occurred in agricultural marketing. Controls on moving corn have been reduced except for areas near borders. Wheat imports are being privatized and the cotton lint and seed marketing board is being divested. Expected divestitures in 1987 include the uplands bacon factory and the Kenya meat commission.

In 1986, Kenya agreed to an agricultural sector adjustment operation credit from the World Bank. It is aimed mainly at helping smallholder families achieve higher intensity of resource use.

Fertilizer marketing has improved, with some competition among suppliers and removal of taxes and subsidies. Recent world price reductions were passed on to farmers. Agricultural research programs are perhaps most notable in coffee and corn, with the development of new varieties.

Most agricultural imports and exports are controlled by the government or its parastatals. Duty free entry is granted to live animals, fertilizers, medicines, tanning equipment, rolling mills, and some agricultural machinery. Tea and coffee sold at over Ksh20,000 per ton have an export duty, but exports to the preferential trade area are to be taxed less. Coffee exports have also been restrained by Kenya's International Coffee Organization quota.

Agricultural Program Evaluation

Sufficient incentives are provided to increase production of Kenya's key crops such as corn, wheat, coffee, and tea. Corn producer prices have stimulated production and the country has been self-sufficient in corn in all but the worst drought years. Surplus production in good years has become costly, however, and efforts to reduce parastatal costs by liberalizing domestic marketing are underway. Wheat production has also increased, but consumption is increasing faster and wheat imports continue to grow. A program to increase oilseed production, particularly of sunflowerseeds, was initiated a few years ago. But, progress has been slow. Cotton production also remains low and a restructuring of the cotton marketing system is underway.

Kenya's use of strictly limited agricultural land has been intensified by increased plantings of tea and to a lesser extent, coffee. But, much more productive use of land will be required by other crops, too. Export market availability for much larger production of tea and coffee is uncertain. Despite Kenya's success in increasing coffee and tea exports, the government's goal to diversify exports has been only moderately successful. The recent, more flexible exchange rate policy was helpful in making exports such as horticultural products more competitive, but bottlenecks of institutional and administrative bottlenecks continue. The Kenyan economy remains vulnerable to world commodity price cycles, however.

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LESOTHO

Lawrence A. Witucki

GNP per capita in Lesotho is about $400. The share of agriculture has increased from 23 percent to 31 percent of GDP during the 1980's, mainly because gross product from livestock tripled. Manufacturing and handicrafts made up nearly 8 percent. Mine wages in South Africa, however, increased rapidly during the early 1980's. Lesotho continues to tie its currency to the South African rand. South Africa remains the dominant trading partner.

Lesotho's natural resource base for agriculture, including land and climate, is poor and irrigation is minor. Agricultural production in Lesotho is almost entirely by smallholders. More than 80 percent of the resident labor force is in agriculture. During drought years, domestic production accounts for only 40-45 percent of the total cereal requirements. The land act of 1979 is meant to reform the allocation of land, including consolidation of fragmented holdings.

General goals are increased economic growth and employment. Agriculture and livestock continue as priority sectors. The objective of making the economy less dependent on South Africa continues. Water development projects in the highlands should increase Lesotho's bargaining power with South Africa, which has a strong need for more water. Increased industrial use of locally produced raw materials is also an objective.

The government controls only a few prices but it does set prices paid to farmers for the five main food crops of corn, sorghum, wheat, peas, and beans, and for wool and mohair. Coop Lesotho, the parastatal responsible for buying and selling these crops, recommends prices. Coop Lesotho also imports cereals and farm inputs, and distributes them through its network of stores. Inputs are subsidized.

The government encourages culling and selection. Grazing fees are to be introduced in some areas. A combined slaughterhouse-feedlot operation was initiated in late 1985. Wool and mohair prices are set by the livestock products marketing service of the ministry of agriculture in coordination with the South African industry. A second payment covers any excess of auction prices received over the gazetted prices.

Incentives for grain production for market continue to be inadequate compared with alternatives that able-bodied rural residents have of working in South Africa. Input subsidies are used to improve incentives but their costs may sometimes exceed the benefits. With reliable supplies of grains available in South Africa, the incentive for farm households to produce a surplus of cereals is not strong. Lesotho's goal of achieving less dependence on South Africa is extremely difficult.

Range resources require further improved management to reduce erosion. Land tenure reforms proposed to increase efficiency in the use of land would also raise the incentives for farming.

Food assistance programs have helped to provide a generally adequate supply of calories, but the nutritional balance is in doubt. Poverty of the rural landless continues.

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LIBERIA

Arthur J. Dommen

Liberia's main agricultural policy problem is to finance development of the agricultural sector, which accounts for 70 percent of the labor force and contributes a third of GDP. Up to now, Liberia's agricultural sector has sustained a modest but steady growth rate of food production, especially of rice, the principal staple (rice contributes about half the calories in the average diet). The government faces increasing difficulties as a result of its run-through of external funding sources and a major liquidity crisis caused by flight of U.S. dollars, which are legal tender. Liberia has always been independent, and has a presidential form of government. The current president, Samuel Doe, toppled the previous civilian government in a 1980 military coup d'état.

Liberia's GDP is about $300 million dollars per year, but it has been declining at approximately 2 percent per year. Despite repeated reschedulings of its debt, Liberia has failed to make good on its foreign debts, causing suspension of disbursements by several major donors.

Liberia's important export sector has been hard hit by declining prices for iron ore, natural rubber, and timber. As export earnings have declined, imports of petroleum products, foodstuffs, machinery parts, and transportation equipment have likewise been restricted.

Liberia's agricultural sector has grown steadily in recent years and now accounts for a third of GDP. Major food crops grown are paddy rice, corn, cassava, peanuts, and palm oil. Rubber alone accounts for 9 percent of GDP and 18 percent of exports; production rose in both 1984 and 1985. Rubber production, however, unlike other agricultural production, heavily depends on foreign capital investment, since foreign-owned concessions generate over 70 percent of total rubber production. An estimated two-thirds of value added is retained by Liberian factors of production. Firestone plantations company, owned by Firestone tire and rubber company, is by far the largest of the foreign concessions. In addition to producing 78 million pounds of rubber in 1985, Firestone purchases and processes over 70 percent of the output of Liberian-owned rubber farms.

Logging is undertaken by private, mainly foreign, concessions which operate under special agreements, including generous tax concessions, concluded with the government. Timber production has recovered following a recent slump.

Like many other African governments, the Liberian government pursues goals of controlling markets for agricultural products through state-run monopolies (parastatals). The government announced in August 1986 a "green revolution" plan, the basic message of which was to increase food production in order to reduce food imports and conserve foreign exchange.

In April 1986, a law was enacted requiring that 25 percent of export earnings be surrendered to the national bank of Liberia (before that, virtually all private sector foreign exchange transactions were handled freely by the commercial banking system). The parastatals LPMC and NFC set producer prices for and purchase from farmers the export crops coffee, cocoa, and palm oil. The LPMC also acts as the government's agent in implementing the PL-480 rice program, selling the rice to private retailers and transferring the proceeds to the treasury. Rice imports have been subject in the past to temporary bans.

Implementation of the "green revolution" plan seems problematic in view of the shortage of available investment funds, either internal or external, and the absence of new technologies in swamp and rainfed paddy production to boost productivity. Increased fertilizer use as well as possibly some acreage expansion in swampland areas, however, offer modest prospects of increasing output without too heavy an investment. The new banking law constrains the amount of offshore credit available to the private sector. Furthermore, Liberia is now experiencing a serious problem of inflation for the first time. The country's financial crisis and consequent import crunch, therefore, are not only hurting current consumption, but are seriously affecting prospects for development.

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MADAGASCAR

Stacey Rosen

In 1975, a socialist revolution resulted in the establishment of the Democratic Republic of Madagascar, 15 years after gaining independence from France. This revolution was led by Didier Ratsiraka, who continues as president today. In 1985, real GDP was about 5 percent below the 1980 level. Per capita GDP is among the lowest in the world, approximately $250. Agriculture comprises over 40 percent of GDP. The debt accumulated during the period of intense government intervention continues to be a severe problem. Debt service payments currently equal about 50 percent of export earnings.

The agricultural sector provides employment for almost 90 percent of the labor force and accounts for over 80 percent of the country's export earnings. Agricultural output increased 12 percent during the last 10 years, but declined on a per capita basis. Together, adverse weather conditions (drought or cyclones), shortages of imported inputs, and a deteriorating transportation infrastructure prevent output from keeping pace with population growth. Rice, the staple food crop, is grown on half of the cultivated land. At one time an exporter of rice, Madagascar became a net importer in 1970. Coffee is the primary export earner, accounting for a third of the total. Vanilla is the second most important export crop. Madagascar is the world's leading producer of vanilla, accounting for 75 percent of total supply. With the exception of the major export crops, which are handled by the state, distribution of agricultural commodities is dominated by smallholders and private enterprises.

Recent policy goals, have generally been directed toward reducing the fiscal imbalances which resulted from large public sector investment programs in 1979-80. Agricultural policies, in particular, have focused on increasing rice production so as to become self-sufficient by 1990, increasing production and improving the quality of traditional export crops, and encouraging production and consumption of nontraditional crops. In order to achieve these goals, the government has liberalized the pricing and marketing systems. Monopolies which previously controlled rice marketing have been eliminated. Restrictions on the movement of rice between regions have been removed. And minimum producer prices of rice, coffee, vanilla, and cloves have been increased during the last 3-4 years.

Removal of the retail ceiling price of rice caused the rice price to increase which ultimately increased the demand for other food crops as substitutes. As a result, cassava, potatoes, and corn have increased in the last few years.

The commitment for economic and agricultural growth is evident as Madagascar has continued to comply with recommendations of the International Monetary Fund and the World Bank. However, the country remains extremely vulnerable to adverse weather conditions which have been a persistent source of setbacks in the attempt to expand the agricultural sector. Because of the country's dependence on this sector, growth will be slow. Policy changes instituted since 1983 have provided incentives for producers to increase output.

MALAWI

Larry Witucki

Malawi is a poor country with a per capita GNP of $150. The economy is a mix of private and public enterprises. Hastings Kamuzu Banda, leader of the Malawi congress party, has been president since independence in 1963. Malawi is a one-party state and Banda became president for life in 1971. This landlocked country has taken a pragmatic foreign relations approach, with diplomatic ties to South Africa, but also joining the Southern African development coordination conference whose objective is to reduce South African dominance.

Malawi produces most of its domestic food requirements, as well as a range of export crops. Major crops are corn, tobacco, tea, sugarcane, peanuts, cotton, rice, sorghum, and cassava. The economy heavily depends on agriculture which contributes nearly 40 percent of the GDP and more than 90 percent of total exports. Malawi's policy goals are to maintain food self-sufficiency, while seeking to increase and diversify export crop production, improve its marketing system, and increase the marketing role of the private sector. Because the country is nearly self-sufficient in food, agricultural imports are small, generally about 6 percent of total imports. U.S. agricultural exports to Malawi consist of wheat aid and dairy products.

Malawi has had one of the better agricultural production records in Sub-Saharan Africa. Small-scale subsistence agriculture accounts for about two-thirds of Malawi's agricultural product, including the bulk of its food crop production. Large estates, mostly privately owned, have concentrated on tobacco, tea, and sugar for export. Nearly 80 percent of the economically active population is employed in agriculture, most in the subsistence sector. Wage employment on estates has been static.

Agricultural products are marketed through a parastatal, the agricultural development and marketing corporation (ADMARC), which co-exists with informal marketing channels. ADMARC has provided increased, guaranteed prices and an extensive network of market centers in order to stimulate deliveries. Price increases both stimulated deliveries and weakened ADMARC's financial position, since government-controlled selling prices and international export prices did not increase as rapidly as producer prices.

During the 1970's, Malawi emphasized export-oriented estate agriculture. Drought-reduced domestic production, combined with less favorable export commodity prices, made more diversified, productive smallholder agriculture a major policy goal in the 1980's. Balancing food and export crop production is now a central policy goal.

Efforts have been made to increase the marketing of crops produced by the subsistence sector. Since 1982, price increases have been used to stimulate marketing of a variety of small holder crops (cotton, peanuts, rice, and corn). Increased corn marketings permitted sizable exports in some years.

Prospects for export enhancement depend heavily on Malawi's ability to transport commodities through strife-ridden southern Africa. Securing and maintaining Malawi's most economic transportation route (through Mozambique) is therefore a major policy objective.

Agricultural marketing efficiency is to be improved by increasing private sector participation and reducing ADMARC's scope and making it more financially viable, in part through reducing consumer subsidies.

In addition to its program to stimulate smallholder production and marketing through price increases, Malawi has had a number of large, donor-assisted agricultural development programs and projects, including integrated rural development projects, World Bank structural adjustment programs, a smallholder fertilizer project, and a national agricultural research project.

Development is difficult in a poor, land-locked country facing insecure outlets for its trade. Growth in Malawi's agricultural exports has slowed in the 1980's. ADMARC has made progress in securing increased deliveries of a number of crops, and it does not have a monopoly position in marketing. For trading in tobacco and cotton, however, special licenses are required. ADMARC has provided increased and guaranteed prices and an extensive network of market centers. These price increases have led to smaller margins for ADMARC, and financial losses and budgetary deficits, since increased prices have not been passed on to consumers. The domestic selling price of corn is controlled by the government and many selling prices are constrained by export market price levels. Pricing policy alone is limited.

Malawi's programs are weak in the development of its human capital. Rural poverty and unbalanced diets led to malnutrition which contribute to high infant mortality.

Expenditures on education have been low, leading to widespread illiteracy and shortages in skilled manpower. Despite low wages in agriculture, urbanization remains limited.

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MALI

Margaret Missiaen

Mali became independent from France in 1960. General Traore came to power in a coup in 1968 and was elected president in 1979 when the present constitution came into operation. Mali broke with the franc zone in 1962 but re-established the CFA franc as its currency in 1984. Mali's per capita GDP of $150 is one of the lowest in the world.

Agriculture provides about 50 percent of GDP in Mali consisting of domestically oriented grain production and cotton production for both export and domestic markets. Services provide 35 percent of GDP and industry 15 percent. A policy of structural reform in agriculture has focused on the cereal sector. Objectives of the cereals marketing restructuring project (PRMC) are to liberalize Mali's cereal markets, to eliminate the operating deficits of the official marketing agency (OPAM), and to promote food production. The United States has been an important trading partner of Mali by providing food aid.

Millet/sorghum dominate agricultural output, using three-fourths of the land planted to major crops. Cotton is second with 7 percent of area, followed by rice, corn, and peanuts. An average of 45 percent of export earnings comes from cotton. Live animal exports are also important, but much of this trade is unrecorded.

Policy Goals and Agricultural Programs

Mali's political evolution can be divided into two phases. The first, 1960-68, launched the country on a socialist path aimed at social equity, modernization, and independence from France. The second phase of political evolution was one of halting, painful financial and economic reform. The main agricultural policy goals are to liberalize grain marketing, eliminate the operating deficits of the state grain marketing board (Office des Produits Agricoles du Mali, OPAM), promote food production, reorganize the Office du Niger (the rice-producing rural development agency), and create an income stabilization fund for cotton producers.

OPAM was established with monopoly powers in 1964. The Sahelian drought of 1972-73 led to large food aid and commercial imports by OPAM, which lost money by selling the commercial imports at low official prices. After the drought, official producer prices were raised without commensurate increases in consumer prices. Lax financial discipline allowed OPAM to continue operations despite losses.

Both France and the International Monetary Fund pushed for restructuring of OPAM in line with the currency reform undertaken in the late 1970's. The program, accepted by the government in 1981, proposed three actions: increase official prices, both consumer and producer, liberalize grain trade to include private traders, and improve OPAM's operating efficiency. The need for OPAM was never disputed because its improved operation was considered essential for regulating the open market. The grain marketing board was to maintain price stability, assure price equality for consumers, act as a buyer of last resort for farmers, and manage national grain stocks. OPAM also supplied grain to public agencies.

Primary support for PRMC came from the major food aid donors who realized that OPAM would be unable to operate even in the short run without external financing. The donors accepted that price adjustments and operating reforms could only be implemented gradually. In particular, it was considered politically risky to raise official consumer prices by large increments. The group agreed to provide food aid over a 5-year period while the government implemented reforms.

Cotton production is managed by the Compagnie Malienne pour le Development des Textiles (CMDT), which provides growers with technical assistance and inputs. CMDT purchases and gins seed cotton and delivers it to the state trading company (SOMIEX), which arranges exports. A 5-year cotton reform project was begun in 1983. Its objectives are to increase cotton production and producer revenue through a system of adequate prices for inputs and cotton, improved extension services, transfer of responsibilities to village associations, and a new system of revenue distribution. SOMIEX stopped exporting cotton.

The government has taken measures to reform SOMIEX, which also controlled the import and marketing of essential consumer goods such as sugar, vegetable oil, flour, milk, tea, and soap. SOMIEX's monopoly position in the market was abolished in 1986 and its staff substantially reduced.

Agricultural Program Evaluation

The PRMC is a mixed success. The reform program has focused attention on grain marketing problems and created a situation conducive to open dialogue. But, it is difficult to argue that the PRMC increased incentives for coarse grains. Because official marketings were always small and administrative controls often weak, liberalization had little effect on market prices, except perhaps by improving market efficiency. In 1985/86, OPAM paid producer prices well above market levels, bolstering producer income but incurring large losses.

Results of the PRMC are better for rice. Official producer prices have risen faster than inflation, while retail prices have fallen by about 20 percent in real terms. Beginning in 1985/86, private traders were allowed to compete with the state Office du Niger (ON) for rice grown on ON territory. In practice, the innovation was not publicized, and traders claimed to be constrained by lack of credit. Crop marketing credit was available exclusively for state organizations such as OPAM and ON.

The shift to economic prices for consumers has also been slow and inadequate. Until 1985/86, official consumer prices fell in constant terms, resulting in income gains for those with access to OPAM sales. The quantity of grains marketed at these official prices exceeds the level sold before the reform program, in large part because PRMC food aid has more than compensated for lower official marketings of domestic grain. Thus, total income transfers to selected consumer groups have probably increased. Likewise, with respect to financial losses in the grains sector, the program did not achieve dramatic reductions. It shifted the way the losses are financed, however, mainly from farmers, taxpayers, and banks to the food aid donors and the Office du Niger.

The cotton agency has continued to raise producer prices despite falling world prices. The SOMIEX import monopoly on sugar and milk was restored in late 1986 after price rises led to political pressures.

Another good harvest in 1986/87 led to even greater losses by OPAM. To support producer prices and avoid worsening the OPAM financial situation, the government imposed a 32.5-percent import duty on rice and temporarily suspended rice imports. Donors are being ask to extend support for the PRMC.

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MAURITANIA

Arthur J. Dommen

Mauritania is a vast country at the westernmost extremity of the Sahara Desert. Its main agricultural policy problem is how to modernize its traditional pastoralism, oasis agriculture, and irrigation on the bank of the Senegal River. The services sector is the most important in the economy, accounting for about 45 percent of GDP. Agriculture, forestry, and fishing contribute 30 percent and industry, including mining, 25 percent of GDP. Livestock herding accounts for more than 15 percent of GDP, crops for about 3 percent. Per capita GDP is about $400. The military has been in effective control of Mauritania since a coup toppled the civilian government several years ago. Mauritania's foreign exchange revenue comes equally from fish and iron ore, with the latter declining in recent years.

After many years of inadequate economic policies, Mauritania is pursuing an adjustment effort aimed at eliminating internal and external imbalances. In 1985, the government embarked on a program which stressed both demand management and structural adjustment measures. Authorities devalued the ougiya, raised consumer and producer prices for cereals, increased interest rates, froze public sector spending, and reduced the role of the public sector. The government controls marketing and pricing of cereals, with the private sector's role being legally restricted to wheat marketing and flour importing. In recent years, food aid has represented about half of all cereal supplies. The government's 1985-88 investment program allocates a relatively high 36.6 percent of investment to the agricultural sector. The pace of irrigation development has quickened recently, resulting in an irrigated subsector now comprising 7,000 hectares.

Mauritania continues to enjoy foreign financial backing and will probably be in a position to implement development programs of limited scope in its small agricultural sector. As a result of the cereal price increases implemented in early 1985, prices for domestic and commercially imported cereals have been brought to full import parity.

Food aid, which accounted for 60 percent of supplies in mid-1985, decreased in 1986 as part of the government's program to increase domestic production and improve work incentives through a food-for-work program. Increased producer prices and good weather have contributed to improved grain output. The real test of the reforms will come during the next drought. Development of large-scale irrigation projects is hampered by their high cost. The government is continuing with a program to develop 10,000 hectares of small-scale irrigation projects by 1990.

MAURITIUS

Stacey Rosen

Mauritius gained independence from Britain in 1968. The Mauritian legal system is based on French civil law combined with English common law. Real GDP has grown rapidly since 1980, averaging over 4 percent a year. Per capita GDP is very high relative to Sub-Saharan African standards, $1,100. Agriculture in Mauritius is virtually synonymous with sugar activities. Over 90 percent of cultivated area is devoted to sugar and it employs 30 percent of the labor force. The structure of the economy has changed in recent years. Sugar's share of GDP has fallen from more than 20 percent in 1976-79 to about 13 percent. The share of the manufacturing sector is now about 20 percent. Because dependence on sugar has declined, the economy is no longer as vulnerable to weather conditions or world sugar prices. Sugar accounts for 40 percent of export earnings, while items produced in the export processing zone (EPZ), primarily textiles, account for over 50 percent of the total.

In 1970, the EPZ was established as a result of new policies aimed at diversification of exports in order to reduce dependence on sugar. The government offered incentives such as tax holidays and exemption from import duties to domestic and foreign investors. The EPZ has been a tremendous success. Two hundred firms, providing 40,000 jobs, have been established during the last 10 years. Export value of the EPZ has increased almost tenfold during the same time.

The plan for the sugar industry, 1985-90, emphasizes rehabilitating and modernizing sugar mills, improving productivity of land, labor, fertilizer, and equipment, supporting irrigation, and providing better research and extension services.

Policies for other agricultural activities include attaining self-sufficiency in selected food crops, increasing production of beans, peas, and citrus fruits, and reducing dependence on imported meat, milk, and fish. To help attain these goals, the government has made several changes: (1) experiment stations have been established to provide improved seeds, (2) the agricultural marketing board has provided subsidies for a few commodities, (3) storage facilities have been expanded, and (4) a group has been set up to search for export markets for small producers. Methods used to expand land area devoted to food crops include crop rotation, multiple cropping, and the conversion of sugar land to crop production.

These policies have been successful. Mauritius has achieved self-sufficiency in potatoes; self-sufficiency in onions was expected in 1987. Corn production has also increased. If these production achievements are maintained or possibly improved, imports could be reduced, freeing foreign exchange for new investment in the economy.

MAYOTTE

David W. Skully

The economy of the island of Mayotte is primarily devoted to agriculture and fishing. The presence of French troops and civil servants generates employment. Rice and fish are the most important foods, each comprising about 25 percent of household expenditure. Mayotte produces about a quarter of its rice consumption. Almost all rice imports are of Thai origin. Mayotte has no significant trade with the United States. France and the Republic of South Africa are the principal suppliers of agricultural products. The island's agricultural comparative advantage is in the production, processing, and export of ylang-ylang (a key ingredient in perfume), vanilla, coffee, and copra.

Mayotte is officially under French administration. It is one of the four Comoros Islands. The Comoros Islands were a French colony until 1975. In 1974 and 1976, each of the four islands held referenda on the issue of whether to remain under French administration or become independent as part an independent Comoros Island entity.. Mayotte's predominantly francophone and Catholic population chose not to join with the poorer Muslim, Swahili-speaking populations of the other three islands. The Federal Islamic Republic of the Comoros claims possession of Mayotte, a claim upheld by the United Nations despite Mayotte's landslide referenda for remaining with France. French troops have been garrisoned on Mayotte since 1975 to defend it from threatened military occupation by the Comoran government.

There is no information on agricultural policy as such in Mayotte. The objectives of French administration are best summarized as improving the quality of life, promoting economic independence, and assuring the security of the population. There is ample information about the exports and prices of ylang-ylang and vanilla. Extension services exist for livestock, including a program to improve the quality of zebu meat. Fishing cooperatives have also been established. Little information exits on crop production. French development volunteers are active on the island.

MOZAMBIQUE

Stacey Rosen

Mozambique's government is a combination of militant socialism and nationalism. Since gaining independence from Portugal in 1975, the country has lost the managerial and technical expertise needed to operate its once modern infrastructure. Per capita income in 1985 was $250. The country's balance of payments position has deteriorated in recent years. The deficit has been financed externally, resulting in a large debt burden. Mozambique's debt service ratio is currently around 200 percent. Its trade position has improved recently, mostly because of cuts in imports. These cuts, however, have had adverse effects as essential inputs have not been imported, thereby constraining output in several key sectors. Mozambique exports are diverse, led by cashew nuts, prawns, tea, sugar, and cotton, thus making the country less vulnerable to specific commodity price variations.

Agriculture accounts for almost half of GDP and employs over 80 percent of the labor force. It is the source of almost all major exports. Over 90 percent of cultivated land is farmed by smallholders, who are the primary growers of the largest export crop, cashew nuts. Major crops are cashew nuts, sugar, tea, sisal, and cotton. The primary activity of the state farms is growing export crops. In 1985, marketed production of the major export crops was about 25 percent of the 1980 levels. Agricultural problems are due to poor weather conditions, displacement of farmers due to an internal war, deteriorating transportation infrastructure, reduced availability of consumer goods which reduces incentives to harvest and market, and a shortage of imported inputs.

After independence, land, rental property, legal services, education, and medicine became nationalized. This policy became very costly and was not very successful in expanding the economy. For this reason, the government has instituted programs of decentralization. A policy change in 1983 resulted in the movement from state farms to smallholders, from heavy industry to light, and from major new investments to a focus on rehabilitation and maintenance. Private investment has been encouraged.

Producer prices of cashew nuts, cotton, and foodstuffs were recently increased substantially. In real terms, however, prices have declined. There exists a producer price bias in favor of food crops versus export crops. Policies were instituted with a focus on only a few crops, but they were successful in increasing production. An externally financed project which provided fuel, transportation, and inputs for cashews resulted in increased output. Output of vegetables and citrus fruit expanded due to pricing incentives.

NAMIBIA

Lawrence A. Witucki

Namibian policies and government programs are in transition as settler influence in the government declines and South Africa permits more local autonomy prior to eventual independence. South Africa continues to administer the country, despite the 1966 United Nations decision to revoke its mandate. South African steps to move the country toward independence, including the appointment of an interim government (1985) and the drafting of a constitution have not ended military resistance by SWAPO (the south-west African people's organization).

Mining dominates the economy, contributing slightly over 30 percent of GDP. But, agriculture has a substantial effect on the local economy, providing 15 percent of GDP and employing 60 percent of the labor force. Namibian agriculture is dualistic. A settler-dominated commercial sector, relying heavily on migrant labor, produces livestock for domestic sale and export, while peasant agriculture produces subsistence food crops (primarily corn and millet) and livestock. Crop production has not kept pace with population growth, with 1985 per capita production estimated about 10 percent lower than in 1975. Livestock production is dropping, as many commercial farmers have left the land due to drought, low returns, and pressures from the blacks for liberation.

The commercial agricultural sector exports livestock products to South Africa as well as to other countries. Grains, fruits and vegetables, and dairy products are imported, mostly from South Africa. U.S. agricultural trade with Namibia has been small and ended as a result of trade sanctions imposed by the United States in 1986.

The direction of agricultural policy under an eventual independent government remains a question. Therefore, many white farmers lack a long-term commitment to their enterprises. To encourage whites to remain on their farms, South Africa provided funds in 1980 for subsidized land settlement schemes. When the settlers had more control of the government the maintenance of high levels of exports of livestock and products was a major objective.

For most blacks, the immediate and overriding priority is the achievement of independence. Under the colonial administration, blacks were restricted to tribal reserves, where land pressure, communal tenure systems, limits on herd size, and cattle marketing restrictions limited agricultural opportunities. More recently, improved and diversified crop production by blacks is being encouraged in the northeastern areas, and an agricultural college and experimental farms have been built.

The potential of Namibia's black population has been restricted under the policies and programs of the South African-controlled government, which has in turn limited agricultural investment in black areas and reduced black agricultural potential.

The effects of famine have been reduced as the earnings of contract laborers and the South African-organized district grain stores, supported by a grain tax and relief imports, enabled people to survive droughts. However, the increasing population, more livestock, and overgrazing have increased the farming of more drought-prone land, which together increased the risks from drought.

Namibian agricultural markets are also controlled by, and subject to, South African interests. High South African cattle supplies led to quotas on Namibian exports.

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NIGER

Margaret Missiaen

Sorghum and millet are the main food crops grown in Niger, accounting for over 70 percent of cultivated area. Cash crop production has switched from peanuts in the 1970's to cowpeas in the 1980's. Agriculture's share of nominal GDP averages 45 percent and accounts for a major portion of private sector trading. Food self-sufficiency is the main policy goal. The government has undertaken reforms which reduce the role of the public sector in the rural economy. The United States is not a major trading partner.

Niger became independent from France in 1960 and maintains close ties to France. The supreme military council, led by President Seyni Kountche, has been in power since 1974. Niger has a population of 6.7 million with a per capita income of $250. Its economy is dominated by agriculture and uranium mining, the principal source of foreign exchange and government revenue. The uranium price boom in the mid-1970's resulted in a rapid growth of the mining and public sector. Uranium provides about 80 percent of export earnings.

The rural sector provides a livelihood for 90 percent of the population and provides almost half of GDP. Crops and livestock contribute 26 and 16 percent. Commerce, transport, and services account for another 25 percent of GDP. While millet and sorghum are the most important crops, livestock is the most valuable agricultural export, providing about 15 percent of the total. Actual live animal exports are probably higher because much of the trade is unrecorded. In normal years, Niger is close to self-sufficient in grain except for wheat imports of 30,000-40,000 tons. Food imports make up less than 10 percent of the total.

Following the drought of the early 1970's, the government's food self-sufficiency strategy was implemented through large-scale investment projects, heavy institutional infrastructure, and government intervention in agricultural input, product, and financial markets. A financial crisis and subsequent droughts highlighted the high costs and ineffectiveness of these policies and prompted a reassessment of agricultural policies. Reform of the rural development strategy, begun in the early 1980's, included the following measures: reorientation of investment in the primary sector, restructuring of the grain marketing system, reduction of subsidies for agricultural inputs, and redefinition of agricultural research priorities. In the livestock sector, policies are geared toward the progressive modification of the traditionally extensive use of livestock grazing areas.

The basic objective of the government is to promote and diversify production through greater reliance on the private sector. The measures include a reduced role for the grain marketing agency, Office de Produits Vivriers du Niger (OPVN), in price stabilization, rural income support, and subsidization of urban consumers; maintenance of a cereal security stock; enhanced cost recovery in the agricultural sector; and reform of the agricultural credit system. The investment policy in the rural sector is be geared toward developing small-scale operations.

The role of the public sector in imports is also being curtailed. Between 1970 and 1983, the state importing company, Copro-Niger, had exclusive rights to import and market basic commodities including wheat flour, sugar, milk, tomato paste, and tea. Copro's mandate was to assure regular supplies at low and uniform prices, leading to perennial operating deficits. In 1985, Copro's import privileges were removed and its retail outlets closed. Copro's functions were changed to that of a monitoring agency.

Through OPVN, the government tried to guarantee minimum prices to producers and stabilize these prices. Neither effort was successful. Rather than protecting farmers from the vagaries of the marketplace, official price policy during the 1970's seems to have aimed at shifting the terms of trade between rural and urban sectors in favor of the latter. In recent years when open market producer prices fell below official prices, OPVN was not able to purchase all quantities offered. The floor price aspect of official marketing became inoperative in good crop years, when farmers needed the support.

While the agricultural policy reforms are a step in the right direction, objectives are sometimes contradictory and implementation is difficult. For example, authorities agreed that OPVN would buy and sell through a bidding and tendering system, but at the same time remain committed to fixed "official" producer and consumer prices. Official producer prices remain, though they are now called "intervention prices." A tender and bid system at fixed prices has been substituted for OPVN purchases from cooperatives and licensed traders, also at fixed prices. Marketing is not much more competitive than before 1984, nor is the spread between OPVN buying and selling prices adequate to avoid deficits. The level at which producer prices are fixed seems more flexible under the present arrangement. But in good crop years, the official price exceeds the market price, resulting in large losses for OPVN. In a bad crop year like 1984/85, the official price is below the market and bidders cannot deliver. That is the way the old system worked.

It is evident that security stocks are not being maintained at the desired level. OPVN grain stocks in early 1986 were almost 210,000 tons, instead of the targeted 80,000 tons. Because of relatively high official prices during 1985/86, OPVN purchased much more grain than needed for renewal of the security stocks. The problem in Niger, as in many other African countries, is that policy reforms introduced to deal with shortages are not flexible enough to respond to surpluses.

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NIGERIA

Carl C. Mabbs-Zeno

Root crops provide the largest volume of agricultural production in Nigeria although Nigerians depend on grains for about half their calorie intake.

Cocoa is the only major agricultural export today. Agricultural production has kept pace with population over the past decade although national policy focused on industrial development through the petroleum sector. An overvalued currency supported that focus with low food prices. Recent debt problems and low petroleum prices, however, are generating new interest in agriculture in order to reduce grain imports and to raise exports of tree crops. Agriculture provides about 20 percent of GDP and employment for 53 percent of the workforce. Nigeria retains the potential to be one of the world's largest grain importers, but its currency devaluation and its ban on certain food imports may severely limit its agricultural trade.

The Economy

Nigeria achieved independence from Britain in 1960 and the two countries maintain strong economic ties. A democratic state modeled after Britain lasted over 5 years from independence and a second experience with democracy, modeled after the United States, lasted 4 years from 1979. The military held state power at other times but all these governments showed a Western orientation and professed support for private markets to allocate resources. Even so, the public sector expanded until it accounted for about half of GDP and two-thirds of employment in the modern sector. Generally weak government support has been extended to agriculture in favor of development strategies based on investment in petroleum and trade. Policies intended to substitute food crops for export crops accompanied fairly stable per capita agricultural production since 1974 except for drought years. The Nigerian economy has been dominated since the early 1970's by petroleum which provided more than three-fourths of government revenue and over nine-tenths of export earnings in the 1980's.

The Agricultural Sector

Agriculture provides little surplus today but it is productive enough to support most of the consumption by Africa's largest national population, about 100 million people in 1986. The only major agricultural export now is cocoa. However, Nigeria used to export peanuts, cotton, rubber, and oil palm products. The largest volume of production is in root crops, primarily cassava and yams, yet nearly half of the calories consumed come from grains. Sorghum and millet are the largest grain crops with corn and rice together contributing about a fourth of grain production in recent years. Fish and livestock are important sources of protein although cattle are limited geographically by trypanosomiasis.

Policy Goals

After independence, Nigeria continued the policy goals of the colonial period, extracting surplus value via state marketing boards for exported commodities and inviting foreign investment in industry. With the rise in petroleum production and petroleum prices in the early 1970's, however, agriculture quickly became an unimportant source of state revenue and state interest in developing cash crops dwindled.

Rural development and food self-sufficiency were soon cited as national priorities, hastened by low production and high international prices during the drought of 1973. Production by state agencies and production subsidized by state offices were expected to eventually supply cheap food to replace growing food imports. Instability in petroleum prices and corruption undermined the cheap food policy and led to sudden accumulation of debt in 1978 and after 1982.

Recent policy aims at conserving foreign exchange by substituting domestic crops for imports and raising prices for domestic production. The state continues to depend heavily on petroleum revenue although returns in that sector are not likely to return soon to peak levels. A stronger reliance on market incentives is shown in state tactics to raise agricultural productivity and to reduce import demand. Private investment, including foreign investment, is encouraged, especially in agriculture.

Agricultural Programs

The domestic agricultural programs in Nigeria reflect the recent shift toward privatization goals, mainly through sale or abolishment of government institutions which had been centerpieces of previous development strategies. By 1986, marketing boards had already become relatively unimportant buyers, except for cocoa, so dismantling them in that year brought little change. The sale of state-run agricultural production facilities also began in 1986 with all state agriculture scheduled for eventual sale, including various processing operations such as dairies, slaughterhouses, and breweries. The ownership of parastatals supplying agricultural inputs is also being reduced as shown by the decline to a 10-percent equity holding in the fertilizer procurement and distribution company, previously a state entity.

Subsidization of agricultural inputs is also being reduced. In 1984, about 85 percent of the cost of imported fertilizer, the largest subsidized input, was paid by the government, but the subsidy rate fell during the next 2 years to 25 percent. Domestic petroleum prices doubled in 1986 as a result of reduced subsidies.

More dramatically, the 1985 initiative to expand the river basin and rural development authorities (RBRDA's) has been reversed. In the last year of the Buhari government, 1985, the number of these agencies doubled to 18 and their responsibility was extended to rural development in addition to the previous irrigation-oriented tasks. Seven of the authorities were discontinued in 1986 and the assets of several others were sold in 1987.

Despite these privatization measures, the government remains active in several areas of agriculture and rural development. The agricultural development projects, partly funded by the World Bank, continue to provide chemical inputs, seeds, extension service, new roads, and other infrastructure to specified project areas. A similar program offers less intensive services over a wider area through agro-service centers. Agricultural credit still receives government support through banking regulations which allocate percentages of loans by commercial and merchant banks according to product type (for example, petroleum or food processing), location (rural or urban), size of bank, and share of Nigerian ownership of the borrower. The percentage designated for agriculture has risen each year since 1984 while the subsidy on interest rates declined.

Nigeria participates in several international organizations to promote agricultural research and development such as the Food and Agriculture Organization of the United Nations and the West African Rice Development Association. Nigeria is also a member of several trade organizations based on commodities currently or previously produced in exportable quantities, including cocoa, coffee, cotton, peanuts, timber, and rubber. Regional development objectives are pursued through the Lake Chad Basin Commission, the Niger River Commission, and the Economic Community of West African States. Major trade relationships are defined by the Lome Convention and the General Agreement on Tariffs and Trade.

Tariffs were generally low before 1982, less than 10 percent for intermediate goods and around 50 percent for nonfood consumer goods. Tariffs were raised in 1982 on several agricultural imports in addition to a 10-percent surcharge placed on all imports. In 1984, duties were increased on numerous agricultural goods resulting in tariffs of 20-60 percent. High tariffs remained an important policy instrument for limiting agricultural imports.

The government's most direct effort to slow the trade arrears which accumulated in 1981-1983 was to ban imports of particular commodities including corn and rice. Licenses, which restricted the quantity to be imported, were even more widely used after 1982 until nearly all commodities required licenses. Licenses are scheduled to be severely curtailed in 1987 in favor of bans and alternative measures to limit imports.

Countertrade was employed during 1984 in separate agreements with Brazil and France, each representing exchanges in value of about $1 billion. In both cases, Nigeria traded petroleum for a variety of products including agricultural goods. At the end of 1984, at least six more nations were negotiating large countertrade arrangements with Nigeria when a moratorium on such deals was announced in mid-1984. Two years later, countertrade resumed although this technique is now used more sparingly.

Foreign investment has generally been welcomed in Nigeria, at least since the early 1970's. The agricultural sector has never attracted much foreign investment in production although most commercial processing is associated with multinational firms. In the 1980's, several policies were changed to induce further investment in food production, beginning with a 5-year tax holiday for investors combining production and processing and cessation of import duty on agricultural machinery. In 1984, the government announced a rise in the permitted level of foreign equity participation to 80 percent for large-scale corporate farms although it never actually allowed any such rises in equity. A government office was set up in 1985 to facilitate the process of foreign investment. Restrictions on repatriation of funds were also relaxed.

The increased reliance on market incentives led to the establishment of a two-tiered exchange for foreign currency in late 1986. Under this system, trade would soon occur with currency valued at international market prices rather than through the overvalued naira. The naira declined in value by 80 percent when the foreign exchange market first opened. The availability of foreign exchange is also constrained by a heavy burden of debt which resulted mainly from trade arrears in 1982-83. The official policy announced in 1986 is to pay a maximum of 20 percent of GNP in debt repayments. The 1986 policy changes allowed rapprochement with the International Monetary Fund, freeing loans preconditioned on IMF approval of structural adjustments although domestic political pressures apparently prohibit taking a new IMF loan.

Agricultural Program Evaluation

The recent removal of marketing boards, state farms, and RBRDA's is unlikely to harm agricultural production since none of these institutions had assisted effectively in the past decade. The marketing boards generally offered prices well below market prices, except for cocoa, so their purchases were small. Production on state farms remained disappointingly low and they generally failed to yield profits. Many of the RBRDA's had never become fully operational while the older irrigation projects consistently failed to produce enough revenue to cover even their operating costs.

Similarly, the reduction in input subsidies will have little effect on production. Much of the imported inputs were wasted through ineffective transportation. Furthermore, the value of the subsidy was relatively small for farmers since middlemen often intervened in supplying the inputs. Credit for investing in production has never reached many small farmers even though small farms account for most production. So, small adjustments in the terms of credit will also little affect aggregate agricultural production.

Both foreign and domestic private investment in agriculture responded quickly, however, to rising food prices originally brought about through import loans and licenses and now maintained through market valuation of the naira. The price effects relate mainly to foods consumed in the urban sector, such as preprocessed foods, rice, and various meats, so the new production efforts of multinational and corporate firms have been in selected commodities. Poultry and beverages are among the most attractive investments. Rice production was already expanding rapidly.

A comparison by USDA of various forms of subsidy and taxation found that overvaluation of the naira accounted for about 70 percent of the policy effects experienced by agricultural producers for five major traded commodities from 1977-85. The two-tiered foreign exchange market successfully devalued the naira in late 1986 although frequent adjustments in procedure obscure the precise value of the naira.

No pattern of gains from ownership of former state resources has yet been revealed, largely since the privatization process is slow to turn over control. Little responsiveness of potential export crops, such as cotton, rubber, palm oil, or cocoa, has been demonstrated under the new policies.

With its ample arable acreage, good roads and ports, and a substantial, if unstable, nonagricultural source of foreign exchange, Nigeria is well ahead of many African countries in establishing its agricultural sector. The devaluation of the naira constitutes a major commitment to rural producers which is likely to contribute to import substitution goals significantly if it is maintained.

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RWANDA

Stacey Rosen

Rwanda, a democratic country, gained independence from Belgium in 1962. It is the most densely populated country in Africa. The rural sector, consisting of agriculture, forestry, livestock, and fishing, accounts for almost 40 percent of GDP, over 70 percent of export earnings, and 90 percent of the labor force. Manufacturing contributes about 20 percent of GDP. Production of food crops, which is done by smallholders, is the principal agricultural activity. The principal food crops are beans, cassava, corn, and sorghum. Export crops are being grown by the same producers, but are allocated only 4 percent of the cultivated land area. Coffee is the largest export earner, contributing to 65 percent of the total. Tea is the second most important export crop. Agricultural output is constrained by land availability and declining soil fertility.

Rwanda faces numerous constraints to economic growth and development: (1) very high transportation costs in the landlocked country, (2) lack of natural resources, (3) small export base, which increases vulnerability to external forces, (4) lack of trained workers, (5) lack of arable land, and (6) very high annual population growth (3.7 percent). The end of the coffee price boom in the early 1980's portended problems for this prosperous economy. Since then, real GDP has stagnated, with per capita GNP of only $280. There are some bright spots in the economy, however. In recent years, reserves covered about 6 months of imports, which is very high relative to other Sub-Saharan African countries. The debt service ratio is very low, averaging less than 5 percent since 1980.

The 1982-86 development plan emphasized agriculture so as to reduce dependence on imported foods and increase export earnings. It focused on self-sufficiency achieved through expansion and diversification of food crops. New projects were aimed at improving soil fertility, encouraging the use of improved seeds, and providing extension services. More investment was geared to research.

Real producer prices for the major crops, particularly export crops, have decreased since 1980. For that reason, many farmers have abandoned coffee production in favor of food crops. Even though cultivation practices and extension services have improved, food production has not kept pace with population growth. The failure to maintain per capita production is due to the lack of price incentives, adverse weather conditions, and the reduction of external aid.

SAO TOME AND PRINCIPE

David Skully

The economy of the Democratic Republic of Sao Tome and Principe is based on the production and export of cocoa. Small amounts of copra (produced from coconuts), coffee, and palm kernels are also exported. Agricultural production accounts for about 40 percent of GDP. However, because much of the service and manufacturing sectors of the economy is devoted to the transport and processing of agricultural products, the agricultural sector accounts for 65-75 percent of GDP. The central goal of the current government is to revive the cocoa sector which has been grossly mismanaged since independence in 1975. Most imports are contracted on concessional terms. U.S. agricultural trade is insignificant, consisting primarily of food donations.

When it became apparent, in the early 1970's, that Portugal would dispose of its African possessions, divestment occurred from the colony and most of its skilled labor and managerial talent emigrated to Portugal or Brazil. At independence, the plantations were nationalized and consolidated into 28 state enterprises. Cocoa production, which had stabilized at 10,000 tons under private ownership prior to 1975, plunged to 6,000 tons in 1976 and declined steadily to about 3,500 tons by 1983.

Because cocoa exports account for roughly 95 percent of the foreign exchange earnings, the decay of the cocoa sector carried the rest of the economy down with it. Per capita GNP has fallen steadily since independence and was about $300 in 1983 U.S. dollars in 1987. Political power rests with the movement for the liberation of Sao Tome and Principe. Its leader, Dr. Manuel Pinto Da Costa, has been president since 1975. The strong Marxist orientation that the government exhibited at independence has gradually diminished as the decay of the economy made the government increasingly dependent on inflows of foreign aid which have come primarily from Western donors.

Under colonial rule, Sao Tome and Principe took advantage of its comparative advantage in cocoa production and imported most of its requirements for rice and wheat. Vegetables, livestock, and poultry were raised. A decline in export earnings curtailed food imports in the late 1970's and the inhabitants turned to intercropping food crops among the cocoa trees. Such intercropping led to a decline in cocoa yields, and introduced erosion problems. As the government became more successful at soliciting food aid, food was supplied to the population at minimal cost. This cheap aid undercut local grain production and removed the incentive to work on cocoa plantations. The government recently increased food prices (they are still below world prices) and has begun paying plantation wages in grains rather than in cash. This program is under the auspices of the World Food Program.

Several multilateral and unilateral aid agencies have programs in the country and are generally of three varieties: reviving the cocoa sector, improving domestic food production (for example, introducing pig raising), and health and sanitation. These three areas appear to be the priorities of the government as well. Because of its small population and geographic size, relatively small amounts of food aid--3,000-4,000 tons of grain--can insure a minimum diet for all. The relative efficiency of aid has made it very attractive to donors and there seems to be little risk of severe malnutrition. A dilemma for the government is how to manage the aid flow to avoid dependence on external assistance.

SENEGAL

Margaret Missiaen

The main food crop grown in Senegal is millet/sorghum, accounting for almost half of area planted. Grains, including millet/sorghum, rice, and wheat, supply two-thirds of the calories in the diet. Another two-fifths of the cultivated land is used to produce peanuts, the major cash and export crop. Agriculture comprises a fifth of GDP. Until recently, the government's intervention in agriculture covered virtually the entire process of production and marketing of all crops, including the fixing of producer prices and the distribution of inputs. However, under the new agricultural policy begun in 1984, the government has taken important measures to reduce its involvement and subsidies in the rural sector. Agricultural commodities provide a quarter of export earnings. Food products account for a fifth of imports. The United States is not a major trading partner of Senegal except during years of large food aid shipments.

The Economy

From the time of independence from France in 1960 until 1981, Senegal was led by President Leopold-Sedar Senghor. He voluntarily stepped down in 1981, turning the presidency over to Abdou Diouf, who was elected in his own right in February 1983. President Diouf has strengthened and developed the democratic system by introducing an unrestricted multiparty system. Pro-Western Senegal maintains particularly close relations with France.

Nominal GDP is about $3 billion--$450 per capita--placing Senegal in the middle range for Sub-Saharan countries. The service sector contributes over 50 percent of GDP. The primary sector provides a fifth of GDP, with crops and livestock each contributing about 10 percent.

The Agricultural Sector

Agriculture employs approximately 70 percent of the labor force, a much larger portion than its share of GDP would indicate. Agricultural production in Senegal is heavily dependent on dryland crop cultivation. Almost 90 percent of the crop area is allocated to millet, sorghum, and peanuts. In recent years, peanuts have lost their dominant position to grain crops. The leading cash crop is peanuts which are processed into oil and meal for export. The oil milling industry represents about 12 percent of total industrial output. Senegal's major food imports are rice (350,000 tons) and wheat (100,000 tons). Agricultural imports average a fourth of total imports.

Policy Goals

In 1984, the government announced its new agricultural policy which underlined the commitment to cut sharply the state's intervention in the rural economy and to transfer more responsibility to farmer organizations and the private sector. The fundamental orientations of this policy are fourfold: (1) reform the cooperative system to leave most decisions regarding production, storage, and distribution to farmers, (2) reduce the role of rural development agencies, (3) strengthen the supply inputs system, and (4) pursue appropriate pricing policies, especially shifting consumer prices in favor of domestic cereal production.

The government's long-term objective in the agricultural sector is to attain food self-sufficiency, while promoting increased production of export crops. Millet production competes with peanuts in certain areas. Under the newly launched seed program, higher peanut yields are expected to offset the switch in area planted to food crops.

Agricultural Programs

The government's regular program of assistance to the agricultural sector was carried out until August 1980 through the Office National de Cooperation et d'Assistance pour le Development (ONCAD). After the liquidation of ONCAD, which had accumulated debts of more than $400 million, government intervention was decentralized by assigning different tasks to a number of rural development agencies.

Peanuts have always received special attention from the government. The two oil milling companies had a monopoly on purchasing peanuts and selling the oil and meal on domestic and foreign markets. However, any profits or losses arising from the marketing of peanuts accrued to the government. In line with the new agricultural policy, measures were introduced to strengthen the peanut sector. The oil mills are now fully responsible for financing any deficit resulting from marketing peanuts. Millers are free to make their own marketing arrangements and private firms are authorized to buy peanuts directly from farmers and sell them to the mills.

The government has intervened heavily in rice production. To reduce the government's operating deficit, farmers are now responsible for the costs of land preparation and maintenance. The producer price of paddy rice was increased to provide more incentives. The retail price of rice was also raised. In setting the retail price of rice, the authorities aim to provide minimum nominal protection to domestic producers of 25 percent over the import cost.

The authorities are taking steps to improve the operations of its price control agency (the CPSP), which are important not only to the agricultural sector but also to public finances. The CPSP's monopoly on rice imports was abolished effective December 1986. If the private sector performs satisfactorily, the rice trade will be completely privatized in December 1987. Management of a 60,000-ton security stock will remain the responsibility of the CPSP. To liberalize the marketing of domestic cereals (excluding paddy rice), all barriers and administrative controls were lifted. The official producer prices for grains are "floor" prices.

Agricultural Program Evaluation

Senegal's financial difficulties, negative per capita growth rates, and the deterioration of its agricultural sector can be attributed to three main factors: chronic drought, unfavorable changes in the international economic setting, and inappropriate policies. These policies included biases toward urban areas and peanut production, nationalization, and expansion of Senegal's rural development bureaucracy.

Senegal is entering the crucial phase of its 1985-92 structural adjustment program, with the government now facing a number of difficult decisions as it tries to shift the focus of its economic liberalization measures from austerity to stimulating growth. The program implementation so far is considered a success by donors. However, overall economic performance remains sluggish. Real GDP growth in the mid-1980's was nearly offset by population growth.

Another concern is that the government-controlled peanut mills are operating at only 40 percent of capacity, because a substantial share of the crop is marketed unofficially. While higher producer prices did boast official purchases during the last 2 years, the removal of input subsidies and falling world vegetable oil prices make further increases unlikely.

The state's record in promoting marketable surpluses of domestically produced cereals has not been impressive. The amount of grain marketed by state agencies has remained below 5 percent of the crop since the late 1970's. Government efforts to market food surpluses have generally failed because of several factors: low official producer prices in relation to cash crops, lack of financing to purchase crops at harvest when farmers most need money, the existence of better organized nonofficial channels for marketing millet/sorghum, and the absence of a large marketable surplus. While the new agricultural policies have legitimized the role of the private sector in grain marketing, it is not clear how the government intends to support the floor price for grains.

The privatization of the rice trade appears to be moving ahead at a somewhat slower pace than planned. The government has implemented its policy of reducing fertilizer subsidies from 71 percent in 1982/83 to 23 percent in 1985/86. Fertilizer use has also declined during the period.

A key issue will be the funding of irrigated land development in connection with the Diama and Manantali dams on the Senegal River. The Diama dam was completed last year, while the larger Manantali dam (in Mali) is due to start operations by the end of 1988. Some 300,000 hectares of irrigated land, which the government hopes to use in the long term for rice production, will eventually be created. But the cost is conservatively estimated at $2 billion. Thus, emphasis is being placed on developing small plots in the short term.

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SEYCHELLES

David Skully

The Seychelles is a small island archipelago economy with a GDP of $170 million. Per capita GDP is over $2,400. The nation's greatest asset is its tropical location and relatively unspoiled natural beauty. Tourism is the most important component of GDP, employing a third of the labor force and accounting for most foreign exchange earnings. Fishing is an important source of income and employment, while agriculture accounts for only 10 percent of

GDP and 17 percent of employment. The agricultural sector is dualistic: there are about 75 large coconut-copra plantations, and several hundred small (less than 5 hectares) farms. Copra, a derivative of coconuts, is the primary commercial export. Almost all copra is sold to Pakistan. Cinnamon, vanilla, patchouil, dried fish, and guano are the other commodity exports.

The Seychelles gained independence from the U.K. in 1976. In 1977, France Albert Rene became president by coup d'etat. He is leader of the Seychelles people's progressive front, the single legal political party which styles itself as Indian Ocean socialist. There are at least two governments in exile and the president has been the target of several assassination and coup attempts. Rene has maintained power through a rather populist policy agenda, financed through external borrowing. Priorities, as expressed in the 1985-89 national development plan, include: diversification of the economy from fishing and copra, increasing employment, the further Seychellization of the economy, income equity through redistribution, economic integration of outlying islands, and cutting population growth.

The United States makes annual economic support fund contributions to the government and employs over 230 Seychellois and 80 U.S. citizens at a U.S. Air Force satellite tracking station on the main island of Mahe. The U.S. aid agency has programs in the country and surplus U.S. nonfat dried milk are shipped via Catholic Relief Service. Most agricultural imports are from South Africa, New Zealand, India, Thailand, and Australia. The Seychelles has little potential as a market for U.S. agricultural exports.

In the late 1970's, Rene's Indian Ocean socialism was fairly laissez-faire. However, as the world recession curtailed tourist revenues in the 1980s, the government became much more interventionist. Controls were gradually placed on commercial trade. In 1984, the Seychelles marketing board (SMB) was established as the only marketer of agricultural products. Created to guarantee stable prices to both producers and consumers, it has functioned poorly, with many shortages and delays. Some observers comment that farm returns are much lower after the board than before. Some state farms and cooperatives have been established and the United Nations Development Program and Food and Agriculture Organization have initiated several projects in both agriculture and fishing. A "food law" based on a model FAO food law was proposed in 1986, but it has yet to be passed. Agricultural policy as expressed in the 1985-89 national development plan will be implemented through the SMB.

Creation of SMB necessitated control of imports by the department of finance to protect its monopoly position. Imports of most agricultural commodities and products require a license from the Seychelles licensing authority as well as one from the department of finance specifying the import price, quantity, and supplier. Licenses are good for only 1 week. The following commodities are explicitly controlled: rice, sugar, flour (the Seychelles has no milling capacity), vegetable oils, margarine, milk, poultry meat, baby chicks, pork and pork products, canned meats, fresh fruits and vegetables and their juices, beverages, and animal feeds. About half of all other merchandise product categories have duties. The average duty is 50 percent.

Based on the performance of the last decade, the trend in the Seychelles is toward further regulation of the agricultural economy by the SMB. SMB activities are reported to have stirred the opposition of farmers. It is possible that agricultural development is more hindered than helped by the present policy mix. As long as Rene remains in power, the present trend is likely to continue. Donor agencies are eager to send aid missions to the Seychelles and the abundant flow of grants, loans, and projects is likely to keep the nation liquid for at least another decade before it becomes externally insolvent.

SIERRA LEONE

Arthur J. Dommen

Sierra Leone's main agricultural policy problem is to feed a rapidly growing population with rice at an affordable price. In 1986, the government embarked on a major investment program in the agricultural sector aimed at increasing domestic rice production and reducing reliance on rice imports. Rice prices have been going up. To cushion the effect of this rise on urban consumers, the government has granted significant wage and salary increases. These have, however, exacerbated inflation. Food constitutes 41 percent of the cost-of-living index of urban consumers.

Agriculture contributes about 35 percent of GDP and employs about 65 percent of the labor force. Besides rice, major crops are corn, cassava, bananas, and peanuts. Agricultural exports (cocoa, coffee, palm kernels, ginger) constitute 25 percent of foreign exchange earnings. A recent estimate of population growth rate was 2.76 percent per year. Sierra Leone has a presidential form of government and has been politically stable since independence from Britain.

Sierra Leone's per capita GDP fell from $389 in 1980 to $102 in 1986. Over the past 5 years, the budget deficit has grown dramatically as government expenditures increased despite diminishing revenues. These growing expenditures were primarily the result of the government's reluctance to cut subsidies on rice and other staples and to curb personnel costs. Although total outstanding debt has declined in recent years, the ratio of debt service to exports has increased to 15 percent.

Agriculture, including forestry and fishing, is Sierra Leone's most important economic sector and comprises about a third of GDP. Over 80 percent of the farmers grow rice, which supplies more than 50 percent of calories in the average diet. Rice production currently averages about half a million tons per year, compared with rice imports averaging about 90,000 tons per year. The government doubled the official price of rice on August 1, 1986, to LE 170 per 50 kg. bag. But, even with this increase, the government subsidy still amounts to LE 70 per bag. The rice import trade and rice marketing were privatized at the beginning of 1987. Crops grown for export include coffee, cocoa, and palm kernels.

The ambitious investment program in the agricultural sector is outlined in a 145-page document in which the preamble states: "Raising the output of the [agricultural] sector to sustainable economic levels will increase foreign exchange earnings, while increased production of rice in particular will be import-saving. In addition, not only will the nation be self-sufficient in food and other agricultural production, but a firm basis for economic recovery will have been established."

In June 1986, the government announced agreement with the International Monetary Fund on a structural adjustment program aimed at restoring the economy to better health. The program included elimination of price subsidies on rice, gasoline, and electricity; a float of the leone; abolition of overseas foreign exchange retention facilities previously granted to major exporters; and the lifting of price controls. The government has recently moved to tighten control over the lucrative diamond and gold export trade.

The program calls for mobilizing resources to give assistance to the individual family farm aimed at improving cultivating methods, yields, and output. The program speaks of a massive extension effort backed by supplies of inputs like fertilizers, pesticides, and improved seeds. Much greater reliance will also be placed on mechanized production. Also, special arrangements for producer credit, marketing, and incentive prices for farmers are envisaged. The entire program, however, depends heavily on procuring the necessary financial support from foreign aid institutions.

The adjustment program resulted in a modest improvement in the foreign exchange situation, reconciling the official exchange rate with the black market rate and allowing the government to pay off its arrears to the IMF. According to one estimate, official foreign exchange transactions increased from U.S.$100,000 per month to U.S.$2.6 million per month following the float. Sierra Leone's experience with development projects financed by overseas agencies has not been altogether happy. Actual expenditure in crop production in seven integrated agricultural development projects (IADP's) financed by the World Bank over the last 10 years, for instance, is estimated to have been barely 20 percent of the total project expenditure.

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SOMALIA

Brian C. D'Silva

Somalia is a country with a varied topography ranging from mountains to a coastal plain. As less than 15 percent of its land area is arable, the area planted to crops is small. Its major crops are bananas (for export), sorghum, maize, sesame, sugarcane, and rice. In the early 1980's, Somalia's macroeconomic picture deteriorated due to a decline in exports, increased domestic inflation, and budgetary deficits. To improve the economy, donors initiated stabilization programs to focus on the macroeconomy and the agricultural sector. Among the most important reforms were liberalizing the marketing of crops and livestock and changes in the exchange rate.

Somalia's per capita GNP was $270 in 1985. Nearly 50 percent of the population are nomads who raise livestock, while another 25 percent are farmers. Over 40 percent of the country's GDP and 80 percent of foreign exchange earnings come from livestock.

Somalia is a combination of former Italian and British colonies which became independent in 1960. After 9 years of parliamentary democracy, a military coup took place in 1969. The ruler today is the leader of that coup. The military government initially adhered to a pro-Soviet foreign policy and expanded the role of the government in the economy. However, in the late 1970's, Somalia made a turnabout in its foreign policy by taking a pro-Western stance and initiated domestic reforms to liberalize the economy. Due to armed conflict with Ethiopia which began in 1977, Somalia has a large refugee population. A major reason for superpower interest in Somalia is geopolitical and lies in the location of the country on the Horn of Africa which controls access to the Gulf of Aden and the Red Sea.

As Somalia has a varied topography, including two major rivers and a long coastline, sedentary farming (mostly through irrigation) is practiced along the banks of the rivers while fishing is done along the coast. Agricultural policies in Somalia have undergone major changes as a result of reorientation of the economy from one with government regulation and monopoly to that of adopting market-oriented policies, especially in price determination and marketing.

Policy Goals and Agricultural Programs

After the 1969 revolution, the government embarked on a policy of socialization of the economy. But the deterioration of the economy in the 1970's, albeit compounded by the effect of a drought and a war with Ethiopia, led to a rethinking of economic and foreign policies. In 1981, at the behest of donors and with a new pro-Western foreign policy, Somalia embarked on a series of policy reforms designed to move the country toward a market-oriented economy. To this effect, Somalia and the International Monetary Fund negotiated a stabilization program. The objectives of this program were to reduce inflation, increase export earnings, provide incentives for increasing domestic agricultural production, and reduce the role of parastatals in the economy.

Somalia has undertaken numerous policy reforms in the last 5 years. Prior to 1982, the agricultural development corporation was the sole purchaser of grains at a price which it set. This price was usually below market. In 1982, the corporation's monopsony power was removed and agricultural prices are now determined by the market. A similar change took place in the livestock sector where, prior to 1981, the livestock development agency was responsible for buying, selling, marketing, and controlling exports. It was abolished in 1981.

Fertilizer imports are still under government control but its effect is minimal. Subsidies on petroleum which indirectly affect agriculture were removed in 1985 and 1986.

Export taxes for livestock are determined by the minimum export price. These were reduced in 1984 to stimulate livestock exports. Actual prices are higher, but the minimum price determines export taxes and the amount of foreign exchange that needs to be transferred through official, legal channels.

All controls on the retail price of food were eliminated in 1985, while controls on the wholesale prices of grains were eliminated when the agricultural development corporation's monopsony power was abolished. The government also now allows private food imports formerly a function of a government parastatal.

Somalia has made many changes in its exchange rate system in recent years. From mid-1981 to mid-1982, Somalia had a dual exchange rate system before it was abolished. In January 1985, Somalia instituted another multiple exchange rate system: an official rate, a commercial rate, and a free market rate. The former two are overvalued. In October 1986, Somalia unified the official and commercial bank rates. All private sector transactions including imports are now at the free market rate. For exports, 50 percent of the value is converted at the official rate and 50 percent at the free market rate. As Somalia is regularly aligning its currency, the ratio of the official rate to the free market rate has increased from 0.4 in January 1985 to 0.62 in October 1986, reflecting a move closer toward alignment between the two rates.

Agricultural Program Evaluation

The policy reforms initiated by the government in the agricultural sector have met with mixed results, primarily due to the deterioration in the macroeconomy and difficulties that the government has had in controlling its budgetary deficit. A major problem with the deficit is the low ratio of taxes to GDP and the dependency of the government on meeting its budgetary commitments through grant funding and increases in the money supply. The deficit was 70 percent of expenditures and 11 percent of GDP in 1985, compared with 36 percent and 6 percent in 1983. As a result, inflation in the urban areas has been averaging nearly 40 percent on an annual basis in the last few years.

But, while the macroeconomy has deteriorated, agricultural policy reforms have had an effect. The removal of the agricultural development corporation's monopsony control resulted in an increase in maize and sorghum prices since the free market prices were higher than the corporation-controlled price. Changes in the exchange rate and pricing of livestock exports has encouraged livestock exports. They were at an all-time low in 1986 due to a Saudi ban on Somalia livestock. In 1985, a sharp recovery took place as other markets in the Middle East opened up. The removal of the monopoly power of the livestock development agency encouraged private sector trade in livestock marketing. Growth in crop production, especially of maize, sorghum, and bananas averaged over 5 percent in recent years. These are the result of improved financial incentives to producers, improved weather, and improved seed. While no major irrigation development has taken place, plans are underway to expand irrigation area by constructing dams on the major rivers. This is seen in the planned allocation for crop production under the 3-year public investment program which has the largest share in the agricultural sector investments.

SOUTH AFRICA

Lawrence A. Witucki

South Africa has a well-developed, diversified agriculture which produces a wide range of livestock and horticultural products. The country is also a major corn producer and exporter. Despite a relatively strong production record, agriculture's share of the GDP has been declining, while the mining sector has grown. The economy, facing both domestic and international shocks, has stagnated since 1981. The government puts high priority on stimulating economic growth in hopes of reducing black unemployment and labor unrest and muting calls for increased international sanctions.

Food self-sufficiency remains an agricultural policy goal and implies providing adequate production incentives to farmers while avoiding costly surpluses. The government intervenes heavily in agriculture, usually to stabilize or support prices. Subsidies are provided for credit and for marketing, including infrastructure. Some sectors of South Africa's agriculture have become high-cost operations, plagued by high levels of farm debt and rising government program outlays.

South Africa is a major agricultural exporter, with exports accounting for 40 percent of agricultural GDP. Its agricultural exports are corn and products, fruits and products, wool, sugar, hides and skins, and mohair. South Africa regularly imports wheat and rice and has experienced very significant increases in cereal imports during drought. The United States has periodically been an important supplier of South Africa's agricultural imports. U.S.-South African trade was curtailed by trade sanctions in late 1986.

The Economy

South Africa's real GDP fell by 1 percent between 1981 and 1984. The mining sector has been strong, accounting for 16 percent of GDP in 1985. But, manufacturing has lagged, with its share of GDP falling to 22 percent in 1985, about the same as in the early 1970's.

The government has been controlled by the national party for nearly 40 years. Elections are held periodically, but blacks are excluded from participation in parliament and provincial politics. The country's stability was impaired by racial violence in 1985 and 1986. Subsequent emergency legislation has permitted the arrest and detention of large numbers of persons suspected of creating disorders.

Government intervention in the economy is pervasive. The money supply, foreign exchange flows and rates, investments, expenditures, and trade in key sectors are all subject to government control as are many prices and some wage rates. Intervention, frequently a vehicle for implementing apartheid, has created impediments to manpower and resource mobility and reduced economic efficiency.

The Agricultural Sector

Agriculture's share of the GDP has been decreasing steadily and was about 5 percent in the mid-1980's. Agriculture employs only 5.3 percent of the white labor force, but nearly 20 percent of the black labor force. In the independent black homelands, about 80 percent of the population is rural.

South Africa is generally a significant corn exporter, although it imported corn because of serious drought in the mid-1980's. Japan, Taiwan, and other Asian countries are major markets. South Africa's producer prices for corn are generally higher than world market prices, and exports entail losses. Domestic consumer prices of corn have been increased sharply in order to reduce subsidy expenditures. Higher prices, coupled with weak growth in corn, reduced consumption. With domestic use constrained, the export market became more important in pricing considerations.

Wheat production is also subject to weather variability and imports have exceeded exports in most years, varying from 50,000 to 300,000 tons. Less than 20 percent of the crop is irrigated and restrictions on supplies of irrigation water have resulted in reduced area in recent years. Area could be switched from corn to wheat given the poor outlook for corn prices in the export market.

South Africa is a significant exporter of fruit, sugar, and livestock products, including wool, hides and skins, mohair, and karakul pelts. Since 1980, most agricultural exports have been boosted by the decline in the value of the rand.

Policy Goals

Agricultural policy goals have been more difficult to clarify since (1) the droughts of 1983 and 1984 and the resulting costs, (2) the beginning of the increased violence and associated emergencies in 1985, and (3) the extended slowdown in economic growth. Food self-sufficiency, a longstanding goal, has become more important given threats of and actual trade sanctions against the country. Providing stable, guaranteed prices and adequate marketing infrastructure to support price policy have been major policy objectives. Well-organized, politically influential commercial farmers are a major force supporting this policy thrust.

Agricultural Programs

More than 20 government commodity boards intervene in various degrees to stabilize and support prices. Credit on favorable terms to the boards and producer cooperatives has financed investment in infrastructure construction, including large investments in storage facilities which have insured steady supplies of corn and led to the rapid expansion of livestock feeding.

World market prices are considered in price setting, but often domestic prices are not in line with external prices. When domestic corn prices in some recent years moved sharply ahead of world market prices, consideration was given to increased market orientation in domestic pricing. The current goal is to reduce corn production to levels which can more readily clear the market. But, subsidies to the agricultural sector continue.

Private ownership of farms is preferred and policies favor an increase in the size of farms considered uneconomic. Mechanization has been encouraged with credit assistance and diesel fuel subsidies.

Farm financial stress and rising program costs have become serious concerns for the government. Given the large expansion of farmer debts triggered by the drought--estimated in excess of R12.5 billion in 1986--government subsidies for interest costs rose to R221 million during FY 1985/86. While some subsidy programs have been curtailed (that is, the subsidy for emergency feed and grazing, the rebate on transport of feed, livestock, and fertilizers, and the fertilizer subsidy), additional funds were allocated for the restructuring of agriculture.

Agricultural Program Evaluation

Evaluation of South Africa's programs is complicated by the racial issue, as well as by the severe droughts of 1983 and 1984. Agricultural growth slowed in the early 1980's, and farmers face increasingly difficult financial conditions. Farm debt--particularly for field crop farmers--rose 131 percent between 1981 and 1985, while the gross value of field crops increased only 32 percent. Debt servicing takes the largest share of producer expenditure. The terms of trade have moved against agriculture, especially since 1982.

Agricultural programs contributed to development of a relatively high-cost field crop sector, as crops, such as corn and wheat in particular, were insulated from world market forces. To help meet high producer costs, the government has sharply increased consumer prices. In 1986, food prices rose by 21 percent, more than the CPI.

Income distribution in agriculture is severely distorted. Six percent of the farmers own more than 50 percent of farm resources. They are not necessarily more efficient, as they produce only 40 percent of the agricultural product, converting small units into larger, viable farms. But, the problem of excessively large landownership has not been addressed.

Poorly developed agriculture contributes to poverty and malnutrition in the black homelands. When drought and negative economic growth are combined, malnutrition rises and becomes a direct cause of death among children, as was the case in 1983. While malnutrition among whites is very low, a third of the black children under 14 years are chronically malnourished.

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SUDAN

Brian D'Silva

Sudan, the largest country in Africa, has long been viewed as the breadbasket of the Middle East. Sudan produces both cash and food crops. Among its major exports are cotton, groundnuts, sesame, gum arabic, sorghum, and livestock. Among its major trading partners are countries in the Middle East, East and West Europe, and the Far East. Despite its very large irrigated area, production variability characterizes the country's output. With agricultural exports as major foreign exchange earners, exchange rate and trade policies have a major effect on the agricultural sector. Other policies important to the agricultural sector include fixed producer prices for certain crops and consumer subsidies for bread and sugar.

The Economy

Sudan is a former colony of Great Britain. Soon after independence in 1956, Sudan was embroiled in a civil war which lasted until 1972, pitting north against south. Another civil war started in 1983 and continues. These wars have slowed economic and agricultural development, especially in the south. While the country initially started out under democratic institutions, it has recently been ruled by military regimes, especially from 1969 to 1986, when a new democratically elected government took power. As the economy is dominated by agriculture, the government's role varies by subsector. Government regulation in the rainfed subsector is minimal. There is greater government domination of the irrigated subsector which is oriented primarily toward the production of cotton. The government subsidizes commodities such as bread, sugar, and petroleum products. There has been a recent movement toward reducing these subsidies, at the behest of donors. Government spending policies in the 1970's led to an accumulation of external debt of over $9 billion. In recent years, the country has been unable to service this debt and debt management has become a major policy issue. As the country is trade dependent, its exchange rate and trade policies also affect the country's agricultural sector. Hence, exchange rate reform is also an important policy issue.

The Agricultural Sector

Agriculture contributes over 45 percent of the country's GDP and over 40 percent of the country's employment. The agricultural sector consists of three subsectors, each producing both food and export crops. The irrigated subsector produces cotton, groundnuts, sorghum, and wheat. The mechanized rainfed subsector produces sesame and sorghum and has seen increases in both area and productivity in recent years. The traditional rainfed subsector produces sorghum, millet, sesame, groundnuts, and gum arabic. Most of the country's livestock is in the traditional rainfed subsector.

The source of export earnings has varied from 1975-85, primarily due to low productivity in the irrigated subsector and a 3-year drought which affected rainfed areas. The mid-1980's saw new developments in the agricultural sector which include new varieties of cotton in irrigated areas and hybrid sorghum in rainfed areas.

Policy Goals

Sudan's policymakers face the task of increasing agricultural production, raising exports, reducing debt servicing, and increasing government revenues. Hence, supply side issues dominate the agricultural policy area. Among them are: (1) unification of exchange rates at least with regard to export crops and transmitting of world prices to farms, (2) institutional change in the irrigated subsector so that cropping patterns can adjust to world prices, (3) reduction in operating costs and budgetary subsidies for the agricultural parastatals which are in the irrigated subsector, and (4) encouraging private sector involvement in exports of crops like gum arabic.

The broad policy goals concerning agriculture are achieving food self-sufficiency and maximizing foreign exchange earnings. With the exception of wheat, the country produces enough food grains for local consumption and for export. Investment in the agricultural sector has been primarily in the irrigated subsector and this has been public sector investment. In the mechanized rainfed subsector, investment has been primarily through private capital, especially from other Middle Eastern countries such as Saudi Arabia. Private capital investment in the agricultural sector has been encouraged by the government, both in direct production and processing. Due to the large external debt and the effects of policies initiated in the 1970's, the country has embarked on a series of policy reforms. These reforms included exchange rate changes, increases in the producer prices of cotton, groundnuts, sesame and gum arabic, reduction in bread and sugar subsidies, and removal of the subsidies on petroleum products. In addition, the government has been encouraged by donors to initiate measures to control its budgetary deficit which has been increasing due to the drought and the civil war.

Of the three subsectors, the irrigated one has the most government intervention. This includes mandated cropping patterns, setting of producer and input prices, provision of specific services like irrigation water, and land preparation and fertilizer. In 1981, some institutional changes were introduced for the irrigated subsector which focused on land and water pricing and output price incentives. These changes resulted in improved productivity in the irrigated subsector.

Agricultural Programs

The range of agricultural programs varies by subsector and by crop. In the traditional rainfed subsector, floor prices exist for groundnuts and sesame, but auction market prices are usually higher than the floor prices. Market determined prices exist for sorghum and millet which are primarily food crops for the subsector. Prices for gum arabic are set by the government, as gum arabic trade is controlled by the government's gum arabic company. Sudan is the world's largest exporter of gum arabic and supplies over 70 percent of world demand. Producer price incentives are a major issue for gum arabic pricing. Due to disincentives, producers curtailed production which affected both ability of the government to generate tax revenues and foreign export earnings. The government recently increased the export price and hence indirectly improved producer incentives.

Sorghum produced in the mechanized rainfed subsector is primarily for urban consumption and exports. Exports were banned in 1985 and most of 1986 because of the drought. Encouragement of private Middle Eastern capital has led to major increases in area cultivated and production in this subsector. The government subsidizes the cost of production through low land rents and diesel fuel prices.

Irrigated cotton production is encouraged through fixed cropping patterns, provision of imported inputs and mechanical operations, and fixing of producer prices. Wheat producer prices in the irrigated subsector are determined on the basis of import parity. As the country is a net importer of wheat, the consumer price of bread is an important policy issue. A subsidy exists for bread to placate urban interests. Wheat imports have increased by over 200 percent in the last 7 years. Cotton output and exports declined in the latter half of the 1970's with the deterioration of the irrigated infrastructure, price disincentives, and white fly infestation. The decline has been reversed through institutional change, improved prices, and a new cotton variety resistant to white fly. A new improved sorghum hybrid has been introduced in the irrigated subsector with yield increases of over 200 percent. Hence, a reorientation of cropping patterns will probably take place. Government's role in this sector is unlikely to diminish, although efforts are being made to improve the financial viability of the parastatals that produce cotton.

Exchange rate policies have a major effect on producer incentives for all three subsectors. Sudan's exchange rate policy has been continually changing with multiple exchange rates in effect at any one time. Agricultural inputs are valued at one rate, while cotton and gum arabic exports are valued at a second. Other exports are valued at a third rate, while remittances are valued at a fourth rate. These exchange rates, when transmitted to the farm level give differential incentives, not only across crops but also across subsectors. Unification of exchange rates has been a major policy reform encouraged by donors. But, while there have been periodic devaluations during the last 5 years, they have not been across the board, but crop specific. Despite these devaluations, producer incentives have not significantly improved due to high inflation which has increased production costs.

Agricultural Program Evaluation

In early 1987, Sudan devalued the exchange rate for selected export crops by nearly 35 percent, but left other exchange rates unchanged. Hence, the problem of multiple exchange rates still exists and the effects of inflation of the past 2 years have not been negated. As surpluses of both cereals and oilseeds accumulate, pressures increase for raising exports, as the costs of building stocks add pressure to the government budget deficit.

Sudan's recovery from drought has been dramatic. But, for agriculture to make an immediate contribution to the country's foreign exchange earnings, exchange rate changes are essential. The recently released 1-year "economic salvation plan" of the government recognizes this fact.

The present system of fixed cropping patterns in the irrigated subsector does not allow the producer freedom in decisionmaking and prices do not influence resource allocation. Exchange rate flexibility combined with other institutional changes would be needed to transmit world prices as producer incentives. These changes would also affect the financial viability of the irrigated subsector parastatals if they are to cease to be a drain on the treasury.

The government is involved in cotton and gum arabic marketing. While it may be politically difficult for the government to reduce its role in the marketing of cotton, it could limit its role in gum arabic procurement and marketing. Present policy suggests that control of the gum arabic marketing company leads to a source of tax revenues for the country. Reforms in gum arabic marketing could lead to increased export sales and foreign exchange earnings and help alleviate the debt repayment crisis.

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SWAZILAND

Carl C. Mabbs-Zeno

Swaziland is a net importer of its major food, corn, but nearly 90 percent of its exports are agricultural products, led by sugar. South Africa completely dominates trade with Swaziland, in addition to providing opportunities for wage earning. Thus, the performance of Swazi agriculture is closely linked to the South African economy and policy. Swazi agriculture is separated into a traditional sector, growing mainly food crops, and a capitalist sector, growing export crops. Government policy has long been directed toward improving productivity in the traditional sector, including expansion of export crops into that sector.

Swaziland achieved independence from Britain in 1968, establishing a parliament and a prime minister, but political power remains concentrated in the royal family. Nearly 90 percent of exports and over 25 percent of GDP come from agriculture and forestry.

Agriculture is strongly dualistic with a capitalist sector receiving laissez faire treatment and a traditional sector administered mainly through the chieftanship. About 40 percent of the land area is title deed land, incorporating the capitalist agriculture, while the remainder of the area is termed Swazi nation land. The capitalist sector exports sugar, citrus, canned fruit, and forestry products. The traditional sector is based on corn production although the nation is a net importer of grains. The sugar industry and South African mining each account for about 20 percent of private wage employment. South Africa supplies over 75 percent of imports and receives over 30 percent of exports.

The principal agricultural goal of the government is improving productivity on Swazi nation land through both food and cash cropping. The Swazi people generally expect that the land area in communal or state control will continue to increase. Of these two, only the productivity objective seems consistent with the government's general plan to seek food self-sufficiency. There is no plan for change within the capitalist sector to serve these goals. As a member of the Southern Africa Development Coordination Conference, Swaziland is also committed to diversification of its trading partners, specifically to reducing the South African proportion of its trade.

The primary policy instrument for raising productivity is the rural development areas programme (RDAP) which began in 1970 and reached more than half of the Swazi nation land by 1983. This program supplies basic rural infrastructure, loans, and agricultural inputs within selected regions. Two forms of RDAP are used. The more recent expansions employ a version which provides less intensive assistance. Rural development also relies on an extension service and on cropping systems research which are heavily supported by U.S. aid.

Since early in this century, the colonial and, later, national governments have tried to increase the proportion of land legally controlled by Swazi citizens. In recent years, land has been purchased from willing expatriate farmers at market prices using a fund supported by Britain. Past purchases were often converted to control by the chieftanship, but since 1984 the ministry of agriculture has retained control of all additions to Swazi nation land, generally using it for research and other state farms.

International trade policy since 1974 has been governed by membership in the South African Customs Union along with Botswana, Lesotho, and South Africa. Under the terms of this arrangement, duties on goods from outside the Customs Union are generally set and collected by South Africa and then transferred to Swaziland after the goods are transshipped. Until July 1986, the South African rand was legal tender in Swaziland. Today the Swazi currency, the lilangeni, remains exactly equal in value to the rand. But, Swaziland is considering an independent currency as the rand retains its low value on world markets.

Improvements in GDP since 1970 have been associated with wage employment rather than with agriculture on Swazi nation land. Political support for RDAP has declined because it failed to generate sufficient improvements to justify its large cost. Improved corn seed did bring early increases in productivity, and many farmers in the intensive RDAP's benefited greatly. But, it is widely recognized that 15 years of the program have not demonstrated how to control overgrazing or how to raise national food production at an acceptable cost. Recent initiatives to attract farmers on Swazi nation land into commercial production have been ineffective largely because they cannot promise better returns to labor than are available through existing wage alternatives.

The conversion of land from freehold to state control has slowed due to shortage of funding for purchases. But, in addition, the conversion has slowed due to loss of faith that such conversion is in the best interests of Swaziland. The government fears that traditional land use tends to be less productive, so it retains control of new purchases while it searches for an improved use which involves Swazi farmers.

Attempts to reduce dependence on South Africa have shown no progress. The major constraint to developing other trading partners is the guerrilla activity which limits use of the nearest port, Maputo in Mozambique. With no sea border and only Mozambique and South Africa as neighbors, Swaziland can do little to promote economic independence without South African cooperation.

TANZANIA

Lawrence A. Witucki

Tanzania faces a tremendous challenge in rehabilitating its agricultural exports and recovering from prolonged economic stagnation. Per capita GDP declined significantly during the 1980's. The agricultural sector provides about 50 percent of GDP, employs 83 percent of the economically active population, and accounts for the bulk of the country's exports. While food production has increased, export crop production is about 10 percent below the 1976-78 base period.

Tanzania's commercial food imports are limited. U.S. agricultural exports to Tanzania consist mainly of food aid in grains and products, nonfat dry milk, and vegetable oil. The United States imports small quantities of coffee from Tanzania.

Poor policies and management, as well as external factors, have weakened the Tanzanian economy. GDP growth has been less than 3 percent a year in the 1980's, consistently below the population growth rate of 3.3 percent. While agriculture has continued to grow slowly during the 1980's, the manufacturing sector has declined steadily to only 5 percent of the GDP. External economic shocks and the effects of drought were exacerbated by economic policies which discouraged export performance while failing to create viable import substituting industries. Both the volume and value of exports declined steadily after 1981. Lower foreign exchange earnings have led to reduced imports of intermediate inputs and spare parts. The infrastructure required to maintain a modern cash economy deteriorated.

The government is dominated by a powerful single party, chaired by Julius Nyerere, the nation's first president at independence in 1964. Nyerere emphasized socialism and the public sector. Since late 1985, the presidency has been held by Ali Hassan Mwinyi, who has undertaken more pragmatic economic policies.

Corn, rice, sorghum, and millet are the major cereals. Corn and cassava are the major sources of calories. Potatoes and bananas are also important food crops. Cash and export crops include coffee, tea, sisal, cashew nuts, cotton, tobacco, pyrethrum, and sugarcane.

Agriculture accounts for about three-fourths of Tanzania's export earnings. Total exports fell each year between 1981 and 1985. Agricultural exports dropped also but less than total exports.

A government parastatal, the national milling corporation (NMC), is responsible for domestic cereal marketing. Official marketing has been inhibited by infrastructural weaknesses, poor administration, lack of funds, and, until recently, official prices substantially below parallel market prices.

Policy Goals and Agricultural Programs

Economic policy has been heavily based on the 1967 Arusha Declaration with its emphasis on socialism and self-reliance. The public sector has played a leading role. Only since Ali Hassan Mwinyi became president has a significant relaxation of state control over the economy been considered. The negotiation of an International Monetary Fund standby arrangement in 1986 (the first since 1980) marked a shift in economic policies. The government has formally agreed to currency devaluations, more free market pricing, privatizing some parastatals, and phasing out subsidies to state corporations.

Agricultural policy in the 1970's was dominated by a commitment to restructure rural areas by grouping scattered farmers into villages, often with an emphasis on collective agriculture, and creating parastatal marketing agencies to replace producer cooperatives. Food self-sufficiency became a major policy objective in the mid-1970's, pursued mainly by increasing official producer prices for food crops relative to export crop prices.

A more recent goal of agricultural policy is the liberalization of agricultural marketing. Larger amounts of grain can be moved between districts without permits. Cooperatives have been reestablished and relations between them and parastatal boards are being defined. The NMC is to reduce its role as a primary buyer of grains. Its price for corn is now to be considered a floor price. The NMC's trading prices are to be set to avoid the need for subsidies.

Incentives for export crop production are to be strengthened as part of the economic recovery program, which is supported by the IMF. Agriculture has the central role in reaching the goals of the program.

Tanzanian agricultural programs were characterized until recently by tight controls over pricing and marketing. Official producer prices were established for major food crops, as well as for export crops. Consumer prices were subsidized, frequently through the losses incurred by the marketing boards. Export crops were taxed until June 1985. Maintaining an overvalued currency exchange rate made it more difficult to offer farmers attractive prices for export crops, particularly since domestic inflation has been high.

Tanzania has recently given consideration to unofficial domestic prices in settling producer prices. After sharp increases in producer corn prices during 1983, 1984, and 1985, official and unofficial prices were not much different and official marketings of corn finally increased significantly during 1985.

Agricultural Program Evaluation

The effects of agricultural policies carried out from the late 1960's until the mid-1980's contributed to the generally weak performance of the Tanzanian economy and agricultural sector. The output of the cash/export crop sector has been poor since the early 1970's and shows little, if any, improvement. Food crop production, however, has increased in recent years and has held steady on a per capita basis. Weak growth of most sectors of the economy have made growth and development of commercial agriculture very difficult, as the infrastructure required has deteriorated. Industry is operating at less than 30 percent of capacity.

Government's pricing and exchange rate policies and its widespread use of parastatals to service the agricultural sector have severely hindered export agriculture. Political leaders were not attuned to the needs of commercial export agriculture but were influenced by ideology. Equal distribution and social welfare were priorities. But, in the process, urban consumption came to be heavily subsidized by the public budget until in the early 1980's when these subsidies were sharply cut or eliminated. In the mid-1980's, the terms of trade began to favor agriculture, and food supplies increased.

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TOGO

Margaret Missiaen

General Eyadema has ruled Togo with military support since January 1967. He was confirmed as president in a referendum in 1979. Togo maintains close ties to France, the former colonial power. Agriculture accounts for a fourth of GDP and employs over 60 percent of the labor force. Per capita GDP is about $250. Togo has an important commercial sector which depends on developments in neighboring and world commodity markets. The commodity boom in the mid-1970's led authorities to embark on large investments in infrastructure and expand the numbers and functions of government agencies and state enterprises. As a result of declining world prices, budget deficits increased and Togo's external debt rose to 120 percent of GDP in 1983.

Togo's major export is phosphate rock, which accounts for a third of foreign exchange earnings. Coffee, cocoa, and cotton are the main agricultural exports, providing a fifth of export revenue. Re-exports of imported consumer goods to neighboring countries account for about a fourth of the total. About 30 percent of total imports are agricultural goods. The major food import is grain, mostly wheat and rice.

The major aims of the current agricultural policy are continued food self-sufficiency and agricultural diversification and modernization. The government is progressively reducing its role in agricultural production.

TOGOGRAIN, a state-owned agency, was originally established to promote grain production by indirectly guaranteeing producer prices. But, it has, from time to time, also assumed the function of supplying inexpensive food to urban areas. TOGOGRAIN activities were to cover corn, sorghum, millet, and rice, although it has chiefly purchased and stored corn. Because of poor buying strategies and inadequate storage facilities, TOGOGRAIN operated at a loss in recent years. As part of the structural adjustment program, market intervention by TOGOGRAIN is being reduced to maintenance of a limited security stock. The government is taking measures to allow for greater private sector participation in the domestic marketing and export of cereals.

Other actions taken since 1984 to implement agricultural policies include: (1) increasing producer prices for major cash crops, (2) promoting food crop exports by granting export permits when a surplus exists, (3) auditing the state marketing agency, Office des Produits Agricoles du Togo (OPAT), and (4) expanding extension services and availability of inputs.

OPAT is responsible for the marketing of export crops. Producer prices of the principal cash crops are determined annually by a government commission on the basis of recommendations from OPAT. Real producer prices for cash crops have increased substantially during the last 3 years. OPAT's gross profits also increased until 1985/86 when falling commodity prices reduced receipts. Since OPAT marketing is divided among three main crops--coffee, cocoa, and cotton--price movements tend to be offsetting, putting OPAT in a stronger position than export agencies which market a single crop. OPAT's prices are often higher than those of neighboring countries which encourages sales in Togo.

Real GDP has expanded at an average annual rate of 3 percent during the last 3 years. Togo's external financial position has strengthened. Despite economic improvement, the government continues to pursue austerity policies with support from the World Bank, International Monetary Fund, and other donors. The sale or closure of unprofitable state-owned enterprises has led to some stabilization of the country's financial position.

The reduced government role in the production and marketing of food crops will allow the private sector more freedom in this area. Private traders have always controlled most food marketing in Togo, but government regulations often impeded their operations. The lifting of restrictions on food exports will make little difference, since the government was not able to control exports when shortages existed in neighboring countries. There is little demand for Togo's food exports since most West African countries have adequate supplies of the crops produced in Togo. Togolese commercial activity is directly related to the state of Nigeria's economy. The closing of Nigeria's borders from 1984 to 1986 caused a considerable decline in business for Togo's traders.

OPAT cannot continue to raise producer prices of export commodities while world prices are declining. The fall in the value of the dollar has also reduced local currency revenue for Togo's exports. In the past, profits from OPAT's operations were used for general budgetary support. However, the current outlook is for much lower earnings.

UGANDA

Lawrence A. Witucki

Uganda has one of the better natural resource bases for agriculture in Africa, but its infrastructure is very weak. Subsistence agriculture accounts for 60 percent of the agricultural GDP and agriculture makes up 57 percent of total GDP. Manufacturing remains highly dependent on agricultural raw materials and over 90 percent of the population directly depends on agriculture. The government has placed priority on agricultural rehabilitation, transportation, and energy, including a comprehensive coffee program, a cotton project, and encouragement of increased investment in tea and sugar. Parastatals play an important role in the economy including that of coffee marketing. But, the parastatal role is weak in food crop pricing and marketing.

Agricultural exports are virtually Uganda's only foreign exchange earner. Coffee provides slightly over 90 percent. In most years, the country is nearly self-sufficient in food; agricultural imports including food aid are modest. U.S. agricultural exports to Uganda are therefore very small, determined largely by food aid needs for wheat, rice, vegetable oils, and nonfat dry milk. U.S. agricultural imports from Uganda are almost all coffee.

Uganda's economy is heavily based on agriculture. Economic growth was negative from 1974-80, but grew rapidly from 1981-84 before slowing in 1985 as civil disturbances increased. Per capita GNP is $250. Since the early 1970's, Uganda has had generally unstable military governments. Stability increased during 1986, under the Museveni government, which seems to be aiming for a mixed economy with both public and private participation.

With European Community led assistance, the coffee rehabilitation program, which provided inputs for production, research, and training, saw several coffee factories rehabilitated. Output has made a substantial recovery since the late 1970's compared with other cash crops of cotton, sugar, tea, and peanuts. Cotton and tea exports have shown some growth. Wheat and rice production and consumption remain low and some is imported. Millet, sorghum, root crops, plantains, and bananas are important food crops.

Policy Goals and Agricultural Programs

Policy goals have been shifting during the past 15 years and had little effect because of political instability. In the years following independence, export crop production and marketing developed well, making Uganda a leader in agricultural exports. Policy goals remain unsettled, including that involving debt and servicing. The government seeks more credit, more investment, and more barter trade in efforts to conserve foreign exchange.

Agricultural sector goals are currently given more thought as the security situation has improved. However, debate over self-sufficiency versus cash crop output could weaken the export sector. The parastatal sector is to be rationalized, with those more suited to private ownership and management to be sold.

Most large-scale processing and manufacturing is under parastatals, with small-scale activities mostly mixed public and private enterprises. Devaluation of the Uganda shilling began in 1981. A dual exchange rate, including auctioning of foreign exchange, operated for a number of years. The Museveni government tried a dual exchange system in 1986, but has since fixed the exchange rate and foreign exchange is allocated administratively. One goal of the fixed exchange rate was to provide for a regular supply of inputs to the agricultural and industrial sectors at relatively low prices.

From 1981-84 producer coffee prices were raised in real terms, but inflation has eroded increases. Producer cotton prices were also raised sharply and a rehabilitation of ginneries initiated. Tea output has been abeted by direct access to export markets and foreign exchange to import inputs.

Agricultural Program Evaluation

Agricultural programs instituted since 1980 have had some success in raising output of export and food crops. Yields are estimated to have increased slightly but use of modern inputs continues at a very low level. A large subsistence sector on a relatively good natural resource base allows most producers to obtain at least a minimum food supply. However, malnutrition continues to be widespread, with many unable to obtain some critical protein and vitamin/mineral nutrients. Urban workers, with no rural base for food supplies and wholly dependent on wages, have great difficulty in filling their needs. Widespread smuggling results. Even with increased food output, the transport system is so weak that areas far from the main producing areas require assistance in obtaining supplies.

Coffee output and exports have increased from the low levels of a decade ago, as producer prices increased in real terms until the inflation surge beginning in 1984. Still, producers receive a very low share of the export value of the coffee and smuggling continues. With coffee revenue critical, the government has no choice but to heavily tax coffee exports. The large inflow of coffee earnings requires exceptional management and cross-checks. Relatively favorable world coffee prices from 1984-86 made coffee even more dominant ir the economy. The cotton rehabilitation program has been much less successful than the coffee program. Ginn capacity remains inadequate and the cotton board has lacked the financial resources to rebuild the infrastructure. Corn and bean production has been increased sufficiently to export in moderate quantities. Barter arrangements are being sought to expand agricultural exports and save foreign exchange by obtaining oil imports through barter. Agricultural imports have been reduced from $451 million in 1980 to only $161 million in 1985.

Uganda has succeeded in increasing its agricultural production, especially food, since 1980. Monetary and foreign exchange policy problems continue to be intractable. The government is attempting to prevent merchants from profiteering on imported goods. While the agricultural trade balance has become quite favorable, the balance of payments situation continues very unfavorable.

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ZAIRE

Stacey Rosen

Coffee, cassava, corn, and palm oil are the most important crops in Zaire. Falling prices for primary exports, copper and coffee, have contributed to Zaire's weak economy. The mining sector dominates the economy, contributing 25 percent of GDP and 80 percent of export earnings. Agriculture accounts for 20 percent of GDP. Recent government policy has emphasized . all-scale investments in the private sector.

Zaire gained independence from Belgium in 1960. Its constitution establishes a strong presidential system. The legal system is based on Belgian civil law and tribal law. The economy was very weak in the early 1980's due in large part to a corrupt government, deteriorating terms of trade, and inappropriate policies. These factors contributed to the country's huge debt problem, over $5 billion in 1985. The debt service ratio is over 25 percent. Per capita GDP in 1985 was only $135. Zaire does have a trade surplus but falling export prices (copper and coffee) have reduced its size. Zaire has tremendous potential to expand its economy based on an abundance of natural resources. It is the world's largest producer of cobalt and a large producer of diamonds and copper.

Zaire's agricultural sector is hampered by the lack of new investment, inadequate pricing policies, poor weather, and a deteriorating transportation network. Recent policies have worked to eliminate some of these problems. The most important food crops are manioc, corn, and palm oil. Coffee is the primary agricultural export, accounting for 10 percent of total earnings. It is produced primarily by smallholders.

Policy reform begun in 1983 aimed at reducing internal and external imbalances of economic growth. To achieve these goals, the government liberalized the exchange rate and eliminated many domestic price controls. The 5-year economic and social development plan for 1986-90 aims for economic growth of 4 percent per year. This rate is essential if per capita incomes are to rise and if the capacity to repay debt is to increase. The plan emphasizes the rehabilitation and completion of existing projects. Private sector investment in import substitution and the export-oriented sectors is emphasized. Major targets for investment are transportation, mining, and agriculture.

The agricultural recovery program of 1983-85 had three objectives: attaining food self-sufficiency, providing inputs to agriculturally based industries, and sustaining production of export crops. In order to achieve these, the government emphasized small-scale agriculture, provided marketing and extension services, and worked toward rehabilitating the transportation network.

Results of the agricultural rehabilitation plan are evident. Production, agricultural inputs, marketing, pricing, transportation, and investment are almost entirely in private hands. This change was achieved through price liberalization, parastatal reorganization, privatization of marketing for agricultural inputs and output, and elimination of consumer subsidies for agricultural products. Agricultural output has expanded (coffee, palm oil, manioc, and corn). Price liberalization and exchange rate changes (the value of the domestic currency depreciated over 50 percent relative to the dollar in 1985) have resulted in increased production in recent years. However, food self-sufficiency has not been attained and considerable amounts of corn, rice, and wheat imports continue.

Improvements have not been sufficiently substantial. After concluding that improvements in the economy were marginal, the authorities rejected International Monetary Fund austerity measures and made their own policy changes in 1986. Capital expenditures and salaries were increased, debt service payments were reduced (as they were thought to be a drain on the economy), and interest rates were reduced. The World Bank, for example, was quick to suspend a loan to the industrial sector because of the policy change.

ZAMBIA

Brian D'Silva

Corn, wheat, and rice are the major cereals grown in Zambia. While agriculture contributes 20 percent to GDP, the dominant source of foreign exchange earnings is copper. During the copper boom from the mid-1960's to the mid-1970's, foreign exchange earnings increased while the government increased its control of the economy. The decline in world copper prices together with effects of drought in the early 1980's caused both the agricultural sector and the economy to deteriorate. Zambia has initiated major structural policy reforms which are to lead to reduced state control, reduced dependence on copper, and increased investment in agriculture.

Zambia became independent from Great Britain in 1964. The country's economy has historically depended upon the foreign exchange earnings of copper. The country is ruled by one party which played an important part in its achieving independence. Since 1969, the state has played an increasing role in the economy by controlling the copper mines as well as industry, transport, and public utilities. The expansion of the public sector continued until the collapse of copper prices. The economy worsened with rising petroleum prices. Zambia's terms of trade deteriorated by 70 percent. Zambia's budgetary and trade deficits increased while real per capita GNP declined. The trade gap together with commercial borrowings resulted in Zambia's inability to meet its debt obligations by the mid-1980s.

Zambia's agricultural sector consists of smallholders (about 600,000) and a large-scale commercial group (about 500 farmers). There are also parastatals involved in production and marketing of both crops and inputs. The major parastatals are the national agricultural marketing board (NAMBOARD), cold storage board, dairy produce board, and cotton and seed companies (LINTCO and ZAMSEED). NAMBOARD played a major marketing role in the marketing of corn, the chief staple crop.

Corn is the major crop and production is very vulnerable to weather. The major increase in production has been in oilseeds. However, vegetable oil output decreased because of processing and refining problems. While livestock production has increased due to improved grazing conditions, shortages and erratic supplies of stockfeeds have been a major constraint, particularly for dairy, poultry, and pork producers.

Policy Goals and Agricultural Programs

Following independence, Zambian policymakers instituted a system of increased state control of the agricultural sector and fixed producer and consumer prices. Part of the rationale for this was to make amends for the differential pricing that favored large farmers during colonial days. Furthermore, the copper boom provided both the foreign exchange revenues and budgetary support to implement these pricing policies. Changes in world economic conditions affecting the country's external and internal debt situation forced a reevaluation of policy objectives in the early and mid-1980's.

Zambia embarked on a series of reforms beginning in 1985 with the main objectives of liberalizing the economy to reduce price distortions, improving incentives for production and/or diversification, and improving the government's capacity for economic management. The centerpiece of Zambia's agricultural policy is to stimulate production through price incentives which reflect border prices. At the same time, consumer subsidies on food and transportation have been reduced. The country is also trying to diversify its agricultural sector by encouraging nontraditional exports such as horticultural products, day-old chicks, and sugar.

Zambia has made a nearly 180-degree turn in the type of agricultural programs it follows, from near-total state control of prices, marketing, and transportation to a near-total free market system. Significant producer price increases began in the late 1970's and the pace has recently escalated. The price of corn has increased by an average 22 percent per year in nominal terms between 1980 and 1985, while the average for all official prices rose 24 percent. The administered prices paid by the marketing boards have generally been the effective price for corn and most other crops except sorghum, millet, cassava, and peanuts. These crops rarely enter official marketing channels. Cost increases and input shortages have partially offset the incentive effect of higher prices, however. When the price of corn was deflated by the consumer price index, price increases averaged only 4 percent per year for 1980-85.

Marketing changes have accompanied the higher price regime. In 1984, provincial cooperatives started to take over more of the duties of NAMBOARD. This takeover was prompted by the inefficient, high-cost services of the board. In 1985, the system was further liberalized to allow private traders to operate, with the exception of corn. A qualitative change was made in 1986. First, producer prices would be formulated on the basis of border prices, rather than based on commercial production costs. Following the massive devaluation, an enormous price hike in local currency became necessary. Second, official prices would become floor prices with the assumption that prices would normally be higher. The government is to become only the buyer of last resort. This was already the case for wheat, where farmers had been selling their crop above the NAMBOARD price. Restrictions still remaining on corn marketing were also ended.

As a part of the movement toward market pricing, consumer subsidies have been eliminated or reduced. Consumers face higher retail prices while domestic food supplies are increasing. Corn meal was the last food item to remain subsidized. In December 1986, the price of more highly refined corn meal was decontrolled. Efforts to beat the price increase led to panic buying and shortages, and then riots. The government subsequently cancelled the price increase.

Agricultural Program Evaluation

It may take some time for the positive effect of the reforms to be fully felt. As NAMBOARD's role has shrunk, performance of the cooperatives has not been significantly better. Late collection of grain, high post-harvest losses, and late payments to farmers continue. Inexperience accounts for some of the difficulties, but much is explained by Zambia's financial crisis. Shortages of fuel, grain bags, tires, tarpaulins, and other items have occurred because of the lack of foreign exchange. The ability of private traders to assume a larger role is not yet proven, and problems such as dilapidated roads will still present problems no matter what the marketing agent.

Government investment in agriculture is increasing. The long-term focus is on smallholder development, improving such areas as research, extension, and training. However, the immediate effect of reforms tends to benefit commercial farmers more since they are more market oriented. Furthermore, some changes have been targeted explicitly at the commercial sector, such as accelerated depreciation rates and reduced taxes, with the view that commercial producers could more rapidly expand production.

Cotton has emerged as an export after rapid growth in production in recent years. In contrast to many of the other agricultural exports produced by specialized commercial producers, over 90 percent of cotton is grown by smallholders, a previously neglected group. An impressive extension effort, efficient distribution of inputs, and timely payment by LINTCO account for the success in expanding area and output. LINTCO's performance has been in marked contrast to most other parastatals, which are being cut back because of their inefficiency.

Sugar is another success, with record output recently leading to exports. Tobacco production has continued to slide, even though the country is well suited to growing it. The downward trend is a result of smaller area and stagnant yields. The number of commercial producers has declined because of unattractive prices relative to other crops, sharply higher input and labor costs, and unreliable supply of inputs. Smallholder production has also dropped, reflecting the lack of extension services as well as the other factors.

ZIMBABWE

Leroy Quance and Peter Riley

Zimbabwe is unique among Sub-Saharan African countries for its relative economic and political stability and high degree of food self-reliance. It is a middle-income country, with agriculture accounting for about 15 percent of GDP.

Zimbabwe has a modern agricultural sector dominated by the small white population and a largely African subsistence or communal sector. The government sets most producer prices, plays a major role in marketing through parastatal marketing boards, controls many retail prices, and sets minimal wages. Price intervention has been reasonably efficient and successful, although government outlays are large and there are difficulties in meeting the needs of communal farmers, especially with respect to pressure on communal land.

The most important agricultural commodities are beef, milk, corn, wheat, cotton, soybeans, groundnuts, and tobacco. Although cereal production annually grew almost 1.5 percent in recent years, annual population growth of over 3 percent caused per capita cereal production to decline almost 2 percent per year with the resulting need to import some cereals, mainly wheat. Corn is the most important food crop. Zimbabwe has made significant progress in controlling its outstanding debt, but recent events indicate unfavorable economic expectations for the late 1980's.

The Economy

Zimbabwe has over 8 million people and a per capita GDP of over $700, the third highest of nonoil exporting countries in Sub-Saharan Africa. Manufacturing is the largest economic sector, providing over 25 percent of GDP, while agriculture accounts for about 15 percent. Manufacturing is highly diversified and mostly foreign owned. Exports account for about 40 percent of foreign exchange. Almost all mineral production is exported but agriculture accounts for 40 percent of export earnings.

The government is a parliamentary democracy provided for by a constitution introduced at independence in 1980.

Although prime minister Mugabe verbally emphasizes socialist policies, the private sector dominates much of industry and commercial agriculture. The country has demonstrated rather remarkable economic development and political stability, especially in view of the drought conditions in the early 1980's, the global recession, and Zimbabwe's close proximity to South Africa with its destabilizing struggle with apartheid. The government appears to maintain the efficiency and growth-enhancing private sector approach in industry and commercial agriculture while using socialist policies to improve the access of previously landless rural masses to land and other means of production in the communal sector. Agriculture, forestry, and fishing employ about a third of Zimbabwe's workforce of 1 million people.

The Agricultural Sector

Varied ecological conditions allow Zimbabwe to grow a wide variety of crops. However, about three-quarters of the country--the west and south--are quite dry and best suited to extensive livestock rearing. Cattle provide draft power as well as meat. Irrigation is fairly well developed for growing winter crops and supplementing rainfed crops, with physical potential for further expansion. But irrigated production declines when water levels in dams are reduced by drought and high evaporation rates.

Commercial agricultural production is dominated by fewer than 5,000 large-scale commercial farmers, predominantly white, situated on the country's better land. They follow modern farming practices, similar to many American farmers, although relying on more labor. This sector is efficient, capital intensive, and productive. The communal sector includes 700,000 African farm families occupying small plots and using traditional farming methods. Commercial agriculture employs more labor than any other sector of the economy, but the number employed has declined in recent years. A substantial number of communal farms are worked by women, since many men migrate to work in cities or mines. There are also some large commercial estates, state-run settlement schemes, and a small-scale commercial sector of some 8,500 farmers.

Corn is the leading food crop and Zimbabwe normally exports corn. Wheat is also important, although grown entirely under irrigation, mainly in the commercial sector. Wheat is currently the only major agricultural import. Sorghum and millet are also grown.

Requiring large capital investment and skilled management, flue-cured tobacco, the country's leading export, is grown only by large-scale commercial farmers. Due to hand picking and good grading, Zimbabwe's cotton earns premium prices in European markets. Sugar, an estate crop, is another major export. Other significant exports include coffee and tea.

Zimbabwe is close to self-sufficiency in dairy production and has a large commercial beef sector. Beef exports were large before independence but declined in the early 1980's, partly due to large supplies on world markets.

Policy Goals

A major Zimbabwe policy theme is growth with equity. Major objectives are to provide adequate returns to producers, encourage food self-sufficiency, maintain low consumer food prices, and promote export earnings. The approach has been to preserve the productivity of commercial agriculture while improving opportunities in, and performance of, the communal sector. The income gap between commercial and communal farming was to be reduced mainly by land redistribution. The 1982 transitional national development plan called for 8-percent real growth for 3 years. Employment, training, research, and investment were all to increase. And, a government program was to resettle over 160,000 families on land purchased from the commercial sector. But, problems of the early 1980's associated with the global recession and African drought, led the government, with International Monetary Fund support, to undertake an adjustment program to reduce the budget deficit, limit short-term external debt and domestic credit, and restrict wage and salary increases, thus compounding difficulties in achieving the above longer term goals.

Agricultural Programs

The ministry of agriculture's agricultural marketing authority (AMA) coordinates operations of the grain, cotton, and dairy marketing boards and the cold storage commission. The AMA promotes efficient marketing of all controlled or regulated agricultural commodities and advises the agricultural ministry on commodity prices, including marketing guarantees and subsidies. Corn accounts for the major part of the grain marketing board's trading activities. Large stocks enabled Zimbabwe to avoid importing corn for the first 2 years of a 3-year drought that started in 1982. The ministry of trade and commerce recommends consumer selling prices with the primary concern of keeping consumer prices low. The grain marketing board also oversees capital improvement for bulk handling and storage facilities.

Although resettlement schemes include options relating to cooperative farming, communal living, and central core estates providing farmer services, the most common is for individual arable land allocations, communal grazing areas, and village settlements. Expected income targets, credit, and extension services are also provided.

Agricultural Program Evaluation

Zimbabwe must manage many difficult and interrelated problems relating to building stable and efficient independent government institutions after decades of foreign or minority rule, maintaining productive mineral and industrial sectors that are usually foreign owned, managing the dual agricultural complex, dealing with a drought-prone climate, resolving large wage and income differences between communal and commercial workers, solving international debt and balance of payment problems, and combating high domestic inflation.

The country's majority African population has benefited from improvements in education, health services, and rural development, including schools, hospitals, and roads. Although due in part to drought and low commodity prices, the ambitious 8-percent growth target for the first 3 years following independence in 1980 did not materialize. Real growth reached 5 percent in 1985. Cotton output set records in 1984 and again in 1985. Communal farmers accounted for much of this growth.

The first half of the 1980's suggests that the government is paying an increasingly high cost for equity gains via food subsidies. Demand generated by low consumer prices and higher minimum wages caused outlays on food subsidies to increase from Z$26 million in 1979-80 to Z$126 million in 1982-83. Consumer subsidies were then cut to Z$65 million in 1983-84.

Program costs for producer price support operations have also increased but not in proportion to consumer subsidies. The government has tended to subsidize, at prices above world levels, production of beef, corn, wheat, and soybean production in certain years, and to tax, via prices below world levels, production of milk, wheat, cotton, soybeans, and groundnuts. But, the government's producer price interventions have generally aided agricultural growth and stability. Bulk handling and storage facilities in Zimbabwe are more adequate than in most Sub-Saharan African countries. Government intervention in the communal sector via land resettlement programs faces more formidable difficulties and has displayed less, albeit positive, progress.

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UNITED STATES

Barbara Chattin, Tom Fulton, and Suchada Langley

The United States, the world's largest market, is the largest exporter of agricultural products and second largest importer. It leads the world in exporting several important agricultural commodities including corn, wheat, and soybeans. The United States provides price and income support to grain, cotton, and, to a limited extent, soybean producers through commodity loans and/or deficiency payments. Beef producers receive minimal assistance through tariffs and, at times, voluntary export restraint agreements. Dairy producers and, even more so, sugar producers receive substantial support through import quotas.

The Economy

The world's largest economy, the United States accounts for about 25 percent of the world's economic output and about [illegible]5 percent of the output of industrialized nations.

During the 1970's, while U.S. economic growth averaged 2.9 percent per year, the rates of inflation and unemployment were about 7.1 and 6.2 percent. The economy during the first half of the 1980's grew a much lower 2 percent. The average rate of inflation declined to 5 percent, while the unemployment rate was about 8 percent. Real interest rates and the value of the dollar were much higher in the 1980's than in the 1970's.

The Agricultural Sector

Farming accounts for 2 percent of GNP, while purchased inputs and financial services account for another 2 percent. Activities beyond the farmgate (storage, processing, exporting, and sales) account for an additional 14 percent. Of the 21.3 million agriculturally related jobs involved in meeting consumer and export demand and storage in 1984, 2.7 million were in farm activities, 16.6 million were in downstream (processing and retailing) activities, and 2.0 million were in upstream (input) activities.

In 1985, agriculture accounted for 14 percent of total exports and 6 percent of total imports. Agricultural trade finished 1986 in surplus for the 27th consecutive year. However, the surplus, $5.4 billion, was substantially below 1985's $9.1 billion and the lowest since 1972. While imports were high, most of the balance's decline reflected eroding exports.

Discussion of U.S. agriculture tends to focus on exported commodities, primarily grains and soybeans. However, livestock, fruit, and vegetable production account for about 65 percent of the value of production with beef and dairy being the two most important livestock products. Most meat, milk, fruits, and vegetables are produced solely for the domestic market. Less than 10 percent is exported.

The United States is the world's major exporter of wheat, corn, and soybeans. Grain or soybeans accounted for about 75 percent of the cropland in production last year. The domestic livestock sector consumes large, but stable, quantities of feed grains and soybean meal. The well-being of these sectors is largely determined by exports. Agricultural imports are dominated by products not suited to northern climates, primarily coffee, sugar, and tropical products.

Policy Goals

Federal agricultural policy, designed to preserve the family farm tradition, is constructed around three general goals: (1) maintain (or increase) farm income at levels commensurate with nonfarm income, (2) provide consumers an abundance of food and fiber at reasonable costs, and (3) accomplish the two goals at the least possible cost to taxpayers.

U.S. price and income support programs began during the 1930's. The productive capacity of the agricultural sector has generally exceeded demand. This excess capacity has served to keep farm incomes at a level below that of the nonfarm sector. As a result, labor has left agriculture over time and has been replaced with capital. Federal farm policy has been designed to improve these farm conditions primarily through commodity price and income support, financial and marketing assistance, and research and teaching.

Federal food assistance programs, like food stamps and school lunch, are also important social programs. Regular purchases of commodities in surplus occur as part of commodity distribution and school lunch programs.

Agricultural Programs

U.S. farm programs provide price and income support to grain, cotton and, to a limited extent, soybean producers through supply controls, commodity loan programs, and direct payments.

A key distinction between U.S. policies and those of other nations is the emphasis on acreage restriction programs. Acreage-diverting programs help to offset the supply-stimulating effects of price and income support programs while indirectly supporting prices by reducing crop supplies. Acreage removed from production must be devoted to conservation uses.

The Food Security Act of 1985 automatically triggers annual acreage reduction programs based on expected stocks in order to control commodity surpluses. Although participation in either acreage reduction programs (ARP) or paid land diversion programs (PLD) is voluntary, producers must comply if they wish to receive deficiency payments and commodity loans. ARP's are uncompensated acreage diverting programs, whereas PLD's pay producers for idled acreage.

The payment is made in cash or commodity certificates which can be redeemed in government stocks. PLD's were required for 1986-crop wheat and feed grains, and payments were made with certificates. ARP's were also required for wheat, feed grains, cotton, and rice. About 45 million acres were diverted in 1986 as a result of these programs.

The conservation reserve is a long-term acreage retirement program targeted to highly erodible land currently planted in any crop. The government pays an annual rental rate plus a portion of the cost of establishing a cover crop. A reserve of 40-45 million acres is authorized with 19 million acres in the reserve to date.

Grain, cotton, and soybean prices are supported through commodity loan programs. The Commodity Credit Corporation (CCC) makes nonrecourse commodity loans at established loan rates to farmers who use their crops as collateral for the loans. Grain and cotton producers participating in acreage reduction programs and all soybean producers may obtain regular loans for 9-12 months. Grain producers (except rice) may also place their crops in the long-term farmer-owned reserve loan program (FOR). If market prices are above the loan rate, producers may repay their loan with interest and sell their crop. Otherwise, they may forfeit their crop to the CCC as settlement for the loan. If participation in commodity programs is high enough, these loan programs support the price to all domestic producers and extend this price protection to international producers as well.

For both wheat and feed grains, U.S. stocks are now much greater than annual exports, partly because returns to farmers from sales to the CCC are higher than market prices. U.S. grain stocks are expected to grow by 40 million metric tons, with all the increase in feed grains. By the end of the 1986-87 marketing year, the U.S. grain stocks will be almost 60 percent of the world total, representing more than 2 years of total world import demand for grains.

Forfeited crops and grain placed in the FOR enter the marketplace only after prices move above (high) target prices or after the long-term contracts for the FOR expire. Commodity certificates, authorized in the 1985 farm act, are issued as partial payment to farmers under various programs. These certificates may be redeemed for producer-held commodity loans or CCC inventory, thereby releasing these stocks to the market.

A marketing loan allows repayment of CCC loans at levels below the loan rate. These loans encourage producers to sell their crop in the market rather than forfeit it to the CCC. While authorized for all grains, cotton, and soybeans in the 1985 farm act, marketing loans are required for rice and cotton. With marketing loans, U.S. cotton and rice are priced at world levels, enhancing exports, while producers receive price supports above world prices.

A system of target prices and deficiency payments for wheat, feed grains, rice, and cotton producers supplements price supports provided through nonrecourse loans and, indirectly, through acreage reduction programs. Deficiency payments are based on the difference between the target price and the higher of either the market price or the established loan rate. Commodity certificates (rather than cash) have been issued for part of deficiency payments owed to grain and cotton producers.

No deficiency payments were made during FY 1981, the peak of U.S. agricultural exports. During FY 1986, cash deficiency payments reached $6.9 billion.

Because producers participating in the programs must comply with acreage reduction requirements to receive deficiency payments, these income supports are in part compensation for income foregone on unplanted acreage. However, there is no doubt that the income foregone is less than the deficiency payment income support. Wheat and feed grain producers also receive annual storage payments to help defray the cost of storing grain in the farmer-owned reserve.

The 1985 Act mandates a payment limit of $50,000 per person per year for regular deficiency and land diversion payments. Recent legislation placed a $250,000 limit on total payments which includes the $50,000 plus gains from other programs such as marketing loans. Commodity loans and storage payments are not included in total payments.

Nonrecourse loans are also available to sugar processors. However, import quotas restrain potential supplies. Current legislation mandates a no-net-cost sugar program to taxpayers and, in most years, domestic sugar prices have been high enough to prevent forfeitures of nonrecourse sugar loans. Import quotas were recently tightened by 41 percent.

Domestic prices of dairy products are maintained through import quotas and tariffs. Legislated minimum prices for milk used for manufactured products are also supported through CCC direct purchases of cheddar cheese, butter, and nonfat dry milk. In recent years, however, the price actually received for milk has been lowered by an assessment of at least $0.50/hundredweight of milk, as required by legislation in times of high CCC inventories of dairy products. Marketing orders further support the price of fluid (drinking) milk above the price of manufacturing milk.

Supply control programs now extend to dairy producers. These are voluntary and other dairy price support benefits do not depend on participation in supply control programs. The 1984 dairy diversion program paid producers to reduce milk production. Milk production declined in 1984, but rose to record levels in 1985 after the program ended. The 1985 Act mandated a dairy termination program (whole-herd buy-out) for 1986 and 1987, paying producers to slaughter or export their cows and discontinue operations for 3-5 years.

The United States has no long-term domestic price and income support for beef, poultry, pork, fruits, and vegetables, although the CCC is mandated to purchase 400 million pounds of red meat to reduce short-term effects of the dairy herd termination program on red meat producers. Beef imports are subject to a tariff. Also, import quotas may be applied whenever beef, goat, and mutton imports exceed a maximum access level. Import quotas have been used only once, in 1976. Voluntary export restraint agreements with major beef suppliers were agreed to in 1979, 1983, and 1984. The quality and/or quantity of some fruits and vegetables are regulated through marketing orders.

The 1985 Act, as amended, expanded international food assistance and programs to promote export sales, providing $8 billion per year when fully operational. International attention has focused on the export enhancement program (EEP) which provided $405 million in CCC commodities (primarily wheat, flour, and barley) to exporters to generate sales of $805 million in FY 1986. Grain also is exported under the P.L. 480 food aid program, as well as export credit guarantees and, more recently, Section 416 programs.

The United States has become a net exporter of dairy products through expanded use of Section 416 and P.L. 480 food donation programs. These exports reduce

CCC stocks of dairy products. Export assistance for beef, pork, and poultry can be provided through EEP funds (used for poultry and dairy cattle to date).

In 1955, the United States was granted a waiver from Article X of the rules established by the General Agreement on Tariffs and Trade (GATT). The GATT waiver allows the United States to impose quantitative trade restrictions on agricultural imports when imports interfere with or nullify commodity program operations. Restrictions exist for cotton, most dairy products, and peanuts under Section 22 of the Agricultural Adjustment Act of 1933, as amended.

U.S. agricultural producers also benefit from Federal support for research and extension, inspection services, interest rate concessions on Farmers Home Administration loans, transportation subsidies on the inland waterway system and railways, exemption from taxes on fuel for off-highway purposes, and special provisions for Federal income taxes. Farmers in 16 Western States benefit from Federal irrigation programs. A Federal crop insurance program also exists.

Agricultural Program Evaluation

The 1980 farm act fixed commodity loan rates for grains and cotton far too high for 1981-85 economic conditions. In effect, the United States announced the minimum prices that would prevail in world grain markets for the next 4 years, thereby providing producers around the world an umbrella of price protection under which they could expand their production. The rapid appreciation of the U.S. dollar compounded the effects of the high loan rates. As loan rates became the price floor in world markets, the U.S. market share declined and stocks rose, despite acreage reductions required by commodity programs during that period.

The 1985 farm act reduces the price support previously given to competing producers by allowing loan rates to decline in response to market conditions. Loan rates for wheat and corn will drop by about 30 percent over the first 2 years of the act Marketing loans for cotton and rice and the use of commodity certificates to release stocks onto the market further lower prices. Other countries also are concerned about the use of U.S export programs to regain market share. World prices of grains and cotton have fallen significantly as these new provisions have been implemented.

Current programs continue to indirectly support world market prices in the short run. The United States unilaterally reduces crop production through acreage reduction and the conservation reserve. No other wheat or feed grain exporter controls production. Furthermore, despite active use of commodity certificates, U.S. stocks of grains will increase significantly. Stocks decrease market supplies, thereby raising prices in the short run. However, unless world surpluses decline, these stocks will depress prices when released onto the market.

Domestic prices for sugar a[illegible]orted at three times world prices using import quotas, which have ra[illegible] tightened. Consumers, by paying higher prices, transfer income to s[illegible] producers and processors. Corn sweetener manufacturers also benefit through the higher prices they are able to extract for their products and a larger share of the general sweeteners market.

The dairy price support program raises consumer prices through quotas, tariffs, and CCC purchases of dairy products. Taxpayers also pay the costs of the dairy herd termination program, although the program's intent is to reduce dairy program costs by reducing milk supplies.

Prior to last year, the United States offered no direct support to pork and poultry producers and, in many years, beef producers received only minimal support through a tariff. In fact, livestock producers were implicitly taxed in the years when loan rates supported feed grain prices. During 1986, poultry exports occurred under EEP.

The tariff on beef imports and voluntary restraint agreements offer only minimal price support to the beef sector in general, although effects of the agreements along the coasts may be more significant. CCC purchases of beef as part of the dairy herd termination program provide shortrun price support to producers and raise prices to consumers.

Public attention has increasingly focused on the large government budget outlays associated with agricultural programs in recent years. CCC price and income support outlays reached $25.8 billion in FY 1986, compared with $5.3 billion in 1981. Government payments became increasingly important to farmers as the financial health of the sector declined in the early 1980's.

The financial health of the farm economy was seriously eroded during the first half of the 1980's due to rising interest rates and contracting export markets. While the sector has made significant progress in adjusting to the economic environment of the 1980's, the long-term viability of the sector continues to depend on growth in exports.

Farm cash income measured in current dollars grew steadily over the 1980's to record levels due to large government cash payments ($8-$12 billion per year). However, farm cash income measured in constant dollars has declined significantly from 1970 levels. Farmland values, traditionally used as an equity cushion during years of unfavorable market conditions, also have declined dramatically by about a third or $250 billion since 1980. Reductions in equity, often compounded by cash flow problems due to high interest costs, have been most severe in grain producing areas of the Midwest and Plains, those areas most dependent on export markets.

As farm cash income in constant dollars has declined and Federal outlays to agriculture have increased, greater attention has focused on possible legislative alternatives. The Reagan administration has proposed several changes to current farm programs. Three proposals are specifically designed to reduce program costs: annually reduce target prices for grains and cotton 10 percent beginning in 1988 rather than the current mandated reductions of 2-5 percent, incorporate all payments for commodity programs into a $50,000-payment limit and tighten the definition of a "person" to avoid multiple payments to a producer, and lower the sugar loan rate from 18 to 12 cents per pound. Transition payments to sugar growers will be made but will be phased out over 4 years. A fourth proposal will cut the link between production of surplus commodities and Federal payments ("decoupling") by eliminating the requirement that farmers produce a crop in order to receive income payments.

Congress also will revisit farm programs. Congressional proposals range from plans to decouple payments from production (Boschwitz/Boren plan) to mandatory production controls (Harkin's plan) accompanied by large increases in loan rates and the elimination of target prices.

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REGIONAL SUMMARY OF WESTERN EUROPE

Gene Hasha

The Common Agricultural Policy (CAP) of the European Community (EC) is domestically oriented and dominated by farm income concerns. It has depended largely only on price management to achieve multiple objectives. Market prices are maintained near desired targets. Minimum import prices enforced by variable levies provide border protection, set price ceilings, and insulate EC markets from world markets. Intervention purchases at guaranteed prices establish a price floor. Consumption and export subsidies dispose of surpluses, allowing EC producers to avoid adjustment even for EC market imbalances. Processing subsidies and direct payments are employed for some commodities, but input subsidies and state marketing are not used. Production quotas limit support for sugar and milk production.

The CAP has improved farm structures and increased agricultural productivity, greatly improving EC food security. Farm incomes have been maintained at acceptable levels, although with increasing difficulty. These successes have been achieved only with high consumer prices and increasing conflict with other agricultural exporters. Rapidly growing surpluses also have led to skyrocketing budget costs and the near exhaustion of acceptable surplus disposal outlets in several sectors, generating strong pressure for CAP reforms.

The Economy

The EC was formed in the aftermath of World War II by the original six members--France, West Germany, Italy, the Netherlands, Belgium, and Luxembourg--to encourage the economic recovery and development of Western Europe and to recover an important position in world affairs through political and economic integration. The EC was enlarged in 1971 to include the United Kingdom, Ireland, and Denmark. Greece joined the EC in 1981 (producing the EC-10); Spain and Portugal joined in 1986 (EC-12).

The EC members are parliamentary democracies. A successful customs union for industrial goods has been realized within the EC, but the EC remains a compact among sovereign nations. Control of most economic policy except for agriculture is formally retained by the national governments.

Western Europe achieved very rapid economic growth in the postwar period accompanied by very low unemployment. During the 1970's, inflation increased seriously, and, after 1981, economic growth slowed significantly and unemployment reached 15 percent in several EC countries. Economic growth has recently increased somewhat and inflation has been reduced, but high unemployment persists.

The Agricultural Sector

Agriculture, forestry, and fisheries in the EC-10 accounted for only 3.7 percent of GNP in 1983, while providing 7.6 percent of total employment. In 1984, these sectors accounted for almost 9 percent of total exports and for over 15 percent of total imports. The EC has been the world's largest importer of agricultural products and the world's second largest exporter. Agricultural exports are an important source of foreign exchange for some EC countries, including France, the Netherlands, and Denmark.

EC agricultural production is dominated by livestock products, grains, vegetables, wine, fruits, and sugar. The EC dominates world export markets for dairy products and has been the largest exporter of beef in recent years. The EC is a major exporter of wheat, sugar, poultry, and wine. EC agricultural imports are dominated by those products not suited to northern climates, including oilseeds and their products, cotton, tobacco, tropical products, and off-season fruits and vegetables.

All agricultural market support and trade policies in the EC are EC programs. The member states also have national policies related to agriculture, but these are dominated by social security measures, veterinarian and health standards, and provision of subsidized credit for rural development programs.

Policy Goals

The Treaty of Rome establishing the EC called for the "adoption of a common policy in the sphere of agriculture" and specified that the objectives of the Common Agricultural Policy (CAP) should be:

(1) to increase agricultural productivity by promoting technical progress and ensuring the rational development of agricultural production and the optimum utilization of the factors of production, in particular labor,

(2) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture,

(3) to stabilize markets,

(4) to assure the availability of supplies, and

(5) to ensure that supplies reach consumers at reasonable prices.

During its development in the 1960's, the CAP faced two critical issues: the politically popular desire for increased food security in postwar Europe and the political necessity to support farm incomes. A large agricultural population and a lack of technical sophistication presented a severe problem of low farm incomes within rapidly developing industrial countries. A policy of high food prices similar to several previous national policies was selected because it allowed farm incomes to be subsidized at the direct expense of consumers with minimal expenditure from the treasury since the EC was significantly less than self-sufficient in most major agricultural products.

The Treaty of Rome (March 1957) states that the member states should contribute to the smooth development of world trade, the progressive elimination of international trade restrictions, and the lowering of tariff barriers.

Agricultural Programs

Initial decisions establishing the CAP in 1962 set forth the following three basic principles for the CAP's market and price policies:

(1) Unity of the market requires a single market within the EC without levies or subsidies on internal trade which might distort competition. Common prices and the harmonization of administrative, health, and veterinary provisions were required.

(2) Community preference provides border protection to ensure that EC produce has preferred access to EC markets at targeted price levels.

(3) Financial solidarity requires that all market support for agriculture be financed from EC resources. All EC expenditure on agriculture is made from the European Agricultural Guidance and Guarantee Fund (EAGGF).

The CAP, as it has developed since 1962, has employed a wide variety of policy instruments for various commodity programs. But, the principal CAP regime is a system of price management that maintains market prices within small bands around the desired target prices with the following measures:

(1) Minimum import prices (called threshold prices for grains) provide border protection from cheap imports and set price ceilings. Variable import levies equal to the difference between target prices and world prices are employed to enforce minimum import prices. The insulation of EC markets from world market conditions is nearly complete. In the rare event that world prices exceed EC prices, exports are taxed and imports are subsidized. EC producers and consumers are sheltered from the adjustments that world market conditions require somewhere in the world.

(2) Intervention purchases of surpluses at guaranteed prices prevent EC overproduction from undermining domestic prices and establish a floor for internal prices. Storage aids smooth the flow of marketing and stabilize prices during the year.

(3) Export subsidies and other subsidies for extraordinary internal consumption are provided by the CAP to dispose of surpluses. Stock accumulations can be only a temporary response to surplus production. These disposal subsidies allow EC producers to avoid adjustment even for internal EC market imbalances. Disposal subsidies may effectively establish a floor for prices rather than intervention purchasing when subsidies are adequate to maintain market prices just above the guaranteed price level.

EC commodity programs exhibit several variations on the basic CAP system because of sectoral differences. The complete CAP system of variable import levies, effective internal price support through intervention, and subsidized disposal of surpluses is provided for grains, sugar, dairy products, beef, and sheepmeat. For wine and fruits and vegetables, strong border protection also is provided, but prices are supported internally only at relatively low levels, providing a safety net for producers in the event of occasional severe market imbalances. Pork, poultry, and eggs do not receive direct internal support through intervention, but export subsidies do provide significant effective price support.

Commitments in the General Agreement on Tariffs and Trade (GATT) and other political agreements precluded application of the basic CAP system of high prices for some commodities. Effective receipts for EC producers of oilseeds, some fruits and vegetables, tobacco, and cotton are maintained above market prices through processing subsidies provided only when producers are paid fixed minimum prices. These subsidies are similar in effect to deficiency payments. Direct payments also are made to producers of olive oil, durum wheat, beef, and sheepmeat.

The CAP strongly influences EC agriculture through its effects on prices, but most producer and consumer decisions remain private and most marketing and external trade remains in the private sector. The EC does not normally engage in state trading or internal marketing. The CAP generally relies on price management to achieve farm income objectives. No input subsidies are allowed, with the exception of subsidized credit for special development programs.

Production controls are employed by the CAP for only two commodities. Sugar production always has been subject to a quota system. Sugar production beyond quotas must be exported without subsidies. The EC imposed milk delivery quotas in 1984 because of budget costs and surplus disposal problems. The quotas are enforced by a superlevy on excess production.

During the last decade, the rapid development of EC surpluses and skyrocketing EC budget costs led to an increasing acceptance of producer coresponsibility, the idea that producers should bear some disposal costs. The EC sugar program always has included a producer tax to partially finance exports. The EC adopted a coresponsibility levy on milk production in 1977, but the levy always has been less than 3 percent. The coresponsibility concept was extended in 1982. Production thresholds were established for grains, rapeseed, milk, and processing tomatoes. Reductions in support price increases are obligatory if production exceeds targets, but the EC Council was unable to adhere to its own prescriptions for grains in 1985. In 1986, the EC imposed a 3-percent coresponsibility tax on grains.

During the monetary instability of the 1970's, the EC abandoned the CAP principle of common pricing. Most EC countries adopted nonmarket green rates for conversion of agricultural prices from European currency units (ECU) to local currencies. Green rates allow EC countries to have different actual price levels despite theoretical common prices. Differing actual price levels require border taxes and subsidies on intra-EC trade, called monetary compensatory amounts (MCA), to prevent transport of produce to higher price countries for sale to intervention. An EC country electing to maintain lower prices finds that its agricultural exports to higher price EC countries are taxed, while its imports from them are subsidized with EC funds.

Agricultural Program Evaluation

The stated agricultural policy goals of the EC, like those of many governments, embrace all the elements desirable to any significant political constituency and involve inconsistencies. Nonetheless, the CAP has successfully addressed several of the goals of the Treaty of Rome. Stable markets and increased agricultural productivity through technical progress have been achieved. High and stable prices have provided effective producer incentives and, combined with national investment policies, have fostered rapid development of EC agriculture. Higher land values have increased assets which together with stable incomes have enabled farmers to borrow and invest more readily in modern systems and equipment. Increased production has greatly increased European food security.

EC and national programs have improved farm structures. Agricultural population has been greatly reduced and average farm size increased. In the EC-10, employment in agriculture, hunting, forestry, and fishing, 19 million in 1960, declined to only 7.9 million in 1984. The average EC-10 farm was 15.7 hectares in 1980. Average farm size in Germany, for example, increased 58 percent from 1966 to 1983.

In practice, farm income is the foremost farm policy consideration, both in the EC and within all member governments. Until the mid-1970's, the CAP system of high prices readily achieved politically acceptable farm incomes despite quite small farms, which are less than a tenth the U.S. average size. Since the mid-1970's, growth in real EC farm incomes has failed to keep pace with nonfarm incomes. Pressure on farm incomes has increased in the 1980's. Real EC farm incomes in 1980, 1981, and 1983 were below any year from 1974-79. In 1985, real EC farm incomes declined to the lowest levels in 15 years. Farm income problems have intensified as alternative nonfarm employment has declined because of general economic recession in Europe since 1981. Nonetheless, without the CAP, agricultural incomes in the EC would have declined precipitously over the past two decades, or the exodus from agriculture would have been much larger.

The CAP's record on consumer prices is debatable. EC agricultural prices normally are considerably above world markets, but EC consumers generally have not protested strongly, accepting high prices as the cost of increased food security. EC farm prices have declined when adjusted for inflation, and EC incomes have risen. Food accounts for a declining portion of consumer expenditures. The increasingly dominant costs of processing, packaging, and marketing also have diminished the significance of basic agricultural product prices in consumer food costs.

Of the basic principles of the CAP, preference for community production in community markets has been easily accomplished. Common financing also has been achieved, although the distribution of CAP costs and benefits among member countries and groups is a continuing source of conflict. Common EC pricing, finally achieved in 1967, proved the least viable of the CAP principles, lasting only 2 years.

The CAP is not fully compatible with the EC goal of rational development of agricultural production and the optimum utilization of the factors of production. Some relocation of EC agricultural production based on comparative advantage has occurred, but the failure of common pricing and the institution of levies and subsidies on intra-EC trade means that the full benefits of comparative advantage have not been achieved. Of course, EC prices well above world prices indicate that considerable resources have been oriented to EC agriculture that would have been more efficiently utilized in nonagricultural sectors.

Recent USDA estimates indicate that transfers to the farm sector through all EC policies accounted for 41 percent of the total value of agricultural production in 1982-84. Research indicates that the benefits to EC farmers from the CAP are less than its costs to taxpayers and consumers. Elimination of all CAP price supports or maintenance of prices adequate only to insure EC self-sufficiency combined with direct payments to maintain farm incomes would result in a net economic loss only for the Netherlands, Ireland, and Denmark. Although taxpayers and consumers collectively would be better off, budget costs would increase substantially.

The EC is certain to maintain that the member states have contributed to the smooth development of world trade, the progressive elimination of international trade restrictions, and the lowering of tariff barriers, as directed by the Treaty of Rome. Other major agricultural exporters are equally certain to disagree. A disregard for the CAP's negative effects on other countries is inherent in the basic concept of the CAP system. Variable import levies and export subsidies are designed to isolate high EC prices from world markets and enable the EC to avoid socially and politically painful production adjustments that world market surpluses require elsewhere in the world. The EC has continued to minimize its production adjustments even to those world market imbalances to which the EC now significantly contributes. EC surplus disposal programs effectively export EC market imbalances, intensifying international agricultural surplus problems and farm income problems in other countries.

Although the CAP is designed to avoid the production adjustments required by world market imbalances, the EC Commission seems to feel that other agricultural exporting countries should share the burden of adjustment in EC agriculture. "If the Community is to demand greater disciplines of its own agricultural producers, it must be prepared to take parallel action in respect of imports." In recent years, the EC has restricted imports of cassava and bran and the Commission has proposed to renegotiate existing special agreements in order to reduce imports and to introduce various new import restrictions.

The CAP's foremost problems are its skyrocketing budget costs and increasing difficulties in surplus disposal. For most of the CAP's history, income transfers to the farm sector occurred predominately through high prices at the direct expense of consumers. With the emergence of surpluses in many sectors in the late 1970's, the nature of the CAP system required more and more direct EC expenditure at the expense of taxpayers to achieve the necessary transfer. Nonfarm consumers and taxpayers are largely the same people, but they have accepted rising CAP budget costs much less readily than high prices. The negative impact of the CAP on other major agricultural exporting countries also generates international conflicts for the EC which increased significantly in recent years.

The CAP also has produced growing surplus disposal problems, which, with the budget constraint, are proving a strong impetus for CAP reforms. Milk delivery quotas represented a bold action for the EC, but few alternatives remained. Dairy was and is the largest EC budget problem. Surplus disposal through domestic subsidies had been exhausted, and world markets could no longer absorb the increase in EC exports. Loopholes in provisions for the superlevy undermined the effectiveness of the quotas, however, forcing large quota reductions and program reforms at the end of 1986. Acceptable disposal outlets also are diminishing rapidly in the wine, grains, and beef sectors.

The CAP's growing surpluses and budget costs have resulted from dependence upon a single policy tool, price management, to achieve multiple policy objectives. High and stable prices have successfully achieved food security and politically acceptable farm incomes, but they also have curtailed consumption and stimulated production, resulting in expensive surpluses and large-scale exports. The single policy tool of price management can no longer achieve desired farm incomes and simultaneously maintain a balance between EC production and consumption that results in acceptable budget costs. EC policy proposals are turning increasingly to other policy mechanisms.

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AUSTRIA

Suzanne Dash

Austrian agricultural policy has emphasized self-sufficiency. Price supports for grains and dairy products have resulted in surplus production. Fruits, vegetables, coffee, tea, spices, and oilseed products are major imports. Austria's largest trading partner is the EC, but Austria also works to maintain trade relations with Eastern Europe.

The Economy

Austria is a parliamentary democracy. Two political parties, the socialists and the conservative peoples' party, have governed Austria as a coalition or separately since 1945. The government is headed by the president and the more politically powerful chancellor. Austria's economy has experienced a long period of sustained growth. From the end of World War II to 1979, real GDP averaged 4.5 to 5.0 percent per year. Growth has been slower in the 1980's ranging from 1.2 percent in 1981 to 2.8 percent in 1985. Income from tourism generally offsets a merchandise trade deficit.

Agriculture and forestry account for 3-4 percent of GDP. However, this understates the importance of agriculture in the total economy. Austrian agriculture is characterized by a large proportion of part-time farmers. Over half of all farms are operated part-time. The rural population accounts for 7.6 percent (1981) of the total population.

Dairy and grains are the two major commodities produced. Production of both are aided by price supports and have been produced in surplus since the 1970's. Austria has very limited production of oilseeds but produces a wide range of other temperate climate crops.

Austria is a net importer of agricultural products. In 1984, agricultural exports and imports totaled $15.7 billion and imports reached $19.6 billion. Main commodities imported are fruits, vegetables, coffee, tea, spices, oilseed cake, and meal. Dairy products and cereals are the major exports. While the EC is Austria's major trading partner, Austria has also worked to maintain close relations with Eastern Europe. These close relations often included subsidized sales of surplus commodities to Eastern Europe.

Post-war policy has emphasized food self-sufficiency. While this has been largely achieved, Austria's agricultural policy has stayed relatively unchanged. Policy instruments include price supports, import restrictions, and export subsidies. These instruments have encouraged grain and dairy production at surplus levels. Export subsidies have become very costly in the 1980's. However, producers of dairy and grain contribute almost half of the total cost involved. Cheese is the primary dairy export, while wheat is the grain most exported.

In the late 1970's, Austria proposed a consumption tax on oilseed products to fund a domestic oilseed program. Austria dropped the proposal after receiving a negative response from trading partners and the GATT. The goals included increasing production of oilseeds and thereby decreasing dependence on imported products, developing crushing capacity within Austria, and moving acreage out of surplus grains.

Another goal of Austrian agricultural policy is the maintenance of the rural population, especially in the mountain regions. Programs have been set up to improve special areas by developing the infrastructure, subsidizing farm improvements, and paying premiums to farmers for preserving the land.

Agricultural policy is influenced by the Austrian state treaty. Allied withdrawal after the war depended on Austria's pledge of neutrality. Austria would likely have joined the EC except for this pledge. Austria is a member of the European Free Trade Association composed of the non-EC Western European nations.

Acreage and yield increases encouraged by government guarantees have turned Austria into a grain exporter. The cost of the grain program in 1985 totaled $73 million, mostly for export subsidies. Total export value for cereals was $169.1 million. At the same time, Austria is an insignificant producer of oilseeds and had to import over $100 million of oilseed products in 1984. Austria does plan to go ahead with an oilseed program but will fund it from the budget rather than through the objectionable consumption tax.

The dairy program is the most expensive commodity program, totaling $150 million in 1985. It is difficult for the government to cut back because over 50 percent of the dairy farms are in the sparsely populated mountain and hill regions. Austria wants to maintain these populations and there are few alternatives to dairying. A milk quota system has been in effect since 1978 but has not been effective in curbing the surplus. A recent effort by the government to buy back quotas was unsuccessful. Not much improvement in this situation is expected soon.

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BELGIUM

Stephen W. Hiemstra

Belgium is a constitutional, representative, and hereditary monarchy. Executive powers are vested in the crown. Legislative powers are shared between the crown, the senate, and the chamber of representatives. Prime minister Wilfred Martens heads a center-right, four-party coalition government. Economic policy stresses reduction of the government deficit and increasing industrial competitiveness.

Belgium formed a customs union with Luxembourg in 1921 which was expanded to include the Netherlands in 1948. It is known as the Benelux Economic Union.

The national currency is the Belgian franc which is pegged to the German mark through adjustments in interest rates.

The Belgian economy is heavily dependent on export of traditional industrial products to EC trading partners and is vulnerable to fluctuations in foreign demand. The government instituted a guaranteed minimum income, on-the-job training programs, and a generous unemployment insurance system in response to high levels of unemployment in the 1970's. Macroeconomic policy in the 1980's has, by contrast, stressed wage restraint, increased labor market flexibility, and lower corporate tax rates.

Belgium has an efficient, family-oriented agriculture specialized in livestock production and horticultural crops. The top income generating activities are pork, beef, veal, dairy, vegetables, flowers, nursery products, sugar beets, and wheat. Meat and dairy products accounted for more than 60 percent of the total value of agricultural production in 1985.

Belgium is 80-90 percent self-sufficient in food production. Although a net agricultural importer, Belgium exports a very high proportion of its agricultural output, primarily to other EC member states. This is possible because important oilseed crushing and feed manufacturing industries permit

Belgium to import grains and oilseeds and to export feed, processed fats and oils, and livestock products. Belgium is also known for its sugar refining and confectionary products industries.

U.S. agricultural exports to Belgium include soybeans, feed grains, rice, and tobacco. Belgian agricultural exports to the United States include cocoa products, confectionaries, fresh vegetables, and canned fruits and vegetables.

In 1984, 2.5 percent of the economically active population was employed in agriculture. Wheat, barley, and sugar beets occupied the most acreage. Livestock inventories included 5.3 million hogs, 3.2 million cattle (1.03 million dairy cattle), and 28 million chickens.

Belgium is a founding member of the EC and a participant in the CAP. Belgian support for the CAP stems from concern about farm incomes and from the influence the Belgian farmer's union (Boerenbond) exerts within the Flemish Christian social Party. Roughly 80 percent of all Belgian farmers belong to the farmer's union, in part because the organization controls most of Belgium's farm input, agricultural credit, and food marketing industries.

Belgium's national agricultural policy objectives focus on consolidation of small inefficient farms, provision of social security to farmers, and promotion of modernization and profitability through provision of agricultural credit.

Belgium often takes a leading role in EC sugar policy discussions due to the country's extensive sugar beet cultivation, sugar processing, and confectionary products industries. Belgium generally supports limits on EC sugar imports, subject to adherence to the Lome Convention.

The concentration of Belgium's swine industry in the heavily populated region of Flanders has led to concerns over manure disposal and disease vulnerability. About 40,000 hogs had to be destroyed in order to eradicate an outbreak of African swine fever in 1985.

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DENMARK

Marshall H. Cohen

Denmark is a highly industrialized country with a population of 5.1 million and a labor force of 2.5 million. About 7 percent of the labor force is in agriculture. Economic vigor is highly dependant upon exports, which account for about a third of GDP. Industrial exports surpassed agricultural exports for the first time in 1957. Many of the regulations of the CAP helped Denmark earn large net payments from the EC via export subsidies and guaranteed farm prices.

Denmark is a constitutional monarchy, whose head of state is Queen Margrethe II. Prime minister Paul Schulter (conservative) is the head of government (1987). Although Denmark is a small country with a GNP of only $50 billion, per capita income, near $10,000, ranks among the world's highest. An important aspect of Danish economic policy has been to maintain competitive export prices in industry and agriculture. Policy strategy has included use of wage guidelines, public spending restraint, and flexible monetary policies.

The Agricultural Sector

Although traditional cropping patterns still characterize Danish farms, some longrun changes have occurred. The decline in total agricultural area has been more gradual in Denmark than in many industrial countries. The integrity of rural Denmark since World War II has been retained despite rapid industrialization due to strict zoning regulations and regional industrial planning. Thus, agricultural area as a percentage of total land area, 67.7 percent in 1970-74, declined only moderately to 65.7 percent in 1985 (2.8 million hectares). This decline is significant in such a small country. The government forecasts a modest decline in total agricultural area for the balance of the 1980's of about 50,000 hectares, largely reflecting a decline in barley, and to a lesser extent, grassland area. A greater emphasis will be placed on other feeds such as wheat, peas, beans, and rapeseed whose area is forecast to rise by 1990. The near tripling of wheat area since 1970-74 to 342,000 hectares in 1985 reflects stronger EC support prices, the availability of export markets (albeit small by total EC standards), and greater use of wheat in certain animal rations. The rise in oilseed and pulse area is directly linked to EC supports along with Denmark's natural advantage for growing spring rapeseed varieties.

Milk production and dairy cows declined sharply from 1960-64 to 1970-72 due to relatively high EC tariffs which adversely affected Danish exports prior to EC membership and rising self-sufficiency in butter in Denmark's major export markets. Dairy cow numbers have decreased since membership occurred and will continue to decline as a result of the EC milk quotas. However, milk production rebounded during the 1973-1978 transition period, reflecting higher cow yields, duty-free access to EC markets, and subsidies applying to dairy products shipped to non-EC customers. Since 1978, production has been at a relatively high level, although year-to-year variation has largely been due to pasture conditions rather than EC prices.

The major commercial use of fluid milk has been for butter production. In recent years, about 40 percent of fluid milk was used to produce butter while a third of milk use was for cheese. Beef is primarily a byproduct of dairy herds (beef breeds are only 3 percent of total cattle).

Policy Goals

Long-range policy goals in Denmark have been strongly targeted toward export enhancement and market development. Since approximately two-thirds of the value of production is exported, export revenues are directly linked to farm income. Price policy in Denmark has historically reflected export objectives.

Danish trade policy had been relatively liberal prior to membership since

Denmark is a net importer of essential raw materials. There were nontariff barriers and or duties applying to competitive imports. The EC's external tariffs combined with its internal price policy replaced many of Denmark's trade barriers which were in effect prior to 1973, and resulted in a highly protected internal market.

Agricultural Programs

EC membership has resulted in Denmark's subjecting most national programs and goals to community-wide programs.

In addition, Danish programs exist for export promotion and marketing. An export promotion council coordinates government funds for export promotion. Agricultural marketing boards and commodity export boards as well as various product associations carry out extensive worldwide market promotion and development activities.

Agricultural Program Evaluation

Membership in the EC, a net benefit to Danish farmers, has also enhanced marketing opportunities for exporters. However, membership did not prevent a serious farm crisis. During 1973-83, real farm income fell sharply and record bankruptcies occurred as farm debt increased. EC price supports and increased productivity may have prevented a worse farm income situation. Danish market structure has not been significantly or directly affected by EC regulations. Some cooperative marketing organizations have broken away from parent groups, but this development is not related to EC membership.

At the farm level, EC policies (crushing subsidies) have provided direct and indirect incentives to expand area and output of rapeseed, a spring-grown low or zero erucic acid variety used increasingly as a soybean meal substitute. Other subsidies apply to field peas and beans.

EC membership has also been a catalyst toward greater specialization of production, particularly for livestock products. Duty-free access to EC markets resulted in more Danish exports of specialized animal and animal products, especially to West Germany and Italy.

An economic objective since membership has been that each farm be efficiently managed by one farm family. Denmark has succeeded in achieving this by increasing production efficiency via the choice of crops, use of rotations, drainage, irrigation (on sandy soils), and renovation of soil with heavy fertilizer applications. These efforts have been supported by national and EC price, income, and structural aids.

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FINLAND

Marshall H. Cohen

Finland's agriculture, accounting for about 4.5 percent of GDP domestic product and 10 percent of the labor force, has not grown as rapidly in recent years as other sectors. Slow growth in consumption and unprofitable agricultural export expansion were partly responsible. Post-war self-sufficiency levels have risen dramatically. Expensive surpluses of wheat and a wide variety of livestock products have resulted in costly export subsidies and the need for mandatory supply controls.

Finland is a republic, led by president Mauno Koivisto (social democrat), and is an associate member of the European Free Trade Association. Finland's economy, although relatively smaller than major industrial countries, has generated a per capita real gross domestic product of $11,750, compared with an average of $9,150 for West European nations. Rapid post-war growth has occurred in the manufacturing industries, especially metals, forest products, and chemicals, one of the fastest growing industries in Finland. Finland has a free market economy based on private ownership of the means of production. However, there are many state-owned mining, petroleum refining, chemical, forest, and engineering companies. The national airline, Finnair, the railways, and most electrical production companies are state controlled. Economic prospects have been improved by declining oil prices and relative success in price competitiveness. Current economic policy issues include the need to diversify the forest, shipbuilding, and metals industries, reduce unemployment, and maintain growth in merchandise exports.

Finnish agriculture is based on small, family-owned farms, averaging 12 hectares of arable land and 35 hectares of forest. Although farm units have declined rapidly since 1960, farm size remains rather small although structural policy for the 1980's aims at increasing farm size. Farms are highly specialized in one or two products. About half of Finland's farms are in dairy and/or grain. Only about 8 percent of farms specialize in pigs and 14 percent in poultry. Dairy farms are highly concentrated in eastern and northern Finland while grain production is concentrated on larger units in southern and western Finland. The major share of gross agricultural returns is derived from milk, followed by beef and pork. These items together account for about 75 percent of gross returns. Grain and other plant products account for about 13 percent and poultry and eggs 7 percent of gross agricultural returns.

The basic goals of agricultural policy are to develop farm income while holding consumer prices at a reasonable level, ensuring self-sufficiency in basic foodstuffs, developing the structure of agriculture, and maintaining the rural population. National security objectives are also linked to farm policy. The income goal is central to a wide variety of policies, including provisions for agricultural producer prices to be set twice yearly in connection to farm income negotiations. Extensive and expensive agricultural export subsidies are used to support farm income and for market development. Finland also extensively applies trade regulations to protect agriculture from competitive imports.

Finland's agricultural programs have recently focused on attempting to achieve a better balance in agriculture. Finland's tradition in using mandatory supply controls dates to 1969 when Finland implemented the first soil bank program in Western Europe in order to reduce grain area. Following contracts were again in force in 1984. A dual price system for milk came into effect in 1985. The government's long-term goal is to reduce dairy cows to 550,000 by 1990 from 628,000 in 1985. Production ceilings on milk deliveries are established for each dairy farm. The law sets quotas for all producers normally delivering over 30,000 liters of milk per year. Deliveries above quota are penalized by a reduction in price.

Agricultural prices in Finland are regulated under the farm incomes act, effective for a 3-year period. Prices are agreed following discussions between farmers and their organizations and the government. There are a wide range of other subsidies and income support practices under Finnish legislation, as is the case in all other Scandinavian countries.

Supply controls have dominated agricultural policy, resulting in slight reductions in surpluses. Further reductions, especially beef and milk, are planned. Finland's agricultural policy has succeeded in transforming agriculture since World War II to an efficient sector and reducing Finland's dependence on imports. Nevertheless, the support system has resulted in both relatively high food prices and export subsidies, the latter paid largely by the government.

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FRANCE

Gene Hasha

French agricultural policy objectives focus on farm incomes and the expansion of production and exports to benefit trade balances. The EC's CAP provides high prices for French agriculture through minimum import prices enforced by variable levies and intervention purchasing at guaranteed prices. Consumption and export subsidies dispose of surpluses. The CAP has maintained farm incomes and stimulated production, but with high consumer prices and increasingly unacceptable budget costs.

France, an EC member, is a parliamentary democracy which also provides for a strong president elected for 7 years. France achieved very rapid economic growth in the postwar period accompanied by low unemployment. During the 1970's, inflation increased and, in the early 1980's, economic growth slowed and unemployment rose. Recent, economic growth has increased somewhat and inflation has been reduced, but high unemployment persists. France commonly has balance-of-payments problems and is strongly affected by changes in energy prices.

The Agricultural Sector

France's agricultural endowment is its greatest natural resource. France accounts for nearly a third of the agricultural land in the EC-10 and for over a fourth of the value of final agricultural production. France has over 1 million farms averaging about 27 hectares. Agriculture, forestry, and fishing employed 7.5 percent of the workforce in 1986 and accounted for 4.1 percent of GDP.

The principal products and exports of French agriculture are grains, oilseeds, meat, dairy products, and wine. Exports go mainly to other EC countries. The most important French agricultural imports are fruits, vegetables, and coffee. In 1986, French agricultural exports amounted to over $20 billion, 17 percent of total exports, while agricultural imports were $15.6 billion, 12 percent of total imports.

Policy Goals

The immediate government concerns in agriculture are dominated by farm incomes, which are affected principally through French influence on price supports and CAP programs.

Longer term French agricultural policy goals are to continue development of French agricultural production and exports. Expansion is needed to improve the balance of payments, reduce unemployment, and prevent depopulation of the countryside and the deterioration of many local rural economies. Smaller farmers in the southern and western regions represent two-thirds of all farmers and have strong political influence. Exports are critically important to French trade balances; agricultural exports have been called the "green petroleum" of France. France has clearly resented the large-scale imports of some agricultural products, particularly the nongrain feeds, which are seen to make EC production surplus or replace products that could be produced in France.

France believes that continued expansion of agriculture at the rapid rates of the past is still possible, even with lower real prices and reduced energy consumption. The principal problems are thought to be many farms too small to be viable, inadequate farmer training and skills, and insufficient farming support services. France is certain to resist strongly attempts to modify the CAP through the general imposition of production controls, particularly in crops, because of France's natural comparative advantage in production. France is likely to support more market-oriented policies associated with direct income assistance to disadvantaged farmers.

Agricultural Programs

Price supports and some structural improvement programs are provided for French agriculture by the CAP. France also affects farm incomes through tax concessions, subsidized credit, and social security programs.

French national expenditures on agriculture, excluding social security programs and tax concessions, were over 2.7 billion ECU in 1980, among the highest in the EC. Social security programs account for the major share of these expenditures. Value-added tax concessions provided to farmers amounted to about 3 percent of gross value added in 1980.

Several institutions act to encourage expansion of agricultural production and exports, particularly through structural reform and collective organizations. The massive Credit Agricole is a state bank, providing subsidized loans to special borrowers: new farmers, cooperatives, or farmers pursuing approved modernization programs. The organizations interprofessionnelles link farmers with processors and marketing groups and have the power to collect levies and to fund certain expansion programs. They often have significant regulatory functions. The Societes d'Amenagement Foncier et d'Etablissement Rural (SAFER) facilitate and control the agricultural land market, buying available land with a right of pre-emption and reselling it to enlarge medium-sized farms.

The Societe pour l'Expansion des Ventes de Produits Agricoles et Alimentaires (SOPEXA) promotes agricultural exports. The Compagnie Francaise d'Assurance pour le Commerce Exterieur (COFACE) insures export sales of all French products against defaults. A substantial portion of French grain exports are guaranteed by COFACE. Some insurance for exporters against unfavorable exchange rate movements also is provided. France has made some long-term agreements to enhance exports and has encouraged the EC to pursue similar arrangements.

Agricultural Program Evaluation

High and stable prices have provided effective producer incentives and, combined with national investment policies, have fostered rapid development of French agriculture. Agricultural production and exports have increased rapidly. France blames intensive farming outside of France for the surpluses that plague EC agricultural policy, especially of dairy products.

The structure of French agriculture has improved. Agricultural population has been greatly reduced and average farm size increased. Twenty-two percent of French farms exceed 40 hectares and account for about two-thirds of total farm sales. However, over half of French farms are still less than 20 hectares and produce only 14 percent of output.

Prices well above world prices indicate that considerable resources oriented to agriculture could have been used more efficiently in nonagricultural pursuits. French consumers also have paid higher food prices under the CAP and EC budget costs and French contributions to them have increased significantly.

Until the mid-1970's, the CAP system of high prices readily achieved politically acceptable farm incomes despite small farms. Thereafter, growth in real French farm incomes has failed to keep pace with nonfarm incomes. General recession has intensified farm income problems as alternative employment has declined. Nonetheless, without the CAP, agricultural incomes in the EC would have declined precipitously over the past two decades, or the exodus from agriculture would have been much larger.

GREECE

Peter S. Liapis

Greece returned to democratic rule in 1974. Like most other EC members, it has a parliamentary form of government. Agriculture is a more significant component of the Greek economy than of most EC economies, comprising almost 17 percent of GDP and 29 percent of the civilian workforce. The Greek economy is not as developed as the economies of the other EC countries and has been suffering from excessive inflationary pressures. In 1984, per capita GDP was 43 percent below the EC average while the GDP deflator in 1985 was 17.1 percent, second highest behind Portugal among EC countries. Greece is doing better than average in keeping its workforce employed. The 1985 unemployment rate was 7.8 percent compared with the EC average of 10.6 percent.

Agriculture is characterized by small fragmented holdings, an aging self-employed labor force, and the production of Mediterranean products such as olive oil, fresh fruits and vegetables, wine, and tobacco. Northern products such as cereals, milk, beef, and veal contributed 26 percent to total agricultural production in 1985. The small-scale nature and the degree of fragmentation is illustrated by the fact that 68 percent of all holdings were between 1 to 5 hectares while only 0.5 percent of the holdings were more than 50 hectares. Average utilized agricultural area per holding was 4.1 hectare in 1983, compared with the EC average of 12.7. Furthermore, 1977 data indicate that the average holding consisted of more than seven plots. The agricultural labor force is predominantly self employed (less than 4 percent are paid workers), older (32 percent were over 55 years of age), and dependent upon agriculture for their income (60.5 percent had no other gainful employment). Greece currently has a positive balance of trade of food and agricultural products. Imports of farm commodities account for almost 11 percent of all imports, while farm exports account for almost 30 percent of total exports (1985). Since joining the EC, however, Greece's net trade with other EC countries has deteriorated as a result of Greek imports of livestock products. Greece now has a net farm trade deficit with the other EC members.

Agricultural policy is principally governed by the CAP. In addition, the major policy objectives in the 5-year plan (1983-87) include: strengthened farmer cooperatives, restructured production toward crops with higher demand especially livestock, reorganization of food processing activities, improved infrastructure, and expanded irrigation.

The government provides investment aids to cooperatives and, to a lesser extent, private entities. Aids include interest rate subsidies, use of harvesting equipment, and low- or no-cost fertilizer and agricultural chemicals. To reduce the mounting overall trade deficit, Greece in 1985, with EC approval, instituted a policy requiring import deposits of between 40-80 percent of cif price on many agricultural and other products.

Agricultural production has increased impressively in Greece. Labor productivity increased as much as 10 percent per year between 1971 and 1977. Self-sufficiency increased in most products except total meat. Agricultural incomes (net value added per person employed) also expanded considerably. Joining the EC has bolstered farm incomes because of the relatively high guaranteed producer prices and EC budget outlays. In 1983, Greece received net payments of 1 billion ECU from the EC budget. One of the major concerns in Greece is the trade deficit in agricultural products with the EC. Greece hopes to correct the imbalance by improving infrastructure and concentrating on producing products where it has comparative advantage, such as out-of-season fruits and vegetables.

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IRELAND

Marshall H. Cohen

The Irish Republic has been a sovereign democratic republic since achieving independence from Great Britain in 1919. Agriculture accounts for a relatively high 10 percent of GDP and employs nearly 20 percent of the workforce. The economy is dominated by the food processing, textile, brewing, and machinery industries. The unemployment rate is relatively high at 17 percent, second only to Spain in the EC.

Beef cattle and dairy account for about two-thirds of gross agricultural income. Extensive grass grazing areas also support sheep production. Ireland enjoys mild winters and adequate rainfall to produce good pastures for extended grazing during spring, summer, and autumn. Movement of young stock to grazing and fattening areas are a major part of grassland farming. Hog production is generally a small-scale operation on multiple output farms and is based on domestic feed barley.

Membership in the EC in 1973 was one of Irelands' most significant post-war developments; easing many problems of underdevelopment in agriculture and low farm income. One measure of agriculture's participation in the overall economy is its relatively high contribution to export earnings. Over half the value produced is exported, largely consisting of cattle and beef. An increasing percentage of agricultural output is processed before export. Although Irish agriculture has embraced EC objectives, agricultural development and farm incomes have failed to reach average EC levels. The CAP has transferred a relatively high percentage of funds to Ireland for social and regional agricultural development, but only a small percentage of projects has been completed. Ireland faces a difficult task of improving productivity in the farm sector in order to boost real farm income, particularly since Ireland's topography and the high costs of investment have encouraged keeping traditional farm structures and practices.

Ireland's agriculture qualifies for a relatively large percentage of the EC's "less favored area" regional aid. These regions are either in hill areas or regions with a natural handicap or threatened by depopulation. Despite EC market support, there has been a decline in agriculture's contribution to output. High-inflation during the past decade has also eroded some of the price gains to farmers from EC membership. Lack of diversification, farmer indebtedness, and an outdated infrastructure have inhibited agricultural development.

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ITALY

Gene Hasha

The foremost concerns of Italian agricultural policy are the maintenance of acceptable farm incomes despite relatively small farms and the expansion of production to reduce a burdensome agricultural trade deficit. The EC's CAP provides high prices for Italian agriculture through minimum import prices enforced by variable levies and intervention purchasing at guaranteed prices. Consumption and export subsidies dispose of surpluses. The CAP has maintained farm incomes and rural employment and encouraged production but with high consumer prices and increasingly unacceptable budget costs and international conflicts.

Italy, a parliamentary democracy and an EC member, has experienced frequent changes of coalition governments in recent years. Rapid economic growth was achieved in the postwar period accompanied by low unemployment. During the 1970's, inflation increased and, in the early 1980's, economic growth slowed significantly and unemployment rose sharply. Economic growth has increased somewhat since then and inflation has been reduced, but unemployment remains high. Italy commonly has balance-of-payments problems and is strongly affected by changes in energy prices.

The Agricultural Sector

Italy has more people working in agriculture, 2.3 million in 1985, than any other EC country. Italian agriculture also contains many very small farms; the average farm was only 5.6 hectares in 1983. Agriculture, forestry, and fishing employed 11.2 percent of the workforce in 1985, but contributed only 6.1 percent of GDP.

Italian agriculture is characterized by a dichotomy between its northern agriculture which produces grain, sugar beets, meat, and dairy products, and its southern agriculture which specializes in fruits, vegetables, olive oil, wine, and durum wheat. Agriculture in southern Italy also is relatively poor and incomes are lower. The duality in Italian agriculture is a microcosm of the dichotomy between Mediterranean and northern agriculture in the EC.

The principal products of Italian agriculture are fruit, vegetables, milk, grain, beef, and wine. Italy's principal agricultural imports are meat and live cattle, grain, coffee, cheese, and oilseeds and meals. Principal agricultural exports are fresh and processed fruits, vegetables, and wine. In

1985, Italian agricultural imports were 28,900 billion lire, 16.7 percent of total imports. Agricultural exports were 11,300 billion lire, 7.6 percent of total exports.

Policy Goals

The immediate concerns of the government in agriculture are dominated by farm incomes, which are affected principally through Italian influence on price supports and programs of the CAP. Concerns for farm incomes in the mezzogiorno of southern Italy are particularly strong. In 1980, 24 percent of the labor force worked on farms in these underdeveloped areas.

Longer term agricultural policy goals are to continue development and modernization of Italian agriculture to increase production and reduce its agricultural trade deficit which places a heavy burden on the Italian balance of payments. The agricultural trade deficit accounted for three-fourths of the total Italian trade deficit in 1985.

The trade deficit affects Italy's orientation to the CAP. Italian imports consist mainly of northern products which receive high CAP price supports while Italian exports are primarily of Mediterranean products such as fruit, vegetables, and wine which receive relatively weaker CAP support. Italy is dedicated to obtaining increased CAP market supports for Mediterranean products and EC funding for programs to improve farm structures in the mezzogiorno. Italy supports high prices for northern products as well because they are considered necessary to increase Italian production and self-sufficiency.

Agricultural Programs

Price supports and some structural improvement programs are provided for Italian agriculture by the CAP. Italy also affects farm incomes through tax concessions, subsidized credit, and social security programs.

Italian national expenditure on agriculture has been estimated at 2.9 billion ECU in 1980, over 30 percent of total national government expenditure on agriculture in the EC-9 and the highest of any member country. Italian state governments also have significant agricultural support expenditures. Italian farmers receive reimbursement for value-added taxes paid on inputs. Undertaxation in Italy in 1979 has been estimated to have equaled 3.7 percent of farm income. Taxation of agriculture in Italy is among the lowest in the EC. Agricultural credit in Italy is provided only by institutions supervised by the government which provide considerable interest rate subsidies under a variety of special programs.

In 1986, Italy adopted a 5-year national agricultural plan introducing some stability into Italian agricultural policies which have been lacking due to the instability of coalition governments.

The Institute Commercio Estero (ICE) promotes Italian agricultural exports.

Agricultural Program Evaluation

High and stable CAP prices have provided effective producer incentives and, combined with national investment policies, have fostered rapid development of Italian agriculture. Agricultural production has increased rapidly and the structure of Italian agriculture has improved. Agricultural population has been greatly reduced and average farm size increased. Nonetheless, the formidable socioeconomic problems of the mezzogiorno remain and the agricultural trade deficit continues to hamper the Italian economy.

Of course, prices well above world prices indicate that considerable resources have been oriented to Italian agriculture that may have been more efficiently used in nonagricultural sectors. Italian consumers also have paid higher food prices under the CAP and EC budget costs and Italian contributions to them have been increased.

Until the mid-1970's, the CAP system of high prices readily achieved politically acceptable farm incomes despite small farms. Since the mid-1970's, growth in real Italian farm incomes has failed to keep pace with nonfarm incomes. Recession has intensified farm income problems as alternative employment has declined. Nonetheless, without the CAP, agricultural incomes in Italy would have declined precipitously over the past two decades, or the exodus from agriculture would have been much larger.

LUXEMBOURG

Stephen W. Hiemstra

Luxembourg is a constitutional, hereditary monarchy. The sovereign is given broad powers to participate in legislative, executive, and judicial decisions by the constitution. The current president of the government is Pierre Werner.

Luxembourg has strong economic ties to Belgium. The two countries formed a customs union in 1921 which has later expanded to include The Netherlands, an arrangement known as the Benelux Economic Union. The Belgian Franc is traded freely in Luxembourg on par with the Luxembourg franc.

Luxembourg has traditionally had a strong steel industry. Since the 1973 oil crisis, however, economic policy has stressed diversification away from steel. In the 1980's, transition measures have been financed by taxation so inflation has been low and the government budget has remained fiscally sound. The expansion of the Eurobond market since the 1970's has led to the emergence of a strong banking industry.

Luxembourg has a population of 364,600 and an area of 998 square miles. In 1984, the GNP was $10,921 and the unemployment rate was 1.8 percent. Consumer prices rose an average of 8.4 percent from 1979 to 1983.

Luxembourg's agriculture is focused on dairy production with beef, grain, and wine growing of lesser importance. Luxembourg's trade with the United States is included with that of Belgium.

Suggested Readings

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THE NETHERLANDS

Stephen W. Hiemstra

The Netherlands has a constitutional and hereditary monarchy. Executive power is vested in the crown while legislative powers are shared between the crown and the parliament. In the last election May 1986, a center-right coalition of the Christian democrats and the liberal parties was re-elected. Prime minister Ruud Lubbers heads the government. Streamlining the large public sector is an important objective of the government.

The Dutch have traditionally been a nation of processors and traders. Skilled labor, North Sea oil, and a location at the estuary of the Rhine river are among the principal national assets. In 1983, the Dutch were net exporters of chemical products, agricultural and food products, transportation and electrical equipment, metals, and mineral fuels.

The national currency is the guilder, also known as the Dutch florin. The Netherlands participates in the European monetary system and links its currency closely to the West German mark through adjusting its interest rate to maintain parity. The openness of the Dutch economy and its position as an energy exporter make the economy sensitive to changes in the global economy and energy prices.

The Netherlands has a population of 14 million and, with a land area of only 15,892,000 square miles, has the highest population density of any country in Europe. The per capita GDP was $8,534 in 1984 with a growth rate of 1.7 percent. Inflation averaged 4.2 percent, as measured by the CPI, while unemployment averaged 12.1 percent from 1981 to 1985.

The Netherlands has a highly technical agriculture closely linked to advanced agribusiness and food processing industries. The efficiency of Dutch agriculture is attributable to an historical reliance on trade, to a well-developed agricultural education, research, and extension system, and to an extensive private network of commodity boards which organize all stages of commodity production and marketing.

The Netherlands is a net exporter of agricultural and food products. In 1985, agricultural exports accounted for 23 percent of all Dutch exports and contributed to an overall trade surplus. The Dutch specialize in production and export of high-valued agricultural products. U.S. imports from the Netherlands typically include beer, cut flowers, nursery products, cheese, and pork products.

The Netherlands was the United States' third largest agricultural export market in 1984/85, behind Japan and the Soviet Union. Oilseeds, feeds and fodders, protein meal, and coarse grains were the top U.S. exports.

The importance of animal feeds in U.S. agricultural exports to the Netherlands is attributable to the key role played by the livestock industries in Dutch agriculture and to the production of manufactured feed for re-export. The Dutch maintain a competitive edge in livestock production by making extensive use of cereal substitutes and oilseed meals in livestock feeding.

The Netherlands is a founding member of the EC and a participant in the CAP. Concerns about agricultural prices and farm incomes are normally addressed in the forum provided by the EC.

The increasing self-sufficiency of many EC members in traditional agricultural products threatens Dutch agriculture by displacing exports, motivating restrictions on trade (such as production quotas), and encouraging increasing investment in production of the high-valued products on which the Dutch agriculture has long been based. Since EC member states are among the Netherlands' best agricultural customers, the primary Dutch objectives in CAP discussions are to maintain free trade within the EC and to oppose measures threatening free trade. For example, the Dutch opposed measures promoted by the French which would have restricted exports from Spain after joining the EC.

In broader international forums, such as the GATT, the Netherlands typically advocates free trade, provided that allowances are made for the EC.

In view of Holland's high population density and highly technical agriculture, environmental concerns receive a lot of attention. The best known example of this concern is the restriction recently placed on pig production because no adequate place for the manure could be found.

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NORWAY

Marshall H. Cohen

Norway is composed largely of mountainous, unproductive land, with agricultural area accounting for only about 2.9 percent of land area. Norwegian agriculture is characterized by small family-owned holdings averaging less than 10 hectares. Agriculture's contribution to GNP has remained relatively constant in recent years and was 2.3 percent in 1986. Despite post-war increases in self-sufficiency to about 55 percent, Norway is a net importer of agricultural goods.

Norway is a highly developed, wealthy industrial country, with per capita income at about $11,000. The government is a hereditary constitutional monarchy, with King Olav V as head of state. The prime minister is Gro Harlem Brundtland (1987). The economy is largely based on pulp and paper, shipbuilding, engineering, metals, chemicals, oil, and gas. In recent years, petroleum output from oil deposits in the North Sea has been a significant source of national revenue.

Norway has enjoyed a period of strong growth and low unemployment during the 1980's. Despite economic recovery, inflation has declined considerably since 1980, contrary to previous periods of economic expansion. Growth is expected to continue through the balance of the 1980's with stronger investment demand and increases in capital spending. Two vulnerable aspects of the economy are that revenues from the oil sector are linked to international oil prices and labor is likely to press for higher wages. Many sectors in the Norwegian economy are subsidized. The agricultural sector dominates, receiving 60 percent of total subsidy expenditures. Norway's longrun economic policy calls for reduced government spending, a review of the tax system, changes in the wage formation system, and more vigorous supply-side policies.

Norway, Europe's northernmost country, benefits from the warm currents of the Gulf Stream which make agriculture possible. The climate permits cultivation of temperate zone farm products: grains, deciduous fruits, and a wide variety of vegetables and berries. Animal husbandry dominates agriculture, accounting for about 70 percent of total farm income. Animal husbandry is largely in the northern and western areas where climate permits grazing. Income is largely from crops in southern Norway. Despite Norway's location, crop yields are among the highest in Western Europe due to large consumption of commercial fertilizers.

Norwegian agricultural policy has traditionally included three objectives: an income target, a production target, and regional policy objectives. The income target indicates that net income from efficient farmholdings should be on a par with incomes in nonfarm industries. There are income incentives based on farms of different sizes in various regions. The production target is designed to fill domestic requirements for most livestock and dairy products and expand production of field crops such as grains, vegetables, and fodder which could substitute for imported concentrates. There are comprehensive national policies designed to encourage regional development. Regional policy objectives are to encourage farmers to remain in agriculture in disadvantaged areas and expand use of marginal land.

Norway was the first country in Western Europe to institute a nutrition and food policy (1975) in order to encourage healthy dietary habits such as reducing per capita consumption of saturated fats, while increasing consumption of domestically produced foods such as grains and potatoes.

To reduce milk surpluses, Norway has had a quota system in effect since 1977. Under the current program, full prices are awarded for milk deliveries within the quota. Under the basic quota formula, only 25 percent of price is given for deliveries above the quota, although many technical adjustments to prices are possible under the complex system.

Norwegian agricultural policy has succeeded in providing farmers with very high support prices and, for strategic reasons, maintaining a population in remote regions. Thus, there has been a quasi-defense motive in Norway's agricultural and regional planning. Norwegian price policy, negotiated with 2-year agricultural agreements which set product support prices, has compensated farmers for changes in production costs cused by inflation. However, Norway's agricultural policy of heavy subsidization and protection has been seriously evaluated in recent years and future policy is likely to attempt to maintain subsidies at levels of inflation. Norway's pioneer nutrition and food policy has been politically difficult to fully implement. However, as a result of its effect on consumer education and with a considerable degree of voluntary cooperation among producers, consumer diets have increasingly reflected the guidelines of the policy and, consequently, resulted in a reduction in major diseases.

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PORTUGAL

Ruth Elleson

Portugal became a member of the EC in 1986. During a 10-year transition period, the agricultural sector will undergo structural improvements largely financed by the EC. Yields and self-sufficiency rates, far below those of other member countries, have necessitated imports of about 60 percent of the country's food needs. The main supplier has been the United States.

Portugal's political and economic systems were radically transformed by the 1974-75 coup that ousted the existing right-wing dictatorship and set up a democratic form of government. Political unrest had grown out of the country's poverty and low per capita income, the lowest in Western Europe. For many years, government policies favored the privileged few while ignoring the welfare of the majority. The new government introduced measures to correct the inequitable distribution of income and wealth, nationalized banks, power companies, and other large industrial organizations, redistributed income through the establishment of minimum wage levels, legalized trade unions, and introduced labor legislation. Agricultural land reform was carried out in the central and southern parts of the country where landholdings were large. Despite these reforms, the economy remained weak for almost a decade following the coup. Agricultural output actually declined. Inadequate investment capital combined with political instability (16 governments have fallen since the 1974 coup) had made it impossible for the country to undertake the structural reforms necessary for accession to the EC.

Portugal's agricultural sector accounts for about 9 percent of the GDP and employs about 23 percent of the labor force. The underdevelopment of agriculture relative to other European countries is quite marked. The sector faces several major constraints, namely a small agricultural land base, with half the land consisting of poor soils, a checkered farm size structure (especially the minifundia in the north and center areas), low capitalization, below optimum use of inputs such as fertilizers and irrigation, and outmoded farming practices. Since there was little experience upon which to build technical and financial services, these services are still inadequate.

Yields of all major food crops remain the lowest in the Wester. Europe. About 60 percent of the country's food needs must be imported. In 1985, grain and oilseed imports represented 45 percent of the value of total agricultural imports, while raw cotton, the major imported fiber, represented about 20 percent. Wines, cork, and tomato paste are the principal agricultural exports, accounting for about 95 percent of total farm exports. The United States is the dominant supplier of grains and oilseeds.

The policy of the government has been to increase self-sufficiency and develop the country's comparative advantage in wines, fruits, vegetables, wood products, and cork. Prior to accession, the government operated a complex system of support prices and costly subsidies that had little effect on output. Since accession, Portugal's policy goals and agricultural programs have been aligned with those of the EC.

The process of adjusting to EC regulations, prices, and customs duties began immediately. Advance licenses for most agricultural imports ceased to be a requirement and the value-added tax came into effect. Except for oilseeds and vegetables oils, the incidence of the tax on most agricultural products is negligible. Full integration into the EC's price and marketing systems, however, will not take place until the termination of a 10-year transition period ending in 1995. During this period, much needed structural improvements will be made to raise Portugal's low level of productivity closer to EC levels. During the first 5-year period, the country will create infrastructure, marketing systems, farmer organizations, and other institutions now lacking but needed before adapting to CAP rules.

Suggested Reading

U.S. Department of Agriculture, Foreign Agricultural Service. Portugal: Agricultural Situation. various annual issues.

SPAIN

Gene Hasha

The foremost concerns of Spanish agricultural policy are farm incomes and the modernization and restructuring of agricultural production. The EC's CAP provides high prices for Spanish agriculture through minimum import prices enforced by variable levies and intervention purchasing at guaranteed prices. Consumption and export subsidies dispose of surpluses. Spain is likely to require a greater emphasis on general economic development in rural ares than the CAP currently provides.

Spain, a constitutional monarchy with a parliamentary form of government, became an EC member in 1986. Spain achieved very rapid economic growth in the postwar period accompanied by low unemployment. During the 1970's, inflation increased, and, in the early 1980's, economic growth slowed significantly and unemployment rose sharply. Economic growth has recently increased and inflation has been reduced, but unemployment remains high. Spain commonly has balance-of-payments problems and is strongly affected by changes in energy prices.

Spain has over 27 million hectares of agricultural land, more than any EC country except France. Much of Spain's land is dry and of low productivity, however, and irrigation is of paramount importance. About 2.8 million hectares are irrigated, representing 17 percent of total cropland which accounts for 60 percent of the total value of agricultural output. Irrigation and Spain's warm climate give Spain a strong comparative advantage in the production of fruits and vegetables.

In 1985, agriculture, forestry, and fishing employed 16.9 percent of the workforce in Spain, but accounted for only 5.7 percent of GDP. The average Spanish farm was only 12.9 hectares in 1983, but land is very unevenly distributed. Only 1.3 percent of landholdings are over 200 hectares, but they comprise over 50 percent of agricultural land. At the other end of the spectrum, 60 percent of holdings are less than 5 hectares and account for less than 6 percent of agricultural land. Large farms have relied heavily on hired labor. Farm labor problems have been serious, especially in southern Spain where farm labor unions are militant. Spain lacks the organized producer groups that play an important role in the operation of the CAP.

The principal products of Spanish agriculture are fruits and vegetables, grain, milk, beef, pigmeat, and poultry and eggs. The Mediterranean products--wine, olive oil, and durum wheat--also are important, particularly in less-developed regions. Spain's agricultural imports amounted to $4.9 billion in 1986. The principal imported products were coffee, soybeans, hides and skins, forest products, and tobacco. Agricultural exports amounted to $4.3 billion in 1986. Citrus, fresh and processed fruits and vegetables, and wine were the principal commodities.

The immediate agricultural concerns are farm income, including that of hired labor, which can be affected principally through Spanish influence on CAP price supports and programs.

Longer term Spanish agricultural policy goals are to modernize and improve the structure of Spanish agriculture to increase production and increase incomes. Spanish agriculture is less developed, structurally and technically, than in most EC countries and development policy is of primary importance. Spain is likely to seek increased funding for structural adjustment and other programs for general economic development of rural areas. Spain is certain to support increased CAP market supports for Mediterranean products.

Price supports and some structural improvement programs are provided for Spanish agriculture by the CAP. Spain continues to provide subsidies to farmers for gas and oil, agricultural insurance, cattle slaughter, and the purchase of herbicides and certified grain seeds. These subsidies must be phased out by 1991, however. Spain also provides funding for special loans to farmers.

Spain began to adapt its agricultural policy mechanisms to resemble those of the EC long before becoming a member. The Fondo de Ordination y Regulation de Precios y Productos Agrarios (FORPPA) was an autonomous agency empowered to propose, develop, and administer Spanish agricultural policy in a manner compatible with the CAP with the prospect of eventual EC membership. FORPPA now implements the CAP within Spain. Over time, Spain undoubtedly will adapt its national agricultural programs to complement those of the EC.

The land reform act of 1979 allows the government to force more productive use of idle or underutilized land through imposition of taxes or expropriation. Potentially large adjustments in farm structures could result.

SWEDEN

Marshall H. Cohen

Sweden's agriculture is highly dependent on dairy products and meat, together accounting for about 75 percent of total sales. Sweden's grain production has been highly productive, with exports of around 1 million tons a year. A net exporter of rapeseed oil, dairy products, beef, pork, and grain, Sweden's self-sufficiency in farm products is over 90 percent.

Sweden is a highly industrialized modern economy whose major industries are iron and steel, precision equipment, wood pulp and paper products, chemicals, processed foods, and motor vehicles. Since the turn of the century, Sweden has grown from relative poverty to one of the world's wealthiest countries, generating over $100 billion in 1985. Agriculture (including forestry and fishing) contributes less than 5 percent to GNP. Sweden is a constitutional monarchy. The head of government is prime minister Ingvar Carlson (social democrat).

Despite Sweden's northern location, agriculture is a highly productive enterprise with both grain and milk yields ranking among the world's highest. Sweden normally produces large exportable quantities of wheat (500,000-1,000,000 tons), dairy, pork, and, to a lesser extent, oilseeds. Approximately 75 percent of Swedish output is marketed by the cooperatives. Cattle numbers have continued to decline since the 1960's, but higher average milk yields have resulted in surplus milk. Sweden has succeeded in reducing erucid acid in rapeseed, producing a more marketable product since cardiac disorders had been correlated with erucid acid.

One of the chief principles of Swedish agricultural policy has been to keep farmers' incomes in line with those of the rest of society. This goal has resulted in both relatively high levels of protection from imports of grains and livestock products as well as necessitating expensive price support programs. In addition, the policy has succeeded in protecting the integrity of agriculture by strictly controlling farmland sales and by preventing the most efficient farmland from shifting to nonfarm use. In some remote areas, especially the northern part of Sweden, special regional policies such as higher prices for milk, beef, and pork have been used to discourage depopulation. Although Swedish agriculture has not been export-oriented by design (the longrun aim is to keep production at a level that safeguards the food supply and provides for emergency stocks), a combination of income and price incentives and technical skill has produced large exportable surpluses of farm products in recent years. Swedish policymakers are attempting to reduce surpluses of livestock products and to restore greater balance to agriculture.

The evolution of agricultural programs since 1947 has reflected internal economic and social developments. Priorities have shifted from early programs to increase self-sufficiency to recent goals to curb a spiral of growing costs for surplus disposal, and bringing agriculture into a better balance. Although income comparability between sectors is still a social target, programs to reduce surpluses have a greater priority. In the important dairy sector, continuing surpluses resulted in a two-price system for milk deliveries in recent years with reduced prices granted for above-quota deliveries. The government will continue to provide price subsidies to maintain incomes to disadvantaged northern farmers.

In the long run, Swedish farm programs have succeeded in sharply increasing self-sufficiency, farm income, and an efficient agricultural sector. However, the high costs of these successes via very high guaranteed support prices protected by strong border levies and export subsidies have resulted in costly surpluses. These surpluses are likely to recede in the next decade, but at greater costs to farmers.

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SWITZERLAND

Suzanne Dash

Switzerland is a confederation governed by a coalition of four political parties for over 25 years. Its economy is prosperous and stable. Real GDP expanded by 2.6 percent in 1986 and has averaged over 2 percent per year in the 1980's. The labor market is approximately at full employment. Switzerland is a net importer of goods but has a positive current account because of its international banking activities.

Switzerland is a net importer of agricultural products, much of which are high-valued products. Switzerland's agricultural policy encourages self-sufficiency to the extent possible. Dairy production is the major agricultural industry and high price supports have produced surpluses. The main agricultural export is cheese. Switzerland also exports a substantial quantity of products processed from agricultural commodities.

Only a fourth of Switzerland's 1.6 million acres is cultivated. Forests and pastures account for an additional half. Only 6.6 percent of the population work in the agricultural sector, but 42 percent (1980) live in nonurban areas. Many farms are operated on a part-time basis.

The largest farm sector by far, is dairy production. Milk produced in 1986 was valued at $1.6 billion, or a third of total agricultural production value. Beef and grape (for wine) production accounted for another quarter. Switzerland also produces significant quantities of pork, grains (mostly wheat and barley), fruits, vegetables, and poultry.

Swiss agricultural exports are minimal. One of the few items that the Swiss produce in surplus is cheese, the main export. Switzerland exports some products processed from agricultural commodities, such as textiles, tobacco, and chocolate products, but the raw commodities are mostly imported. Imports of agricultural products totaled $2.7 billion in 1984. The main commodities imported are fruits, vegetables, coffee, tea, spices, and cereals. The EC is the main supplier.

The foundation for agricultural policy is written in the Swiss constitution. There are two basic objectives: preservation of farmers through a viable agriculture and provisions to ensure food supplies (stockpiling). Supporting the price of commodities and restricting competing imports have been the basic tools used to achieve these goals. Price supports work to both encourage production and support farm income. Revenue from import levies cover a third of the cost of the country's agriculture program. Through measures such as quotas, variable levies, import licenses, and import calendars, Switzerland can strictly control its imports. Depending on domestic supply conditions, import controls for specific products may be changed within the marketing year to adjust to current situations. Items that do not compete with commodities produced domestically are imported more freely. Switzerland is exempt from certain GATT regulations for import quotas.

Switzerland is self-sufficient in dairy, bread-quality wheat, beef, and certain fruits and types of wines. Price and income support for the farm sector costs an estimated $860 million in 1986. Half went to the dairy industry for milk processing subsidies, payments to dairy farmers for not producing, and the cost of marketing surplus products. Without the existing milk quotas, the supports payments would be even higher.

In 1986, over a fourth of the bread-quality grains produced were declared surplus and used for feed. Switzerland does not produce enough feed grain for its livestock industry and imported 900,000 metric tons in 1986. While Switzerland is not expected to become self-sufficient in feed grains, the government is trying to encourage more production of feed grains and less of food grains by changing the relative price supports of the two.

While historically maintaining strong support for the agricultural sector, Swiss voters in a recent referendum rejected an increase in the sugar support price approved by the government. It is not clear that this is a trend, but the action will likely influence future government proposals.

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U.S. Department of Agriculture, Foreign Agricultural Service. "Focus on Swiss Agriculture." Attache Report No. S73034, October 1983.

THE UNITED KINGDOM

Gene Hasha

The EC's CAP provides high prices for agriculture through minimum import prices enforced by variable levies and intervention purchasing at guaranteed prices. Consumption and export subsidies dispose of surpluses. British farms are by far the largest in the EC and are relatively efficient. The United Kingdom generally has resisted the high consumer prices, increasingly unacceptable budget costs, and international conflicts of the CAP, but has attempted to increase agricultural self-sufficiency to maximize gains from the EC.

The UK achieved rapid economic growth accompanied by low unemployment in the postwar period. During the 1970's, inflation increased seriously and, after 1981, economic growth slowed significantly and unemployment rose sharply.

Economic growth has increased recently and inflation has been reduced, but high unemployment persists.

The Agricultural Sector

The UK is a relatively small country and much of the land is hilly. The UK has about 262,000 farms averaging about 65 hectares, by far the largest average among EC countries. Agriculture, forestry, and fishing employed 2.6 percent of the workforce in 1986 and accounted for 2.2 percent of GDP.

The principal products of British agriculture are grains, meat, dairy products, poultry, and eggs. The most important British agricultural imports are fruits, vegetables, tropical products, meat, wine, and grains. In 1986, British agricultural exports amounted to 7 percent of total exports, while agricultural imports were 12.5 percent of total imports.

Policy Goals

British agricultural policy objectives are strongly conditioned by its agricultural history, which differs strongly from that of the continent. Before the 1930's, as a dominant exporter of manufactures with formidable naval power to assure imported food supplies, Britain pursued a cheap food policy. British food producers received no special preference and British agriculture developed in a competitive environment. As a consequence, British agriculture is a very small part of the total economy, and farms are relatively large and efficient by EC standards. Cooperatives are far less important than on the continent.

The socioeconomic concerns for small farmers which dominate much agricultural policy on the continent are almost entirely lacking. The interests of British agriculture are those of large farmers, and those interests have far less political influence than in any continental country. The UK is likely to oppose any CAP reforms including special treatment for marginal farmers at EC expense.

Because British farms are relatively large and efficient, price support levels required politically by continental countries are generally too high for British governments. For most of the time since Britain joined the EC in 1973, British governments have resisted increases in CAP support prices and taken advantage of the EC agrimonetary system and the usually weak pound to maintain agricultural prices below common EC levels.

After joining the EC, Britain found itself the second largest net contributor to the EC budget. Large payments to the EC resulted from large food imports, while the relatively small British agricultural sector received much less in EC expenditures. In the early 1980's, the British net contribution to the EC emerged as the preeminent EC issue in the UK. Contribution rebates have been arranged, and they remain inviolable to the UK. Rebates have reduced British ardor for controlling EC budget costs, but the UK remains the major proponent of budget discipline along with West Germany.

Although the CAP was originally seen as an alien and very expensive system unsuited to British political needs and is still commonly described as such, British governments have become more comfortable with it. The CAP has allowed continuation of a British policy of agricultural expansion which began before EC membership. In the postwar period, the UK sought to increase agricultural production while continuing imports at cheap world prices by providing deficiency payments to insure a higher fixed price for farmers. Since the mid-1970's, the UK has attempted to encourage British production, reduce imports, and raise national self-sufficiency to limit EC budget contributions and maximize its benefits and minimize its losses from the EC.

Agricultural Programs

Price supports and some structural improvement programs are provided for British agriculture by the CAP.

British national expenditures on agriculture, excluding social security programs and tax concessions, were over 1.1 billion ECU in 1980, by far the least of the large EC countries. Social security programs account for the major share of these expenditures. Farms are exempt from local property taxes and receive a refund for value-added taxes paid on inputs. Little subsidized credit is available for British farmers.

Milk marketing boards are the sole buyers from producers and maintain considerable control over milk production, wholesale trade, processing, and retail marketing. The milk marketing boards were accepted by the EC as approximations of continental cooperatives and because they were thought to encourage the consumption of liquid milk.

The "Food from Britain" is a central marketing agency to promote domestic and export sales. The Department of Trade and Industry provides export credit guarantees.

Agricultural Program Evaluation

The UK played no role in the establishment of the basic CAP system in the 1960's and has struggled for 15 years to control increases in CAP support prices and costs. It is widely accepted that the CAP is not well suited to British agricultural policy needs, but is the price of membership in the EC.

Prices well above world prices indicate that considerable resources have been oriented to British agriculture that may have been more efficiently used elsewhere. British consumers also have paid higher food prices under the CAP and EC budget costs and British contributions to them have increased significantly.

High and stable prices have provided effective producer incentives and have fostered rapid development of British agriculture. Agricultural production and exports have increased significantly.

WEST GERMANY

Gene Hasha

West Germany is a federal republic with a parliamentary form of government. West Germany achieved very rapid economic growth accompanied by very low unemployment and inflation in the postwar period. In the late 1970's, inflation increased and economic growth slowed. Unemployment also rose. Economic growth has recently increased and inflation has been reduced to very low levels. But, unemployment remains relatively high.

The foremost objective of West German agricultural policy is the generation of politically acceptable farm incomes despite relatively small farms. The EC's CAP provides high prices for West German agriculture through minimum import prices enforced by variable levies and intervention purchasing at guaranteed prices. Consumption and export subsidies dispose of surpluses. The CAP has maintained farm incomes and rural employment but with high consumer prices and increasingly unacceptable budget costs and international conflicts.

The Agricultural Sector

West German farms are relatively small, averaging only 15.3 hectares in 1980. West Germany has a greater percentage of part-time farmers than any other EC country. Agriculture, forestry, and fishing employed 5.6 percent of the workforce in 1985, but accounted for only 2 percent of GDP.

Principal agricultural products are grains, milk, beef, and pigmeat. Its agricultural exports are dominated by processed food products. Major West German agricultural imports include fruits, vegetables, and tropical products, and oilseeds and products. In 1986, German agricultural exports were $13.2 billion, only 5 percent of total exports. Agricultural imports were $26.7 billion, 14 percent of total imports. West Germany remains a major net agricultural importer but has become at least self-sufficient in total grains, sugar, beef, and dairy products.

Policy Goals

The predominant agricultural policy concern has been to maintain politically acceptable farm incomes. Associated with income concerns is the desire to conserve the countryside and maintain the family farm structure. The maintenance of high and stable prices as the appropriate means for achieving farm income objectives and maintaining the farm population was widely accepted in West Germany long before the advent of the EC. West German farm income objectives are pursued principally by influencing price supports and programs of the CAP.

Concerns for farm incomes are particularly strong because West German farms are relatively small and inefficient. But nonfarm incomes are relatively high, requiring higher prices to achieve acceptable farm incomes than in any other EC country. Farming interests also are particularly powerful in West Germany because they are well organized and have played a crucial role in coalition politics.

The West German government appears to recognize that the current CAP system of unlimited price guarantees cannot be continued indefinitely because of the development of unmanageable surpluses and soaring budget costs which have provoked increasing resistance from the nonfarm population. West Germany has always made the largest net contribution to EC finances. The conflicting concerns of farm incomes and budget costs have led West Germany to exhibit dual behavior in EC councils: while protesting most loudly about rising budget costs, Germany also is the foremost proponent of higher CAP support prices.

West Germany clearly prefers production controls to lower prices and other market-oriented programs. Direct income payments, particularly for disadvantaged areas, also are favored by West Germany. The partial renationalization of agricultural policy in the EC is favored by many West Germans because it would allow Germany to directly assist farm incomes without bearing costs for similar programs throughout the EC.

Agricultural Programs

Price supports and some structural improvements programs are provided for West German agriculture by the CAP. West Germany also affects farm incomes through tax concessions, subsidized credit, and social security programs. German national spending on agriculture was 6.9 billion DM in 1986, accounting for 2.6 percent of total spending. Sixty percent of expenditures are for social security programs. Other expenditures are for environmental protection and structural aid programs.

West Germany subsidizes agricultural interest rates and reimburses farmers for diesel fuel taxes. Most important, West Germany rebates a portion of value-added tax under an EC agreement, which effectively increases farm receipts by 5 percent. In 1980, before the beginning of the tax rebates, tax reductions were estimated to be equal to 7 percent of farm incomes.

The central marketing agency for German agricultural industry (CMA) has fostered strong cooperation among farmers, food manufacturers, and marketing organizations to rapidly expand German exports of processed foods. "Hermes" export credit guarantees are available to West German exporters.

Agricultural Program Evaluation

High and stable CAP prices have provided effective producer incentives and, combined with national investment policies, have fostered rapid development of West German agriculture. Agricultural production has increased rapidly. The structure of West German agriculture also has improved. Agricultural population has been greatly reduced and average farm size increased. The workforce in agriculture annually fell almost 5 percent in the 1970's, while output continued to rise steadily. Average farm size in West Germany increased 58 percent from 1966 to 1983.

Prices well above world prices indicate that considerable resources have been oriented to West German agriculture that may have been more efficiently used in nonagricultural sectors. West German consumers also have paid higher food prices under the CAP and EC budget costs and West German contributions to them have been increased.

Until the mid-1970's, high CAP prices readily achieved politically acceptable farm incomes despite small farms. Thereafter, growth in real West German farm incomes has not kept pace with nonfarm incomes. Recession has diminished alternative employment possibilities. Nonetheless, without the CAP, agricultural incomes would have declined precipitously over the past two decades, or the exodus from agriculture would have been much larger.

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