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ABSTRACT

This plan, worked out in accordance with the Comprehensive National Land Development Act of 1950, provides the basic direction for national development based upon a long range and comprehensive viewpoint. The broad purpose of the plan is to create a desirable environment while attempting to adapt to the new society and deal with current regional problems. The objectives of the plan are 1) create an affluent environment for human beings by harmonizing the national environment and promoting conservation, efficient utilization of all land areas, independent regional development modified to fit unique land conditions, and cultural environment; and, 2) provide approaches for tackling regional problems of overcongestion, oversparseness, and regional differentials. Since the plan is designed to extend from 1965 through 1985, it is to be implemented flexibly giving due consideration to changes in environmental conditions. The plan is made up of three parts: 1) "Basic Plan for Comprehensive National Land Development"; 2) "Basic Development Concepts for Each Region; and, 3) "Means to Achieve the Plan". (Author/SJM)

# NEW COMPREHENSIVE NATIONAL DEVELOPMENT PLAN



ECONOMIC PLANNING AGENCY
GOVERNMENT OF JAPAN

MAY 1969

# NEW COMPREHENSIVE

# NATIONAL DEVELOPMENT PLAN

Government of Japan worked out the New Comprehensive National Development Plan May 30, 1969 in accordance with the Comprehensive National Land Development Act. of 1950.

# NEW COMPREHENSIVE NATIONAL DEVELOPMENT PLAN

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# PREFACE

This is the Comprehensive National Development Plan prepared in accordance with the Comprehensive National Land Development Act of 1950. The purpose of this plan is to establish the basic direction for national development on the basis of a long range and comprehensive viewpoint.

## 1. An Overview of Regional Problems

The major portion of our land is devoted to forests and agriculture, leaving only 1.2 percent for urban areas, where 48 percent of the population resides. Tokyo, Osaka, Nagoya, and their surrounding areas (within 50 kilometers from the center of those cities) account for 58 percent of the urban population, and 74 percent of the increase in urban population during the last 5 years.

This condition has been created mainly by the construction of transportation net works, mainly railways, radiating out from a handful of cities, and the resultant rapid expansion of suburban and industrial areas around those cities.

The phenomenal progress during the period of 1955 to 1965 was achieved by accumulating economic activities on this previously established pattern. As a result, densely populated areas saw further overcongestion while sparsely populated areas became more sparsely populated.

In addition to these inbalances in land utilization, the pattern of land utilization has been fixed by such factors as a lagging supply of social overhead capital, underdeveloped techniques for land conservation, and insufficient knowledge about land utilization, as indicated in the trend toward urban concentration.

Since 1965 the urban concentration of population has been continuing, though at a slower rate, along with further urbanization in the style of living in all over the nation. In rural areas the outflow of population has continued and the imbalance between high and low population density areas has become a serious problem, depriving the mass of the population of comfort and safety. The imbalance is reducing

economic efficiency on the one hand and jeopardizing the harmony which must exist between life and nature on the other.

In the Comprehensive National Development Plan worked out in 1962, recommendations were made for efficient dispersion of industries and population to attain higher development effects from the viewpoint of efficiency in the national economy. These were based on the recognition that prevention of further expansion of cities and adjustment of interregional differentials had grown to serious and urgent regional problems.

Subsequently, the nodal system development program has been adopted as a strategic approach. New Industrial Cities and Special Areas for Industrial Consolidation have been formed as new growth centers for industrial development. Today, five years after the program was begun, the prospect of achieving objectives set for 1975 is good, although there are many difficult problems which will have to be settled in the future. It is hoped that rapid progress will be made particularly in the new industrial development areas facing the Sea of Japan, where there has been little industrial agglomeration in the past.

Various promotion plans have been established and implemented at the same time for outlying islands and for villages in mountain areas where little progress has been made.

With the exceedingly high economic growth rate (an average of 10.9 percent per annum), which is unparalleled in world history, and the resultant abrupt changes in regional economies and societies, the phenomenon of overcongestion and oversparseness is growing into a serious issue with no ready solution.

In order to fundamentally resolve the problem and to achieve rapid progress in our economy, the only alternative left us is to reorganize the land utilization completely in order to overcome the rigidity of the land use pattern, thereby actively adapting to the new society and creating a new environment, while maintaining the desirable results which the current programs have created.

In order to overcome the rigidity of the land use pattern it is necessary to expand development potential throughout Japan by creating a new network which will systematically release the concentration of central management functions and the system of physical distribution.

In choosing the course of action for land utilization, it is hoped

that a "frontier spirit" based on a long-range outlook and not bound by tradition will be evinced.

The limitations of overcongested cities have been gradually recognized, and enterprises have started to recognize the advantages of decentralization and technological innovations. It is also necessary to provide active guidance to these new signs of decentralization.

## 2. Transformation to a New Society

In spite of future labor shortages, Japan will continue to develop and there will be rapid progress in the so-called "Second Industrial Revolution" based on the information revolution, internationalization, and technological innovation. As a result, a new society, which may be termed the "information society," will come into existence.

Manpower was replaced by machinery in the first industrial revolution. In the second industrial revolution a portion of man's intelligence will be replaced by machinery by means of a rapid advancement of automation. This will free men for higher intellectual activities. In the process of transformation to the new society, drastic changes will take place in social and economic aspects.

Men will be required to adapt themselves to this new society and to continue to develop their abilities throughout their lives. The development of new human abilities must rely on school education, social education, and vocational training with full regards for maintaining a balance between personal development and social and vocational adaptablities. In order to develop the infinite potential of children, a greater emphasis should be given to early education. At the same time, we must endeavor to improve the people by improving the environment, which today discourages birth itself.

Our country maintains extremely intersive economic and cultural activities in a small geographical area. Education, publication, communication and broadcasting are all very advanced. The new information society is expected to accompany the expanding information network.

In the forthcoming information society, there will be a greater number of entities which carry out independent intellectual activities as well as an expansion of potential choices; and information will play a key role in all spheres of social activity. Every business organization will be reorganized as a creative, flexible body with a management

information system and program team as its nucleus. In order to advance the information network further, we must establish a system whereby information is controlled as a national asset, and the most up-to-date information can be readily collected and distributed to any place. For this purpose it is necessary to modify and develop the communication network and information industry.

On the other hand, as the international relationship expands and international specialization proceeds, exchanges of personnel, technology, capital, and information will increase at the international level due to the rapid reduction of the travelling time between nations. A national policy on land development must be pursued in response to this trend of internationalization while maintaining a balance with international transportation and communication networks.

World-wide research and development in the fields of space science, oceanography, biological science, and human engineering will stimulate the development of science and technology necessary for the formation of a new society. Technological innovations will drastically change the condition of our economic life. We must foresee the following: In the field of land development in particular, development of the laser technology will revolutionize the information system and new method of rapid transportation with greater load capacities will remodel the transportation system. The technology of desalination will revolutionize water utilization, and progress in housing construction and urban development technologies will alter the environment.

To develop these technolical innovations while adapting them to the unique conditions of our geographical and social environment, it is essential to pursue technological development on a selective basis. In order to establish a new land management system for national growth for a nation where the density of ecnomic activity has reached a level unprecedented in world history, it is indispensable to build up indigenous, innovational technologies of our own.

## 3. Policy Objectives and the Citizen's Options

A human society is a part of the intricate and subtly balanced natural order. People have created new environments by constantly changing the land utilization system which consists of (1) natural factors such as mountains, forests, fields, and rivers, (2) semi-natural

factors including agricultural areas; and (3) artificial factors such as cities. Progress in civilization, science, and technology has expanded to the sphere of spiritural and physical activities in the environment.

However, due to a part of human behavior which runs counter to the natural order and due to a lack of organizational control over civilization in the process of social development, the process of adjusting the environment to the new conditions has not been rapid enough, with the result that we have witnessed the general deteriorating trend of the environment, e.g., accidents, public nuisances, and a shortage of places for relaxation.

In response to constantly changing and expanding human activities, and considering the natural order, we must create environments for humanity, for greater safety and comfort, as well as for efficiency. In view of the changing pattern of land utilization in our country toward a high density society, affected by economic growth and urbanization, it is all the more necessary to work hard to create desirable environments in the urban and rural areas throughout the country.

In this society, evolving in pursuit of affluence, the search for social and cultural wealth is more urgent than that for material wealth: individuals must be independent, but a sense of community must be in the social life. At the same time, leisure time will increase and leisure itself will become an essential objective in life. A better social environment ought to be defined in response to the new value system based on comfort must be provided.

The ultimate purpose of comprehensive national land development is to create such a desirable environment while attempting to adapt to the new society and deal with current regional problems.

In order to resolve these policy objectives by adapting the policy to changing realities, we must draw up a blueprint free of past customs and traditions to accomodate the long-run changes in the economy and in the society with a liberal, flexible, forward-looking attitude.

This plan attempts to outline a plentiful future mainly by describing projects at each of the following stages: conception, study, planning, programing, and budgeting. The plan should be made sufficiently flexible to be adaptable to future conditions.

This plan must be drawn up with due regard to the people's desires originating from their creativity and inventiveness. Implementation of this plan requires the full consent and cooperation of local residents.

As for Okinawa and the northern territories, which are located at opposite ends of Japan, in addition to the establishment of transportation and communication systems, industrial developments including agriculture, forestry, manufacturing, and tourism must be promoted to suit regional characteristics. At the same time, the social environment of the residents must be developed and modified throughout the rural and urban areas as a part of the national land development. Since these areas are under special circumstances today, further research and investigation is needed before the basic course of overall development of those areas can be formulated.

# PART I. BASIC PLAN FOR COMPREHENSIVE NATIONAL LAND DEVELOPMENT

## I. Significance of Planning

### 1. Significance of Planning

The New Comprehensive National Development Plan is designed to show the basic direction of general land development of our country as it is about to enter upon a new stage, that of the information society, as an aspect of the overall urbanization process of our time, and will constitute the basis of national activities for many years to come.

This is the basic plan for determining the most effective allocation of social overhead capital which will grow to an enormous scale. At the same time, it should serve to guide private investment activities.

In view of the prevailing conditions of land utilization and the basic direction of the development of our economy and society, and considering the new trend toward high-speed information systems, this plan attempts to indicate a basic approach to effective utilization and development of our land area of 370,000 square kilometers by completely reorganizing the land utilization program.

To promote the comprehensive and international development of the nation, prevailing systems of regional development must be reorganized and supplemented. This plan, therefore, presents a basic approach to new regional development systems.

Since this plan is intrinsically designed to extend over a period of 20 years, it should be implemented flexibly giving due consideration to changes in environmental conditions.

Needless to say, this plan, will produce all-round results only when it is coordinated with other policy measures in such fields as education, social security, industry, and labor.

In order to generate the public investment necessary for the reorganization of land utilization which this plan attempts to accomplish along with the implementation of these policies, the share borne by the people will inevitably increase, and it is absolutely necessary that they thoroughly understand its importance and that they cooperate.

## 2. Objectives of the Plan

(1) The basic objective of this plan is to create an affluent environment for human beings by harmonizing the following four requirements with the aspiration for an advanced welfare society:

a. To maintain harmony between humanity and nature and to preserve and protect national enviroments permanently, to satisfy the people's desire for contact with nature which is expected to intensify as urbanization proceeds, and to conserve nature perpetually;

b. To modify the basic conditions of development and to provide proper balance in national development potentialities by the efficient utilization of all land areas to avoid lopsided utilization of particular regions;

c. To reorganize land utilization systems and improve efficiency by promoting independent regional development programs and modification to fit peculiar local conditions; and

d. To promote and conserve safe, pleasant, and cultural environmental conditions throughout the urban and rural sectors and protect people from discomfort and peril as a result of increasing economic and social activities and the higher density of economic and social activity.

(2) There exist pending regional problems, overcongestion, oversparseness, and regional differentials. Following are the basic approaches for tackling these problems.

a. In order to deal with overcongestion problem in large cities, social overhead capital should be improved in the fields of transportation, development of water resources, and housing and living enviroment facilities. Simultaneously, industrial establishments unsuited for Metropolitan areas because of (1) technological innovations, (2) a drastic expansion of production scale, and (3) environmental changes, will be completely decentralized. Various functions of Metropolitan areas will be reorganized and measures will be taken to concentrate and strengthen the central management function. At the same time safe and functional city structures will have to be established by a complete remodelling of Metropolitan areas so as to protect them from disasters and public nuisances.

In order to reorganize city functions, land utilization regulations and transportation regulations must be tightened on the one hand while various laws instituting user taxes and establishing the priority for

public use of land must be enacted.

b. Public investment for industrialization alone has been relied upon in the past in sparsely populated regions to prevent the outflow of population. This approach must be re-evaluated. For areas where industrialization or the promotion of tourism are possible, active development program to suit regional characteristics must be introduced and various measures must be taken to improve environment conditions, including the reorganization of communities.

For those regions where the introduction of effective development is difficult, however, various and over-all measures must be taken to provide social securities and to assist in settlement.

c. As to the problem of regional differentials, we take the stand that it is not so much a question of per capita productive income differentials but rather of the differentials in standards of living, particularly in the level of social living environments. While seeking to improve the social environment of the regional hub cities, the living environment of neighboring areas must also be improved to maintain a certain level in harmony with the regional hub cities.

A new task in relation to the problem of regional differentials is to provide new transportation and communication systems linking remote and less-developed regions with Metropolitan areas to ensure the development potential for these regions and to create the basic conditions for balanced iand development.

### 3. Composition of the Plan

This plan is made up ot the three Parts: Part One, "Basic Plan for Comprehensive National Land Development," Part Two, "Basic Development Concepts for Each Region," and Part Three; "Means to Achieve the Plan." Part One outlines the basic plan for Comprehensive National Land Development at the national level. Part Two shows the basic concept of comprehensive regional development based on the special characteristics and autonomy of each region. Part Three elucidates the ways of carrying out the plan with maximum efficiency.

The base year of this plan is 1965 and the target year is 1985.

## II. Development Formula

Based upon results of the past strategy of nodal system development, a more efficient and strategic policy must be selected in order to attain the objectives of the plan.

The new development policy aims at the establishment of a national network for systematizing the integration of central management functions and the physical distribution structure as a basic precondition for development. It also aims, in conjunction with this network, at the conception and implementation of large-scale development projects of industrialization and environmental conservation in such a way as to ensure efficiency and regional autonomy and to meet the special local conditions. This program will thus enable large-scale development of each region, and the effects will gradually permeate throughout the entire nation and allow balanced utilization of national land.

In other words, this formula is an extension of and supplement to the nodal system development formula strategy applied so far. The characteristics of the new developmental formula consist of (1) attaining greater efficiency in development by linking the various regions with the big cities by new transportation and communications networks, (2) planning industrial development program in large-scale agriculture, fisheries, manufacturing, distribution, tourism, and recreation industries while recognizing local autonomy and special local requirements, and (3) promoting large-scale conservation, development of water resources, and environmental conservation in urban development.

Along with the promotion of this development formula, we must establish "broad activity zones" for a national standard for living envronment, and provide various living and environment facilities as well as transportation and communication facilities in these zones, thereby ensuring that everyone can enjoy equally a safe, pleasant living environment.

In conjunction with the progress of national land development and the broad activity zones, a basic solution must be found to the pending regional problems.

## III. Framework of the Plan

As a preliminary step in the New Comprehensive National Devellopment Plan, the framework of land utilization, livelihood, and economy up to the target year 1985 is established.

However, this framework is not designed to indicate definitive targets or to serve as arbitrary assumptions, although it is related to the specific context of the New Comprehensive National Development Plan as well as to the results of its implementation.

### 1. Framework of Land Utilization

*(1) Concept of Land Untilization*

The central belt zone around the Tokaido and the Sanyodo Regions is used intensively. This situation is summarily indicated in Table 1 and Diagram 1 (C).

In order to spread the pattern of land utilization now concentrated in the Tokaido-Sanyodo belt over the entire country, the nation is divided into seven Regions, connected by a central axis, which will be

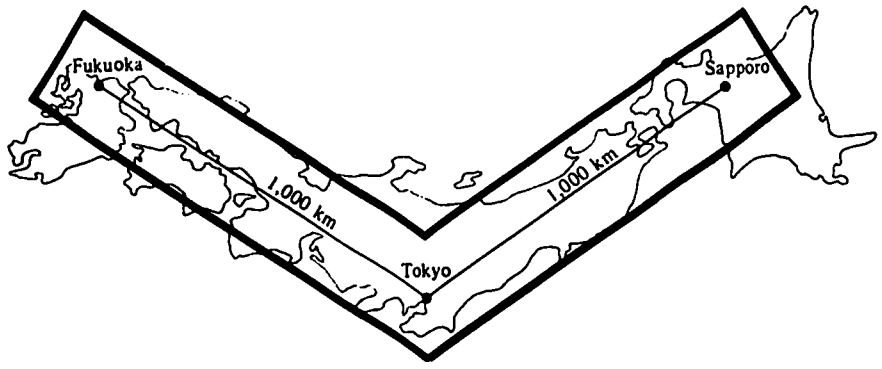
**Table 1. Major indices broken down by belt (percentage to total)**

| Index | North-east | Central | South-west |
|---|---|---|---|
| Total area (1965) | 53.8 | 31.1 | 15.1 |
| Population (1965) | 24.0 | 63.4 | 12.6 |
| Agricultural land (1965) | 46.7 | 37.1 | 16.2 |
| Residential areas (1965) | 28.1 | 59.2 | 12.8 |
| Forests (1966) | 56.1 | 28.7 | 15.2 |
| Gross agricultural product (1965) | 37.7 | 44.8 | 17.5 |
| Industrial output (1965) | 11.5 | 83.6 | 4.9 |
| Area below 200 meters above sea level (1965) | 50.0 | 32.7 | 17.3 |
| Social overhead capital stock (1963) | 27.3 | 61.0 | 11.7 |

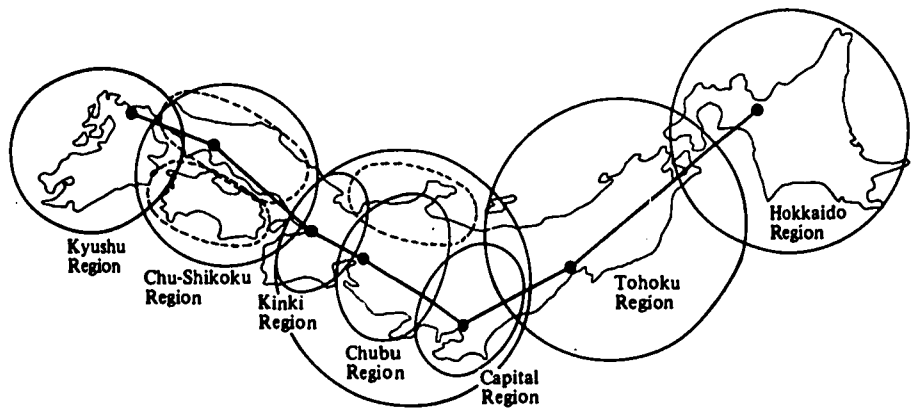
Note: (1) The North-eastern belt includes Hokkaido and 14 prefectures in Tohoku, plus Yamanashi, Nagano, Hokuriku, Tottori, and Shimane.
(2) The Central belt includes 21 prefectures in Kanto (excluding Yamanashi and Nagano), Tokai, Kinki, Sanyo, and Fukuoka.
(3) The South-western belt includes 10 prefectures in Shikoku and Kyushu (excluding Fukuoka).

Diagram 1.

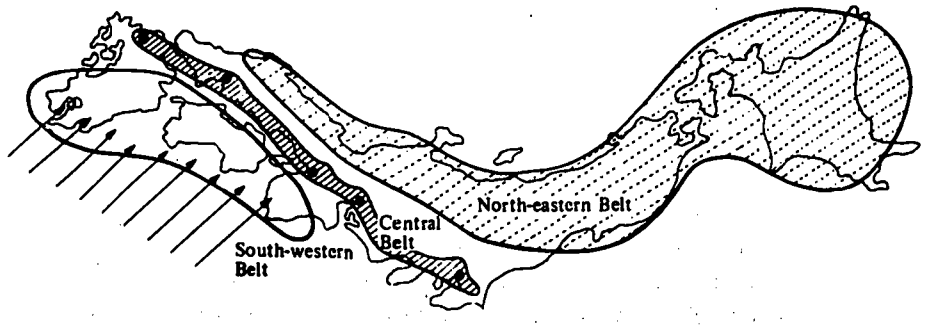
(A)




(B)




(C)



the basis of development and improvement. This concept is illustrated in Diagram 1 (B). Along with the development of each block in coordination with the central management function taking full advantage of its geographic location, each bloc has specific characteristics in accordance with its special circumstances as indicated in Table 2 which shows: (I) regions to be developed according to specific location, (II) regions to be developed within each bloc as a whole with due consideration to the effects from the agglomeration of the central belt area, and (III) regions to be newly developed as foodstuff supply areas in the Hokkaido, Tohoku, and Kyushu blocs.

Thus, with the advance of information and rapid transportation

**Table 2. Regional Division**

| Region | Characteristics | | |
|---|---|---|---|
| | I | II | III |
| Hokkaido | Provincial Region | | Food supply area |
| Tohoku | Provincial Region Outskirt-of-Metropolitan Region | | Food supply area |
| Capital | Tokyo Metropolitan Region | Keihin, Keiyo areas (Tokyo-Yokohama-Chiba) | |
| Chubu | Chubu Metropolitan Region Inter-Metropolitan Region | Tokai area | |
| Kinki | Kinki Metropolitan Region | Keihanshin area (Kyoto-Osaka-Kobe) | |
| Chugoku-Shikoku | Provincial Region Outskirt-of-Metropolitan Region | Seto Inland Sea area | |
| Kyushu | Provincial Region | Northern-Kyushu area | Food supply area |

Note: Column I shows the position of each block in relation to the whole.
" II shows industrial agglomeration areas already established.
" III shows new, large-scale food supply areas to be established in the future.

systems with higher degree of efficiency, we can expect that all of Japan, extending 2,000 kilometers from north to south, will be integrated into a single unit. This is shown as a model in Diagram 1 (A).

*(2) Breakdown of Land Utilization*

Japan, with an area of 37 million hectares, has approximately 6 million hectares of agricultural land, approximately 25 million hectares of forests, and 460 thousand hectares of urban areas.

By 1985, the agricultural area will increase to between 6.5 and 7.0 million hectares due to the expansion of grasslands, although some existing fields will be converted into residential areas. Part of the forests and wastelands will be converted into residential area or grassland, but most forests will be left as they are for the purpose of preservation and conservation of forest resources.

In accordance with the urbanization and diminishing of family size, the residential areas will increase residential areas by approximately 150 thousand hectares. Industrial areas will also increase by approximately 200 thousand hectares.

**Table 3. Breakdown of land utilization (in 1000 hectares)**

| | 1965 | 1985 |
|---|---|---|
| 1. Agriculture | 6,000 | 6,500 – 7,000 |
| 2. Forests | 25,170 | 24,000 – 24,500 |
| 3. Wasteland | 1,070 | 300 |
| 4. Rivers & lakes | 1,060 | 1,040 |
| 5. Roads | 420 | 900 – 1,000 |
| 6. Residential areas | 780 | 1,200 – 1,300 |
| Residences | 610 | 750 – 800 |
| Factories | 90 | 300 |
| Other | 80 | 150 – 200 |
| 7. Other | 2,480 | 2,450 – 2,500 |
| 8. Total | 36,980 | 37,080 |
| Supplementary Information | | |
| Urban area (thousand hectars) | 460 | 940 |
| Urban population (thousand persons) | 47,260 | 84,200 |
| Density of population (persons/ha) | 103/ha | 90/ha |

Note: (1) The net increase of 100 thousand hectares in total area (item 8) represents reclaimed land.

(2) The urban area and urban population figures are based on the Densely Inhabited District (D. I. D.) in the national census.

Urban areas will reach 940 thousand hectares, or twice the current size.

*(3) Zones of Regional Development*

As to the zone of regional development, activity zone will become their basis.

Currently, our land consists of between 400 and 500 activity zones. They include such extensive zones as Tokyo and Osaka as well as those in small scale local cities.

Activity zones will expand in the future due to motorization and the development of transportation and communications. The land will be reorganized by making broad activity zones as primary zones at the motorized stage. The primary zones will be regarded as the basic unit of regional development, and an autonomous regional development plan will be formulated for each primary zone according to special local conditions and requirements.

Primary zones as broad activity zones should have radii of 30 to 50 kilometers in metropolitan areas, 20 to 30 kilometers in provincial cities, and about 20 kilometers in rural areas. The regional hub city of each zone will be improved to create the agglomeration of urban functions at the appropriate level.

There are certain problems which require further study in the handling of broad activity zones in Metropolitan areas as well as in the very thinly populated mountain areas in some regions.

The demarcation of these primary zones should be independently decided by the respective regions.

## 2. Framework of Livelihood

*(1) Population and Age Composition*

Due to postwar reforms in the family system, the prevalence of urban mode of thinking, housing conditions, 2nd the level of income and due to the emergence of a high level of life-awareness negatively affecting the birth rate, our birth rate has been the lowest in the world since 1956--less than one in terms of the net reproduction rate.

Along with the changes in limiting factors, e. g., higher incomes, better housing conditions, and reduced burdens on housewives in mursing and housework, births will increase and the net reproduction rate will return to around 1.0 to 1.2.

Based on this assumption, the 1985 population is estimated at 120

to 123 million, which is slightly higher than the previous estimate of 116 million.

Assuming the total population to be 120 million in 1985, the age groups will change as follows: the percentage of those over 65 will increase from 6.3 percent (6,180 thousand) in 1965 to 9.5 percent (11,510 thousand) in 1985; the percentage under 14, will decrease from 25.6 percent (25,170 thousand) to 23.1 percent (27,930 thousand) and the 15–64 age group will drop from 68.1 percent (66,930 thousand) to 67.3 percent (81,290 thousand).

*(2) Households Structure*

Since 1955, nuclear families have been prevalent because of the changing way of life and the increasing flow of young people from agricultural villages into big cities, the number of one-or two-generation households and one-man households has dropped sharply, due partly to the lower birth rate.

As urbanization spreads and the urban life-style dominates, the separation in three-generation families of the older generation and young couples with children, and the separation of one-man units from two-generation households will become popular trends further contributing to a reduction in the average size of households.

On this assumption, the number of households in 1985 is estimated at 35.5 million or 1.5 times that of 1965 (24.1 million). The average number per family will drop from 4.08 to 3.38. Classified by household category, one-generation households will increase 2.3 times from 2.5 million in 1965 to 5.9 million in 1985, and those with the head of the household over 50 years old will more than triple, from 900 thousand to 3 million. One-man households will increase 2.2 times from 1.8 million to 3.9 million, and two-generation households 1.5 times from 13.1 million to 19.9 million, but three-generation households will decrease from 5.2 million to 4.8 million.

*(3) Living Hours*

In 1985 the productivity level (per capita gross national product) of Japan will be 3.5 to 4.0 times that of the base year due to technological progress and improved industrial structure. In the process, working hours will diminish rapidly, and the people's usage of life time will undergo a drastic change.

The gross national living hours of people four years old and above will increase from 836.2 billion man-hours in 1965 to 995.7 billion

man-hours in 1985. As for its composition, the ratio of life-necessity hours: binding hours: free hours is estimated to change from 43:30:27 to 42:25:33, where free hours will increase 1.4 times (see Table 1).

The number of hours in the national average life-span for men will increase from 569 thousand hours in 1965 (average life expectancy 68 years) to 604 thousand hours in 1985 (72 years). Working hours will decrease from 116 thousand to 106 thousand hours, while the free hours will increase from 157 thousand to 200 thousand hours (see Table 2).

The increase in free hours, together with a 3–4 fold increase in income and the faster mobility in transportation using airplanes, high-speed railways, and automobiles will create the necessity to expand space for leisure many times. Such an increase in free hours will at the same time increase the alternative possibilities of independent and creative ways of life for the individual.

**Table 1. Gross national living hours (4 years old and above)**

(unit in 100 million man/hours)

| | 1965 | percent | 1985 | percent | Ratio (1985/1965) |
|---|---|---|---|---|---|
| Life-necessity hours | 3,614 | 43.2 | 4,219 | 42.3 | 1.17 |
| Binding hours | 2,501 | 29.9 | 2,515 | 25.3 | 1.01 |
| (for labour) | (1,200) | (14.3) | (1,294) | (13.0) | (1.08) |
| (for household work) | (726) | (8.7) | (650) | (6.5) | (0.90) |
| Free hours | 2,246 | 26.9 | 3,223 | 32.4 | 1.43 |
| Total | 8,362 | 100.0 | 9,957 | 100.0 | 1.19 |
| Population (in 1,000) | 95,453 | | 113,662 | | 1.19 |

Table 2. **Life span living hours (4 years old and above)**

(in thousand hours)

| | Male | | | Female | | |
|---|---|---|---|---|---|---|
| | 1965 | 1985 | Ratio (85/65) | 1965 | 1985 | Ratio (85/65) |
| Life-necessity hours | 244 | 255 | 1.05 | 260 | 271 | 1.04 |
| Binding hours | 169 | 149 | 0.88 | 197 | 161 | 0.82 |
| (For labour) | (166) | (106) | (0.91) | (72) | (57) | (0.79) |
| (For household work) | | | | (94) | (74) | (0.77) |
| Free hours | 157 | 200 | 1.27 | 155 | 208 | 1.34 |
| Total | 569 | 604 | 1.06 | 613 | 639 | 1.04 |
| Life expectany (years) | 68 | 72 | | 73 | 76 | |

Note: Living hours are based on the NHK living hours survey. Definitions of each item of living hours are as follows:

(1) Life-necessity hours: Hours spent for sleeping, eating, and personal needs.

(2) Binding hours: Labour, household work, study, and commuting to office or school.

(3) Free hours: The rest of the total living hours less life-necessity hours and binding hours.

(4) Life-span living hours: Total life expectancy hours from four years of age.

*(4) Cost of Living*

Personal consumption expenditures in real terms in 1985 will be four times as much as the figure for the base year, and the consumption behaviour will show an advanced pattern. Reflecting increased leisure time at one's disposal, advanced schooling condition, greater mobility, the advanced state of the information network, etc., the proportion of food and beverage expenditures (Engel's coefficient) will go down below 30 percent, and costs for housing, transportation, communication, education, and recreation will increase proportionately (see Table 3).

The resultant cost per hour, when social consumption is added, in 1985 is estimated as follows: cost for outing and transportation will be 8.2 times that of the base year; for outdoor social activities, hobbies, and recreation will be 5.5 times; for study, 5.1 times; for indoor social activities, hobbies, and recreation, 3.8 times; and for life-necessity hours 3.1 times. The total stock of housing, environment facilities, and

educational and cultural facilities will have to be over 5.4 times that of the base year (see Table 4).

**Table 3. Composition of household consumption expenditure**

| Item | 1965 | 1985 |
|---|---|---|
| Food and beverages | 39.4% | 27.0% |
| Clothing | 12.6 | 9.0 |
| Utilities | 3.6 | 3.0 |
| Housing | 16.5 | 22.7 |
| Miscellaneous | 27.9 | 38.3 |
| (Communication & Transportation) | (2.4) | (9.4) |
| (Education & recreation) | (7.5) | (10.1) |
| Total | 100.0 | 100.0 |

* Based on national account statistics.

**Table 4. Cost per living hour**

(in Yen/man-hour in 1965 prices)

| | 1965 | | | | 1985 | | | |
|---|---|---|---|---|---|---|---|---|
| | Household Expenditures | Housing Cost | Public Service | Total | Household Expenditures | Housing Cost | Public Service | Total |
| Necessities of life | 25.3 | 3.0 | 3.4 | 31.7 | 74.9 | 12.0 | 11.2 | 98.1 |
| Households | 18.9 | 3.0 | 3.4 | 25.3 | 86.4 | 12.0 | 11.2 | 109.6 |
| Rest & others Social & hobbies | 13.1 | 3.0 | 3.4 | 19.5 | 44.3 | 12.0 | 11.2 | 67.5 |
| (Indoor) | 22.3 | 3.0 | 3.4 | 28.7 | 87.2 | 12.0 | 11.2 | 110.4 |
| (Outdoor) | 25.5 | – | 7.1 | 32.6 | 139.1 | – | 39.1 | 178.2 |
| Study | 15.6 | – | 27.3 | 42.9 | 80.3 | – | 139.2 | 219.5 |
| Outings, transportation | 16.1 | – | 5.9 | 22.0 | 131.9 | – | 48.4 | 180.3 |
| Labour | 3.5 | – | – | 3.5 | 8.2 | – | – | 8.2 |
| Total (average) | 19.0 | 2.2 | 4.5 | 25.7 | 71.0 | 8.5 | 18.5 | 98.0 |

Note: (1) Housing cost and public service are estimated using the household expenditure ratio (1985/1965).
(2) Housing cost represents the annual service of housing stock.
(3) Public service represents the annual service volume of free public facility stock plus current expenditures for maintenance, repair, and personnel expenses.

## 3. Framework of the Economy

The scale of the conomy and that of investment are to change in proportion to trends in international trade, consumption, and the change in relative roles played by the government and private sectors in the future. They are also related to the thrust and the results of national land development, but here they are formulated for the sake of convenience on the following assumptions:

*(1) Scale and Level of the Economy*

GNP in 1985 expressed in 1965 prices will be ¥130 to 150 trillion, or 4 to 5 times the 1965 GNP of ¥ 30 trillion.

Per capita income will be between ¥ 1,100 thousand and ¥ 1,300 thousand in 1985, and GNP per square kilometer of national land will be around ¥ 400 million.

Production income in 1985 will be between ¥ 100 trillion and ¥ 120 trillion, with 5 percent from primary industry, 46 to 48 percent from secondary industry, and 47 to 49 percent from tertiary industry.

Personal consumption expenditures will hit the ¥ 70 trillion level by 1985. Reflecting the improved consumption and housing level, the percentage of housing and miscellaneous costs will increase, while the percentage for food and beverages will be substantially reduced and that for clothing slightly reduced.

*(2) Employment and Education Structure*

By 1985 the production age population will reach approximately 93 million, an increase of 20 million over 1965's 73 million, or 1.2 percent per annum.

Due to the lower rate of employment as a result of a higher schooling rate, the total labour force will become 56 million in 1985 compared with 48 million in 1965, an increase of about 8 million (0.7 percent per annum).

The employment structure in 1985 will consist of 5 million for primary industry, between 23 million and 24 million for secondary industry, and between 26 million and 27 million for tertiary industry.

As for the occupational structure, in response to changes in the industrial structure, the number of workers in production and transportation will reach 20 million to 21 million; trade and services between 11 million and 12 million; white-collar workers 18 million; and agriculture and fisheries less than 500 million.

By 1985 the majority of junior high school graduates will enter senior high schools, and over 30 percent will go to universities and colleges.

*(3) Scale of Investment*

The cumulative total of fixed capital formation for the 20 years between 1966 and 1985 is expected to reach between ¥ 450 to ¥ 550 trillion, about 7 to 9 times the total cumulative fixed capital formation for the 10-year period 1956–1965 (¥ 63 trillion). The total capital stock in 1985 will be several times 1965's ¥ 101 trillion.

During the same period, cumulative private investment in plants and equipment will reach ¥ 210 to ¥ 260 trillion; cumulative private housing investment ¥ 110 to ¥ 120 trillion; and the cumulative government fixed investment ¥ 130 to ¥ 170 trillion. Classified by functions, cumulative construction investment will amount to ¥ 270 to ¥ 330 trillion and cumulative investment in plants and equipment ¥ 180 to ¥ 220 trillion.

# IV. Major Objectives of the Plan

## 1. Construction of the New Networks for National Land Development

### *1-1 Major Planning Objectives for the Construction of the New Networks for National Land Development*

(1) Formation of New Networks

In view of the current state of land utilization and the future course of development of our economic society, and from the aspect of new high-speed information systemization, a new network which will co-ordinate the central management functions and the physical distribution structure will be provided to fundamentally reorganize land utilization and to effectively utilize the 370 thousand square-kilometers of land.

The new network will be established by combining the integrated central management functions which have been established already, fully utilizing data communication systems, jet airplanes, new high-speed trunk-line railway systems, speed highways, high-speed container ships, and other high-speed, high-efficiency distribution techniques, thus expanding development potential throughout the country. Specifically, the new network will be established by connecting the capital, Tokyo, with Sapporo, Sendai, Nagoya, Osaka, Hiroshima, and Fukuoka in a big agglomeration of central management functions with each other and then further connecting the network with regional hub cities to exert its effects throughout Japan through sub-networks in the primary living zone of each of these cities.

This new network must be established through close coordination of the high developed nation-wide communication network with a high-speed transportation system centering on airplanes to permit the exchange of information, manpower, and goods according to their respective needs and characters in the most efficient manner.

(2) Integration of the Central Management Functions

The urban population will increase to about 84 million in 1985 or to approximately 70 percent of the national total. The urban area to accommodate this population will roughly double. The urban population by seven metropolitan areas under this trend will be as follows:

| | |
|---|---|
| Tokyo | 25.0 million |
| Sendai | 1.2 million |
| Sapporo | 2.5 million |
| Nagoya | 5.5 million |
| Osaka | 14.0 million |
| Fukuoka | 2.2 million |
| Hiroshima | 2.0 million |

The urban population of regional hub cities is estimated at 30 million. Confronted with this striking urbanization trend, these cities must be developed as areas provided with central management functions.

(3) Establishment of Nation-wide Communication N twork

In view of future requirements for large-scale and higher-speed data processing and transmission, advanced data processing systems must be established using computers.

To meet these requirements, we are to expand and construct a nation-wide telephone anddata communication network, since these are expected to become the key media for communication of information. This will revolutionize economic and social activities of the nation, and significantly affect the development potential of the provincial areas.

By 1985, increase in number of telephones and expansion of telephone network will permit instant communication of information at any time among any spots of the country.

The application and utilization of computers will expand considerably. Use of remote processing systems connected with communication circuits, in particular, will make rapid progress. By 1985 the volume of information through data communication will far exceed that through telephone. In anticipation of this development, communication circuits must be planned and set up to improve the efficiency and quality of communication networks for efficient economic activities and for higher cultural level.

By developing and introducing various new methods of communication of information and by providing a variety of new services, the present communication network built separately for telegraph, telephone, and television etc. will evolve into a total communication network having "speaking," "writing," and "visualizing" functions.

(4) Measures for Intensified International communication and Transportation

Industrial and economic activities will expand internationally, and Japan's leadership position will be established with the impact of her activities felt throughout the world. In addition, international cultural exchange will become vigourous, and leisure activities will take on an international character as incomes rise. In view of the greater volume and higher speed of the international flow of information, passengers, and freight, international airports, harbours, and related facilities to handle transportation and communication must be modified and coordinated with domestic networks.

The New Tokyo International Airport and other large-scale international airports, as well as key domestic airports for major local lines, must be improved to receive mammoth supersonic jet planes and short-distance international jet planes. Air cargo handling facilities must be expanded to accomodate an increasing volume of freight.

Port facilities for international trade will be provided for the time being in the bays of Tokyo, Ise, and Osaka, as well as the Kanmon area. Major ocean routes will be improved to prepare for greater trade volume, larger ships, and greater safety. In order to avoid excessive concentration of cargo into these ports, however, new ports will be sought and there will be planning for the improvement of ground transportation facilities. In addition, new industrial ports will be planned in Tokyo and Osaka in conformity with future location of industrial establishment to accommodate mammoth ships, since the existing facilities in these bay areas will not be able to handle these ships.

As to international communication networks, communication satellites and the global underwater coaxiale cable network will make television relays, data communication, and direct dialing telephone communication possible between major nations.

(5) Establishment of Transportation Systems in Provincial Regions

During the decade 1955–1964, a high-speed transportation system was established between the metropolitan regions. Growing economic and social activity and the recent higher standard of living necessitate high-speed, bulk transportation between provincial regions and metropolitan regions. Interregional transportation must be stepped up to handle shipments of (1) perishable foods from outlying areas to the cities, (2) increasing leisure demands from metropolitan areas and (3) relocation of industries in the provincial regions. For this purpose mod-

ern, high-speed transportation systems connecting the provincial regions with the metropolitan regions must be set up. They should be supplemented by auxiliary transportation networks within the provincial regions themselves and between provincial regions.

Above all, a high-speed transportation network with the seven large hub cities as either terminals or transfer stations to link up these regional hub cities will be established to provide trunk lines. To meet an increase in air transport of passengers and cargo, a nation-wide airline network will be planned. Port and bay areas will be improved in response to an increase in coast-to-coast transportation and to innovations in distribution technology.

(6) Improvement of Metropolitan Regions Transportation Systems

It is important to give priority in establishing a transportation system to the handling of an increasing volume of passengers and freight transport within metropolitan region and at the same time tightly linking this to provincial regions.

For this purpose, Tokyo, Osaka, and Nagoya airports and related facilities will be improved. At the same time, outer loop highways will be established and freight train stations, truck terminals, port facilities, and distribution centers will be laid out. The location of the Tokyo terminal for each new high speed trunk line railway will be determined by taking into consideration Tokyo's intra-city transport system.

Subway networks will be established in Metropolitan areas for mass transportation of commuters into the cities. Commuting trains will be connected to the subway system, and existing lines will be expanded. In the capital region, in particular, high-standard, high-speed railways should be established and connected to the cities within the region in order to deal with the expanded commuting zone and to supplement the transport capacity of existing railways.

A wide network of trunk highways will be established to deal with automobile traffic within metropolitan regions. In view of the greater need for transportation systems connecting Tokyo, Nagoya, and Osaka arising as nation-wide land development proceeds, more high-speed transportation facilities will be added on top of the existing ones.

(7) Formation of Japan's Main Axis

A new network covering all Japan will be designed and established in preparation for the forthcoming information society by providing the higher function of the cities and nation-wide networks of

communication and transportation.

A route connecting Sapporo, Tokyo, and Fukuoka will link the seven large hub cities including capital, Tokyo, which is the central nerve of the management functions.

Along with the improvement of the seven large hub cities, including Tokyo, new transportation and communication networks built around the trunk communication network and high-speed transport systems including trunk airlines, new trunk line railways, and highways will be integrated as the main axis of Japan.

For high-speed transportation facilities forming the axis of Japan, the construction of key airports in Sapporo, Tokyo, Osaka, and Fukuoka, of express highway and new trunk line railways joining Sapporo and Fukuoka, approximately 2,000 kilometers, and the improvement in the port facilities around the seven large hub cities will be planned and carried out.

With the establishment of this main axis, the time-distance will be shortened drastically throughout Japan. The social, economic and cultural gaps which exist between different regions will be reduced and the central management function of Tokyo will be utilized fully. The function of the seven large hub cities will be reinforced as a result, which, along with rapid establishment of the transportation system linking the central axis with the regional hub cities, will raise the general social and cultural levels of each region to allow greater and more balanced development potential.

## 2. The Carrying Out of Industrial Development Project

### *2-1 Major Planning Objectives for Agriculture, Forestry, and Fisheries*

(1) Formation of Food Supply Bases

To cope with the increasing, changing demand for food products, the need for raising productivity of agriculture, and the changing structure of regional economy and society, the development and redevelopment of agricultural areas is encouraged with an eye to the potential and limit of each area and agriculture is positively developed taking advantage of the special features of each location. At the same time it is expected that food supply bases will be formed in major farming belts. These bases will have distribution and processing facilities and serve to supply food to cities where the demand for food is ever increasing.

Large-scale crop farming and cattle raising will be promoted in Hokkaido, Tohoku, and Kyushu which are rich in land resource. In the inland portion of Tokyo metropolitan region, in the inland portion and Japan Sea side of the Kinki and Chubu region, and in the Chu-Shikoku region, crop farming, dairy farming, and pig and poultry raising are to be encouraged in accordance with the special features of the respective areas. The peripheral areas around large cities will be adjusted to serve as suburban suppliers of perishable goods in proportion to urbanization.

(2) Development of Cattle Raising

In accordance with the evaluation of dietary habits in the future, the demand for beef, milk and diary products is expected to reach 4 to 5 times the 1965 figure in 1985. To meet this demand, about 10 million head of beef and dairy cattle will be needed ensuring 1.4 million hectares of grassland improvement. Therefore, with an eye to international demand and supply conditions of agriculture and live stock product and price trends, work shall aim at increasing feed crops planted in areas already cultivated and developing grassland from the standpoint of exploiting under-used resources. At the same time, basic facilities, including roads and large dairy management communities, shall be provided.

(3) Improvement of Land Base for High Productivity Agriculture

To realize high productivity agriculture that would in 1985 correspond to an income of 2 million yen per worker per year, and to meet the changing and increasing national demand for food at reasonable prices, the land base must be improved to allow high productivity with the wide application of technical innovations.

The necessary steps shall also be taken for advanced water control, land readjustment, etc., mainly of the 2 million hectare paddy fields suitable for the use of large-size farm machinery. This will raise land productivity and permit large-scale, mechanized farming.

The 1.9 million hectares of dry fields (including irrigation facilities for the fields and farm roads) will also be improved.

(4) Formation of New Distribution System for Perishable Foods

Urbanization will concentrate the demand for food in the cities and the areas capable of supplying food will be expanded by the new transportation network and rationalization of the distribution of goods through improve technology and modernization of the trade system.

Thus a new distribution network will be established linking the supply areas to the demand areas.

Such distribution methods as the integrated transportation system and the cold-chain system must be expanded and developed to facilitate the rapid distribution of large quantities of perishable foodstuffs. As well as improving the system of shipments in the producing areas, a distribution-storage system based on new, large-scale central wholesale markets should be instituted and establish new food distribution bases established in the consumer areas, thus providing for a broad, organized distribution network.

We shall Large food processing and distribution bases must be established near the coast. Industries which process the increasing quantity of imported food products will be concentrated in these bases with facilities necessary for rational production and distribution.

(5) Planned Cultivation of Forest Resources

In response to the heavy use of forest resources and the increasing demand for lumber, with the conservation of the land and natural environment, the planned cultivation of forest resources is being promoted. The goal is a total accumulation of 2.9 billion cubic meters by 2,015.

This means we need 170 thousand kilometers of forestry roads based on production are needed by 1985, and positively low-quality or over annuated natural forests shall be converted into artificial ones with a 300 per cent growth rate, creating 12 to 13 million hectares of artificial forests to ensure a domestic supply of 90 million cubic meters of lumber in 1985.

(6) Improvement of Main Fishing Ports and Promotion of Resource-Reproduction-Type Fisheries

With the changing of growing demand for fishery products, new fishing techniques, and the construction of the new transportation network, there will be many changes affecting the future development of the fishing industry. These will necessitate changes and modifications in the fishery production system.

Therefore, fishing ports shall be reorganized and their functions enlarged. From the viewpoint of providing facilities for distribution and improving the environment of fishing villages, as great importance is attached to developing main fishing ports as integrated centers for production and daily living.

In addition to developing new offshore and pelagic fishing grounds, it is expected that the application of recently developed or developing resource-reproduction fishery techniques will lead to efficient production and an increase of one million tons of medium and high-grade coastal fish and shellfish by 1985.

In other words, it is planned to intensify resource cultivation or resource formation by turning suitable shallow seas into so called undersea fields where fish shoals will be created and medium-and high-grade fish and shellfish seeds will be stocked and transplanted. Through the construction of marine facilities for tide circulation, bottom farming and surf control, new, expanded three-dimensional use of cultivated fishing ground space shall be further encouraged.

(7) Development of Farming, Mountain, and Fishing Villages

The population of these villages is decreasing; the standard of living of the inhabitants is rising; and their desires in life are becoming more various. This means there is a need to enlarge the functions of the cities which constitute the hub of their "activity zone." These cities must become centers for collecting and shipping, processing, machinery, materials, information, and the acquisition and exchange of technology related to agricultural, forestry, or fishing activities. Transportation facilities will be improved so as to enable each agricultural, forestry, or fishing region to acquire sufficient services from these hub cities. In areas remote from cities, the central settlement must assume enough city functions and become community centers. Environment facilities–community roads, water supplies, sewage systems, assembly halls, etc.–must be completed and there must be concentration and unification to rejuvenate those small settlements which are dispersing and declining.

*2-2 Major Planning Objective for Industrial Development*

(1) Regional Expansion of Industry and Countermeasures

Led by growth in machine industries and other high-grade processing sectors, Japanese industry will continue to expand and should reach 5 times the 1965 scale by 1985. Great strides will be made in the scale of industrial production, especially in the fields of heavy and chemical industries, to cope with the total internationalization, symbolized by the liberalization of capital transaction. On the other hand, technological innovation will open up new industries in the fields of electronics and nuclear energy.

The new nation-wide transportation and communication network will greatly alter the terms of location of all regions, gradually eliminating the unprofitability of remote locations and thereby adding to the areas where industries may be located.

Such core industries as the steel, oil, and petrochemical industries are becoming less profitable in metropolitan areas where vaious kinds of restrictions are multiplying, and some must be scrapped. Large "Kombinats" will be formed in a small number of locations with vast sites, large harbors, and other geographical conditions suitable to huge, new production functions.

The new transportation and communication network will enable production activity to expand and develop in urban-type industries which have concentrated in the cities so far. As urban functions in the outlying regions expand, there will gradually be more incentive to locate urban industries there, and it may be possible for new industries, arising from new technology, to take the lead in the regional development.

Thus the regional expansion of industry will shift from the present pattern of concentration in Metropolitan area to one of location in more distant areas. Therefore the more efficient distribution of production functions and the improvement of nodal points for industrial development, including new industrial cities, are to be encouraged.

(2) Construction of Large-Scale Industrial Areas

Compared to the 1965 level, basic industries will by 1985 have increased 4 times in the case of steel; oil, 5 times; and 13 times for petrochemicals. Great advances will be made in the size of plants and facilities to cope with more vigorous international competition. This will necessitate finding sites to enable development of large-scale production.

This means that priority must be given to providing places highly suitable for location of basic industries with infrastructure for industrial development. As for place highly suitable for large-scale production activities, the construction of huge industrial bases must be encouraged taking into consideration the construction of transportation and communication networks in the future and the changes in conditions caused by an increasing external diseconomies in big cities.

(3) Providing Foundations and Ensuring Locations for Urban-Type Industry

There will be great changes in the structure of the socalled urban type industries, such as machine industries, which will take the lead in the growth of Japan as technology develops. Production will see a 7-fold increase over to 1965 by 1985, thus creating the need to ensure 100 thousand hectares of new industrial land.

Therefore, this plan must bear in mind the expansion of possible locations for industry resulting from the improvement of new transportation and communication network, the growth of cities in outlying areas, and changes in terms of location due to technological innovation to ensure in advance that suitable large areas will be available for industrial use. The creation of sub-networks and other facilities basic to industry, and the improvement of the living environment as well, are to be encouraged.

(4) Dispersal of Plants from Existing Large Industrial Areas

In 1965, the Tokyo-Yokohama and Osaka-Kobe areas accounted for 30 percent of Japan's industrial production. In the future, greater limitations on available land and water, as well as deteriorating shipping conditions and increased obsolescence due to new technology, will lead to marked changes in the location of industrial activities. The industrial structure in these areas will tend to be tied to the functioning of large cities, centering on distribution and processing industries, and these areas will account for a mere 10 percent of the total production in 1985.

The complete dispersal from existing large industrial areas of those industries not suitable for location in large cities, is to be encouraged the land to be used for urban redevelopment.

(5) Redevelopment of Industrial Conversion Areas

Japan will develop a powerful industrial structure which will grow rapidly in size. On the other hand, due to technological innovation, competition with developing countries, labor shortages, and changes in the pattern of consumption, there may be seen a rapid tendency toward stagnation in some old industries and in traditional, local industries. Since many of these areas are highly specialized with only one type of industry, this will have considerable social effects on the region. In the coal-producting areas, the sharp decline in the coal industry due to the energy revolution has brought on a collapse of the economic society

and created an urgent need for countermeasures.

Therefore, the redevelopment of these areas is being promoted in accordance with their particular characteristics and development potentials.

(6) Improvement of Energy Supply Bases and Distribution Systems

The demand for energy in 1985 will reach 4 to 5 times the 1965 demand. The supply will rely heavily on oil. Meanwhile, the development of nuclear energy will raise it to provide as much as 10 percent of the primary energy supply.

To meet this increased demand for energy, the certain of large-scale energy supply bases and establishment of a new distribution system using improved distribution methods will be encouraged.

To cope with the nearly five-fold increase in energy demand by 1985, the plan is to promote the construction of large atomic power stations generating 30 to 40 million kw and to provide the basis for large thermopower stations and pumped storage power stations. As power plants will be larger and more remotely located, remoter, an ultra-high-voltage 500 thousand volt power transmission network will have to be created for large-scale, long-distance, wide-spread transmission of power.

To guarantee a stable supply of oil, large crude oil import bases capable of receiving super tankers will be created in remote areas facing the ocean. The construction of oil pipeline networks will be encouraged for the safe and efficient movement of large quantities of oil.

Import bases, pipelines, and other distribution facilities will also be improved for the expected rapid rise in demand for liqud natural gas.

(7) Development of Mineral Resources of the Continental Shelf

In response to the rapid increase in demand for basic raw materials as the economy grows, domestic mineral resources still subject to exploitation shall be actively developed to ensure a stable supply of mineral products. Particular attention must be paid the exploitation of the continental shelf as a promising source of mineral resources.

Japa's 280 thousand square kilometer continental shelf, equal to 76 percent of the total area of the country, is thought to hold plentiful mineral resources of many kinds. Their exploitation and use would be a great contribution to the economy. If the oil and natural gas resources of the Japan Sea shelf were brought under large scale development, this would not only bring about remarkable changes in the demand-supply

structure for energy in Japan, but would also give a powerful impetus to the economic development of the surrounding areas.

Thus basic studies on the continental shelf should be conducted and related technology develop. Meanwhile, efforts should be made to promote the development of continental shelf mineral resources as a link in that chain of comprehensive ocean development including fishery resources, ocean-generated power, and seaside tourism.

*2-3 Major Planning Objectives in Distribution*

(1) Construction of Large Distribution Centers in Response to Development of Intermodal Distribution System

The rapid growth of the economy from 1955 to 1965 exerted great pressure on the physical distribution system. All transport organizations have made great strides toward greater size, increased speed, and mechanization for greater efficiency. New technology will continue to develop in all these transport organizations. Not only that, but with the need for qualitative improvement of distribution, the sharp rise in transport demand, heavier international traffic, and increasing labour shortages, there will be increased use of data management systems based on computerization and more streamlining in packing and cargo handling.

An integrated distribution system from producers to consumers will become more widespread by the organic of linking various distribution systems and there will be further development of distribution control techniques by firms themselves.

The modernization of business trade, modification of social and economic conditions, as well as improvement of distribution facilities are required to efficiently achieve such systematized transportation. Thus the construction of large distribution centers, composed of complex terminals, warehouses, and wholesale facilities shall be promoted in metropolitan areas such as Tokyo, Osaka, and the major regional hub cities.

(2) Improvement of Distribution and Processing Bases and Construction of Distribution Networks for Basic Materials

As the economy grows, the production, distribution, and consumption of steel, oil, and building materials will occur on a greater scale and their production will gradually shift to more remote areas. The cities which account for a considerable part of the demand will be dependent on supplies from these distant areas.

To ensure a steady supply of these materials will require greater speed and specialization in large-volume, long-distance transport, the development of pipelines and other new transport methods, and the creation of a data distribution system. It will also need distribution and processing bases with stock, distribution, processing, and service functions near large demand areas.

These bases will be established in the transportation link-up of coastal and inland parts of large city regions. At the same time, roads, railways, harbours, and other transport facilities have to be rearranged.

(3) Reorganization of Distribution Function in Large Cities

In large cities, distribution, reflecting the concentration of population and the advanced standard of consumption, tends to grow bigger and bigger in scale. But if distribution functions center in a disorderly fashion in the heart of the city, as they have in the past, this may lead to such various evils as complications in distribution and jam of intra-city traffic.

To cope with this, it is planned to separate distribution and commerical transactions, encourage the dispersal of distribution-related facilities from the heart of the cities to the outskirts, and make distribution run more smoothly and efficiently to help form a nationwide distribution network. Moreover, the construction of over-all wholesale centers and wholesale trade areas shall be promoted in city-sub-centers to make wholesaling more concentrated and commercial transactions more rapid and efficient.

The plan envision efficient distribution of shopping centers with department stores and other large stores in metropolitan areas to meet new consumer purchasing modes such as quantity buying and "one-stop shopping" arising from the quantitative and qualitative rise in consumption and increasing motorization.

*2-4 Major Planning Objective on Tourism and Recreation*

(1) Creation of Natural Toursim and Recreation Areas and Construction of Large Ocean Recreation Bases

The number of outdoor recreation man-hours in the national total living hours will increase from 50.1 billion in 1965 to 101.5 billion in 1985. The higher level of consumption and increased mobility will lead to a broad increase in recreation demand and a growth in the relative importance of recreation, which requires a lot of space. The natural recreation areas required for nature appreciation, mountainclimbing,

hiking, skiing, and skating will amount to about 5 million hectares in 1985. For recreational enjoyment, about 50 thousand hectares of large, concentrated natural recreation areas shall be provided fully equipped with camping grounds, hotels, cabins, skating rinks, ski-slopes, etc., and with gas, water, and electricity.

Swimming, sailing, motorboating, fishing, skin-diving and other water sports will also be important. In 1985 these will require about one thousand kilometers of coastline. To meet these demands, it is planned to equip the coastlines with the necessary facilities as well as to construct in several locations large ocean recreation bases with 10 kilometers of artificial beaches, yacht harbours, marine parks, etc.

The necessary natural touring and recreation areas, coastlines, and water recreation bases should be within large city regions, but these cannot fully satisfy the demand. As natural tourism areas become more distant, there will be greater encouragement of the development of such regions with full variety as Hokkaido, Tohoku, Hokuriku, Sanin Shikoku, Kyushu and the offshore islands. As the tourist areas are linked together by transportation-communication networks and unified with organized city tourism, these areas will become attractive recreation areas.

In developing these areas, adequate thought must be given to harmony with nature.

## 3. Plans for Environmental Conservation

### *3-1 Major Planning Objectives Regarding Protection and Preservation of the Natural and Historical Environment*

(1) Protection and Preservation of Nature

The human race has expanded its living space through the exploitation and utilization of nature and thus brought about the current prosperity. But as the urbanization proceeds, man's desire for contact with nature deepens and nature become a valuable national asset which should be preserved and protected now and for future generations. It is very important that forests, mountains, lakes, seashores, and marine areas be preserved and protected for scientific research, recreation, conservation, and production. Moreover, efforts must be made to create a natural environment in the cities.

Therefore an area of 600,000 hectares shall be retained in its wild, undeveloped state, for the purpose of research and limited recreation

(walking only) purposes. An area of about 6 million hectares will be established planned and managed, where facilities will be provided which will harmonize with nature without upsetting its natural state.

The coastal waters and another 29 million hecatres of farmland, grassland, forests, seashore, lakes, and rivers, while used for production, will also serve as natural recreation areas. Therefore, in the development of industry, adequate thought shall be given to avoiding the destruction of natural beauty and resources and recreation areas shall be created which will also be used for farming, forestry, and fishing. The plan is to preserve natural environments while providing nature paths connecting natural areas and other facilities for the rich enjoyment of nature aiming at harmony between nature and the work of man.

For about 1 million hectares of city area, the site of city life for concentrated population, every effort shall be made to preserve the natural environment and actively create nature artificially with plans for streetside tree-planting, parks, and other facilities.

(2) Protection and Preservation of the Historical Environment

Valuable tangible and intangible cultural assets created in our unique natural, scenic, and historical environment exist all over Japan. Meanwhile as the standard of living and the level of eduction rise, a greater amount of time is spent on intellectual activities. As society becomes progressively urbanized, interest in the traditions and culture related to these cultural assets grows, and it becomes extremely important to protect and preserve valuable cultural and historical places for the present and future generations.

Cultural assets and places such as historic sites and buildings which are prone to destruction in the course of rapid development shall be taken into consideration in development plans and efforts shall be made to preserve them and, at the same time, to offer then as places for recreational use by arranging them in a systematic manner as part of the people's life environment. In places where many historical buildings and relics are concentrated, such as Kyoto and Nara, wide areas can be put under protection and preservation program.

*3-2 Major Planning Objectives for Land Conservation and the Development of Water Resources*

(1) Promoting Land Conservation

Japan is full of steep slopes with little level land. Surrounded by water, Japan has always been a country subject to natural disasters–

mountain slides, floods, high tides due to typhoons, and concentrated heavy rainfall. In addition, Japan is located in the earthquake belt and has peculiar natural conditions with crumbly soil, coastal erosion, and heavy snow. Meanwhile, the industrialization and urbanization of the Japanese economy and society have led to many changes in the patterns of land utilization and thus have altered the implications of disasters too, and the damage from such disasters may now reach extremely server proportions.

Guaranteeing safety and comfort in people's lives under these cirumstances requires that land conservation include raising the safety level with respect to these disasters throughout the nation in accordance with the changes occurring in the patterns of land utilization.

In carrying out large-scale land developments such as creation of large grasslands and land areas for cities and industries, sufficient heed must be given to harmony with nature and to providing regulations and guidelines for land use from the standpoint of disaster prevention in areas with steep slopes or landslides, areas where there is a fear of rock and soil streams, areas with special soil conditions, areas subject to bedrock sinkage, and other areas liable to disaster.

The further development of techniques and facilities for measuring and forecasting earthquakes, typhoons, floods, high tides, heavy snows, and other such meteorological occurrences must also be encouraged, as must organized systems for issuing warnings, ordering evacuations, and rescuing victims be expanded.

(2) Land Conservation to Cope with Urbanization

As pervasive urbanization proceeds, urban population grows throughout the country and huge amounts of property become concentrated in urban areas. In Tokyo, Osaka, and other large cities and their environs, central management functions are concentrated and protecting these areas against disaster raises increasingly serious problems.

For this reason, the planned flood flux shall be further expanded and basic facilities provided for handling floods in major waterway areas under a consistant plan to cope with an increase in flood flux accompanying the development of the basins and to increase the safety of the increased property gathered in the Tone, Yodo, and other large river regions. The construction of flood control dams shall also be encouraged in conjunction with the development of water resources.

Moreove:, as urbanization continues, city populations will grow and urban areas will expand. There will be an exceptional increase in the flood outlfow of rivers in whose basins urban areas are located such as the Tsurumi, Neya, and other rivers. This will require an increase in the flow capacity of the waterways.

Therefore it will be necessary to have a comprehensive drainage program (including sewage) in conjunction with zoning organization to provide for widened waterways, new channels, and large drainage areas. Especially in areas of expected urbanization, there is a need to plan drainage facilities in advance co-ordinated with city planning. These areas will also require further slide prevention measures on steep slopes, sand arrestation facilities, and other disaster prevention measures.

In low areas along the coast, dikes will be needed along the shore and at estuaries, locks, and large drainage facilities to prevent damage from high tides. Especially in areas subject to bedrock sinkage where disaster prevention is particularly difficult, subterranean water absorption control must be increased and regulation and guidance on land utilization must be provided as must urban disaster prevention facilities.

In areas where coastal erosion is a problem, anti-erosion facilities are required.

From the standpoint of city life and recreation, it is necessary to plan to conserve the purity and attractiveness of canals, rivers, and coastal waters. This means stepped up measures for sewage disposal and river purification as well as increased greenery along river banks and coasts.

(3) Land Conservation in Farming, Mountain, and Fishing Village Areas

In order to increase land conservation in mountain regions under a comprehensive program for developing water resources and preventing run-off of soil, forest reserves must be actively created and conservation functions (e.g. improvement of forests) reinforced, as must such disaster-prevention measures be taken as hillside protection, soil control, and dirt and rock streams prevention. Dilapidated areas where mountain streams flow and communities are located require antidirt and rock stream measures. To meet changes in land use resulting from out flow of population shifts and reorganization of settlements, the creation of disaster prevention facilities must be examined in a new light if we try to preserve mountain regions.

In agricultural areas, the creation of farmland and village environments for high productivity agriculture makes it imperative that efforts be made to preserve the quality of river water by improving water-ways, and constructing drainage facilities and flood control dams and other land conservation facilities on medium- and small-sized rivers. As for the rapid development of field-crop farming, grasslands and forests for windbreaks and sand arrestation and other anti-erosion measures shall be needed to protect the fields.

On the coastlines of the Pacific Ocean especially liable to be damaged by flood tide, and the coastlines of Hokkaido, the Japan Sea, and other areas subject to coastal erosion, preventive facilities must be provided.

In areas of heavy snowfall, damage-prevention measures, and road snow-removal and snow-mobiles are expected to improve the environment.

Stepped-up measures in steep grade regions, slide areas, arid areas, and other special soil condition areas will be taken as required.

(4) Promotion of Water Resource Development and Widespread Utilization

Japan enjoys plentiful water resources as a result of heavy rainfall. However, they are not adequately utilized now because of Japan's many steep topological declivities, the extraordinary fluctuation in river flow, and the lagging development of water resources. It is anticipated that demand for water will increase, and water supply and demand will become an even more pressing problem. It is therefore very important that broad, systematic development of water resources be carried out to guarantee a steady supply of water.

Consequently, every effort must be made to restrain the demand for water in areas where supply-demand is expected to be particicularly tight (Tokyo metropolitan area, Kinki, Kita-Kyushu, etc.) while working for thorough development of water resources within these regions and for over-all development of water resources for maximum utilization of river resources outside these regions.

Maximum utilization of the Tone River (through a large reservoir complex, development of Kasumigaura) and the Yodo River (based on development of Lake Biwa)is planned. In addition, study is being given to comprehensive development of rivers related to these two, including the Shinano, Fuji, Shingu, and Kinokawa Rivers. In developing these

resources sufficient attention must be paid to maintaining the quality of the water.

In the relatively water-rich areas of Hokkaido, Tohoku, Hokuriku and Southern Kyushu, these resouces will be developed systematically according to demand with an eye to conservation of the abundant natural environment and prevention of water pollution.

In massive development of water resources, the comprehensive development of the source areas of the rivers must also be planned.

To make more rational use of water and deal with the trend for water supply and demand to become a critical problem, it will be necessary to modify agricultural water use and drainage facilities, provide industrial water supply facilities, raise the fresh water recovery rate, and encourage the efficient use of seawater, as well as using water reduced from processing of sewage. Study shall also be given the customary water use, and comprehensive water control programs, thus making more efficient, practical use of our water. It is also necessary to stimulate development of technology to purify seawater cheaply in great quantities.

(5) Construction of a Complex of Water Control Facilities

Effective flood control will be carried out with the development of river basins, and there will be active construction of multipurpose dams, river-mouth barriers, canals, etc., to handle the increasing demands for water. Along with expanded utilization of retarding basins and lakes, and improvement of forests in the source areas, construction of a complex of water control facilities covering the water sheds of the rivers shall be promoted.

In the major rivers, including the Tone, Kiso, Yodo, Yoshino, and Chikugo Rivers, massive multipurpose dams, canals, and river-mouth barriers for water utilization and the prevention of salinity will be constructed. Regulatory pools for retarding areas will be constructed. It is also necessary to bear in mind the contribution these water control facilities may make from the stand point of lake-side tourism and recreation.

For the purpose of overall management of these water control facilities and effective flood control and water utilization, the installation of telemeter and computer systems, equipment for reporting and warning of dam discharges, communication and liaison facilities will form a centralized management system and help it operate organically

for balanced water utilization.

*3-3 Major Planning Objective for Prevention of Public Nuisance*

(1) Prevention of Public Nuisance

As the country undergoes further urbanization and industrialization, it becomes incrasingly necessary to prevent air and water pollution and other public nuisances in order to ensure a healthy, comfortable environment for people and avoid impairment of city and productive functions. Special care is required that extreme noise and vibration from high-speed planes, railways, etc., does not hurt the surrounding areas.

Establishing standards for the prevention of public nuisances, extending and reinforcing regulations on pollutant emission, eliminating concentrated sources of pollution, establishing buffer zones, providing regional heating and sewage, systematicly processing wastes, creating of a network for inspection of public nuisances, and developing techniques for prevention of public nuisances must all be undertaken in a comprehensive and systematic fashion.

Where there is air pollution from building heating and auto exhaust gases and various kinds of pollution from high concentration of factories in large cities. it is necessary to reconsider large-scale regional heating, study means of transportation, including traffic restriction, encourage the use of different fuels, promote plant dispersion, and set up a broad inspection network.

In areas where new industrial bases are to be built, prior studies on prevention of public nuisances should be carried out and factory location should be determined appropriately in accordance with the results.

*3-4 Major Planning Objectives for Housing Construction and Creation of Residential Environment Facilities*

(1) Housing Construction

The housing level in Japan today is lagging conspicuously, and there is a very strong aspiration for its improvement. In the next 20 years an increase of about 11.4 million households is expected due to population growth and the formation of nuclear families. Housing demand will increase as about 70 percent of the population will be concentrated in the cities. Meanwhile, in rural areas, modernization in agriculture, forestry, and fishery will lead to increased demand for new urban-style housing.

The demand for new dwelling is expected to reach 16.5 million units in 20 years. Demand for reconstruction of old housing, and small or overcrowded housing is expected to add a demand for 13 million units, for a total housing demand of around 30 million units. The land required for this new housing construction may reach 250,000 hectares. The demand for housing in Tokyo, Osaka, Nagoya and their environs alone will reach 12 to 13 million units.

The size of residences has recently been about 60 $m^2$ per unit, but, with a goal of one room per family member in 1985, 90 $m^2$ per unit will be required. A qualitative improvement in construction and facilities will also be necessary.

To meet such a housing demand planned construction is encouraged and the provision of large quantities of high-storied joint residences in large cities is envisioned.

(2) Creation of Residential Environment Facilities

In the past, house served as the space for overall function such as rest, work, education, entertainment, social life, and medical treatment. But since the life-style changes, the functions of the dwelling are centralizing on those of family togetherness and sleeping, etc. People are increasingly seeking educational, entertainment, and social functions in shared social facilities outside the home. In the cities where it is becoming increasingly difficult to have a home with a garden, we are confronted with a more pressing need to maintain open spaces in the cities.

To cope with such changes, and to ensure a richer life, man must actively seek to improve the residential environment.

This means promoting the comprehensive and systematic provision of parks, water, sewage, electricity and gas facilities, garbage disposal facilities, day nurseries, schools (including play-grounds), medical care facilities, shopping areas, and other facilities related to dwelling construction.

There is also a need to provide those traffic facilities which have a close connection with daily life to ensure the safety of the residential environment, such as traffic facilities for commuting to school and work, traffic safety facilities, parking lots, pedestrian sidewalks, etc. As to open spaces in the cities, a goal should be set of more than 3 $m^2$ of park area per person, in neighborhood parks, children's parks, and other parks for the various functions of daily life. For drainage, disposal, and

conservation of water purity, it is necessary to set up sewage facilities throughout the urban areas.

*3-5 Major Planning Objectives for Conservation of the Environment of Regional Cities*

(1) Formation of Attractive Broad Activity Zones

In response to pervasive urbanization in regional districts, small, isolated life environments must be expanded and improved. Otherwise it is extremely difficult to maintain the proper environment in such area. Thus the establishment of regional hub cities and the transportation system linking them with different localities in their respective spheres will allow the formation of broad activity zones (primary zones).

These broad activity zones, should be developed as attractive zones taking full advantage of the individuality of each of the various zones. In the regional cities, one can enjoy abundant nature unavailable in the large cities and, at the same time, historic culture, historical sites, and handicrafts can be incorporated into the life environment. Not only will development projects in industry, agriculture, fishery, distribution, and tourism bring out the special features of each of the various regions, but, at the same time, attractive broad activity zones can be formed and the individuality of the regions can be brought out through selective allocation of international conference halls, resort villages, medical care centers cultural centers, institutes for the development of stock raising, ocean exploitation, centers space exploration centers, and other research organizations concerned with developing new techniques; universities and other educational institutions; retraining organizations such as educational institutions, social education facilities, comprehensive technical centers, etc.; and integrated welfare centers, large muesceums, artificial nature parks, zoos, and botanical gardens.

In broad activity zones formed in snow areas, the creation of snowless roads and regional heating in the regional hub cities will support city functions in the winter and eliminate the hindrances to daily life that accompany snowfall. At the same time ways must be devised to take advantage of the snowfall to bring out the individuality of the area.

(2) Establishment of a Traffic System

One of the most important tasks in forming broad activity zones is that of creating a traffic system joining the various districts of the zones

with the regional hub cities.

But in 1967 the rate of the improved road for all roads was only 12 percent and only 5 percent were paved. Road conditions are still at too low a level to cope with extending activity zones. And yet motorization in outlying areas tends to grow rapidly. Even in these regions, the problems of traffic accidents at railway crossings and on-road parking are becoming serious.

In light of these cirumstances, railroad lines which may substitute for road transportation should be readjusted. New traffic networks shall be planned in the broad activity zones to bring each location in the sphere within one hour's travel from the regional hub city. In conjunction with this, railways and roads shall be improved; and station plazas, bus terminals, public parking places, traffic safety facilities. shall be provided; surface intersections shall be eliminated: and separate pedestrian, auto and bicycle roads shall be provided.

Winter traffic can be maintained in snowy areas by providing snow melting and preventive equipment and establishing a snow-removal system.

(3) Creation of Life Environment Facilities

Housing construction and the creation of related daily living facilities will guarantee a basic life environment.

The creation of facilities for social, joint use and selective disposition of higher level facilities in the regional hub cities will permit further improved city service functions to round out the life environment.

| Category | Daily Life-Sphere Facilities | Broad Activity Zones Facilities | High Level Facilities |
|---|---|---|---|
| 1. Education, Training | Kindergartens, Elementary & Lower, Upper Secondary Schools, Elementary Vocational Training Facilities. | Schools for other wise Handicapped Blind, or Deaf; Junior Colleges, Advanced Technical Colleges Youth Houses, Social Education Facilities, Advanced Vocational Training Facilities, Agricultural Training Centers, Drivers' Schools. | Universities, Research Institutes, Seaside & Forest Schools, National Youth Centers Comprehensive Technical Centers, Training Insitutes for Special Technicians, Vocational Training centers for the Handicapped. |
| 2. Culture | Libraries, Children's Culture Halls. | Film Theaters, General Libraries, Theaters, Fair Grounds, Assembly Grounds, Art Galleries, Concert Halls. | National Theater, Museums, Data Centers, Science Halls. |
| 3. Assembly | Assembly Halls, Community Centers. | Cultural Centers, Citizens Public Hall Working Youths' Homes, Marriage Ceremony Places, Funeral Homes. | International Conference Sites, International Cultural Centers. |
| 4. Health, Medical Care | Clinics, Hospitals. | General Hospitables Health Care Centers, Emergency Treatment Centers. | Regional Hygience Research Laboratories, Mental Hygiene Centers, Cancer Centers, Medical Care Centers. |
| 5. Environmental Hygiene | Public Baths, Public Toilets, Barber shops, Beauty Parlors | Cemeteries, Crematoriums, Slaughter houses. | |
| 6. Welfare | Child Care Centers, Old People's Welfare Facilities, Children's Halls, Welfare Centers, Children's Playgrounds. | Special Homes for Care of the Aged, Facilities for Aid to the Feeble-Minded, Maternal and Child Welfare Facilities, Facilities for Rehabilitation and Aid for the Handicapped. Homes for Working | Working Youths' Centers, Facilities for Seriously Disabled Children, Colonies, Rehabilitation Centers, Welfare Pension Halls. |

| Category | Daily Life-Sphere Facilities | Broad Activity Zones Facilities | High Level Facilities |
|---|---|---|---|
| | | Women, Medium and Small Enterprise Welfare Facilities, General Labor Welfare Centers. | |
| 7. Physical Education, Sports, Recreation | Children's Parks, Neighborhood Parks, District Parks, Walking Paths, Gymnasiums, Pools. | Central Parks, Forest Parks, Golf Courses, General Athletic Grounds, Zoological & Botanical Gardens, Recreation Facilities. | Public Gardens, General Parks, Nature Parks, Recreational Garden Areas, Ski Slopes, Skating Rinks, Camping Grounds, Marine Centers, Bathing Beaches, Health Resorts, Trailer Parks, Rest Villages, Farm Gardens, National Health Springs, Nature Paths. |
| 8. Shopping | Supermarkets, Commercial Districts, Retail Markets. | Shopping Centers, Department Stores. | Shopping Areas with Stores Specializing in Quality Merchandise. |
| 9. Security, Prevention of Disaster | Police Sub-stations, Police Boxes, Emergency Warning Devices, Fire Hydrants, Fire Prevention Water Tanks, Fire Stations, Streetlights, shelters, Protective Green Tracts, Snow Damage Protection Facilities, Snow Melting Equipment. | Police Stations, Special Fire Prevention Centers. | |

(4) City Planning for Regional Hub Cities

Many of the regional hub cities have been built up over a long historical period but rebuilding after the Second World War has almost completely renewed the face of the city so that the structures from the past have remained in few cities. However, even in areas which have been rebuilt in an orderly fashion, motorization and other subsequent developments have made redevelopment necessary in many areas, and they await basic civic renewal just as do those cities which were not ravaged by the last War.

Meanwhile, new cities are being formed rapidly. Thus there is a growing need for wide-ranging city planning measures for systematic advance regulation of construction, for development and preservation of new city areas, for guidance for orderly cities, and for creation of various city facilities.

City functions of the regional hub cities should be reinforced to serve as the center of broad activity zones. In these cities, redevelopment is necessary through more co-operative use and more high-storied construction of facilities which should be relocated and rebuilt to make way for city renewal and motorization, i.e. railroad yards freight terminals, warehouses, garages, factories, cemeteries, and residences.

The convenience of those living in the broad activity zones (commuting to work or school, shopping, etc.) must be taken into consideration in the systematic development of social joint-use facilities in the sphere.

From this standpoint, the plan relies on city planning of new land utilization and major facilities in the regional hub cities since they are the centers of broad activity zones.

*3-6 Major Planning Objectives for Environmental Conservation in Rural Areas*

(1) Modification of the Environment in Rural Areas

In those areas where agriculture, forestry, and fishery are expected to expand, modifications in the communities and their facilities must be planned to meet the rising standard of living and new industrial growth to expand the sphere of daily life, and to continue to create an appealing environment which will encourage the inhabitants to continue developing it.

To this end, shifts in housing and communities which accompany the creation of farm-land complexes for the introduction of advanced

mechanized technical systems for paddy-rice-farming, etc.; separation of large-scale live-stock and poultry-raising areas from residential districts; creation of new communities for stock-raising and forestry in mountain areas; and reorganization of communities in response to the emergence of hub fishing ports for coastal fisheries, and removal of fishing gear maintenance and seafood processing facilities from residential areas are all envisioned in this plan. Improvements will also be implemented in housing, water, sewage, electric and gas services, and other basic living facilities and roads and social joint-use facilities will be created connected with living and production based on regional plans for land utilization to cope with the enlarged daily living sphere.

(2) Protection of Livelihood in Mountain Villages with Drastically Decreasing Population

Mountains cover about 80 percent of the land area of Japan. In those mountain areas remote from cities, where there is meager potential for development of new industry, the population will continue to drop, with only older people remaining. Naturally, such a sparse population leads to a deterioration in living facilities and a drop in the level of enjoyment of city conveniences and ultimately leads to a deterioration in conditions for habitation. It is feared that this sort of region may increase.

In mountain villages where the population is decreasing drastically in this fashion, the consolidation and transferance of communities is envisioned as one way to make possible the enjoyment of higher standard of living, as is in instituting vocational training for those desiring to leave the villages. Meanwhile, everything possible should be done to maintain conditions for reasonable living in the mountain areas by providing roads, and communication facilities and using mobile "travelling" systems (for health and medical care, livelihood and farming information, mobile class-rooms and teaching materials, and travelling libraries), and by rounding out social welfare measures in these regions as required. These will be supplement with regional centers to satisfy the demand for daily life facilities by the inhabitants of these regions.

(3) Maintaining the Environment on Isolated Islands

Islands designated as "isolated islands" by the Isolated Islands Development Act, plus the Amami and the Bonins islands, number 350 inhabited islands and a present total population is 1,390,000. The

disadvantageous geographical conditions of these isolated islands are significant obstructions to development of industry and creation of a proper life environment.

Nonetheless, many of these islands have plenty of potential for new development in coastal fisheries, gardening, stockraising, forestry, nuclear generation of electric power, import bases for crude oil, and tourism in their abundant natural environments.

Therefore, steps should be actively taken to develop agriculture, forestry, fishing and tourism on these islands and to reduce geographical obstacles to development by linking them to the mainland and to each other by bridge, ship, airline, and road, as well as by communication networks. Guidance in forming appropriate-sized communities should be made available and concerted measures taken to provide a satisfactory life environment.

For those islands whose future development is considered impossible, every attempt should be made to provide the necessary facilities for living on these islands and, in the event that the entire population of an island or islands wishes to move elsewhere or to change occupation, appropriate steps to assist should be consideved.

Even in those islands where development is possible, if a suitable living environment cannot be provided and if the inhabitants desire to move, consideration should be given ensuring the facilities necessary for them to produce a better environment or commute and take part in production activities.

(4) Protecting the Environment of Rural Villages on the Fringes of Metropolitan areas

Rural areas around Metropolitan areas often undergo a deterioration in production conditions due to the effects of urbanization as farmlands are converted into recreation or rest areas. However, marketing conditions are favorable and there is great expansion potential based on the production of fresh foods. Meanwhile, progressive urbanization leads to expansion of residential zones into these fringe areas and in the next twenty years an estimated 200,000 hectares will be lost to new urban construction.

To avoid disruption in land utilization in these peripheral farm areas, urbanization and agricultural modernization should be carried out by stages in tandem. Therefore overall land utilization policies should be used to preserve farm areas capable of further agricultural

development and retain regional environments for the others by converting them into urban areas with garden-like environments, through a systematic, step-by-step conversion program.

*3-7 Major Planning Objectives for Preserving the Environment in Metropolitan Areas*

(1) Urban Renewal

The very high concentration of population and industry in Metropolitan areas requires that 1) deterioration of the environment due to pablic Nuisances, housing problems, traffic congestion, water shortage, etc. should be prevented, 2) those industries and other functions which are not suited for location in cities should be dispersed, 3) city functions be reorganized and the central management functions stregthened, and 4) the city's safety from disaster should be ensured.

This means drawing up a comprehensive renewal plan covering the city and surrounding areas and following it in carrying out drastic urban renewal, taking advantage of the individual nature of each city.

The dispersal of factories and schools should be encouraged to redevelop the land they vacate and reallocate business centers ensuring adequate roads and open public spaces. In order to realize the principle of having home and job as close together as possible, centrally located high-storied dwellings and large residential complexes integrated into the transportation and communication systems ought be encouraged.

Then, some city functions, such as business centers, and education and research organizations, should be relocated in fringe areas with transportation and communication facilities set up to link them with the city, thus providing dwellings and residential environments. Recreational facilities in suburban areas will further enrich the environment.

As these modifications in the large cities and their environs occur, systematical provisions shall be made for distribution facilities and wideranging city traffic facilites.

(2) Improvement of the Residential Environment in the Metropolitan Areas

The residential environment is beset by inadequate number of dwellings, small and overcrowding housing, low-standard facilities, danger of fire in overcrowding wooden buildings, increase in commuting distance insufficient residential environment facilities in the areas surrounding the cities, etc.

The increase in city population, particularly the increase in white-collar commuters employed in central management functions, and the increase in the number of small households will lead to a demand in 1985 for 6.90 million households in the Tokyo sphere, 3.70 million in the Osaka sphere, 1.70 million in the Nagoya sphere, 0.85 million in the Sapporo sphere, 0.40 million in the Sendai sphere, 0.65 million in the Hiroshima sphere, and 0.70 million in the Fukuoka sphere.

Thus it is necessary to improve the environment and raise the quality of housing while ensuring the availability of large numbers of dwellings. Such facilities as housing, parks, water, sewage, nurseries, schools, medicical care facilities, shopping facilities pedestrian roads where motor traffic is prohibited, etc. must be provided.

The number of commuters from the outer city to the inner city in 1985 will reach 3.2 million in Tokyo, 2.3 million in Osaka and 1.1 million in Nagoya. This represents almost triple the 1965 figures for Tokyo and Osaka, and a five-fold increase for Nagoya. A system of mass commuter transportation will be required to keep up with the increase of commuters.

Residential construction in the cities should shift from the old pattern of single, wooden dwellings to the construction of medium- and high-storied shared dwellings. In the suburbs, construction of this type of dwelling and related environmental facilities should proceed apace. New towns should be built up with integrated zoning and traffic systems. Construction of high-storied dwellings should be carried out in existing cities as well. In areas where greenery is to be conserved, a combination of parks and high-storied dwellings can be introduced in the form of "residential parks."

The collection and disposal of garbage and sewage is lagging far behind. In Tokyo, Osaka, Nagoya and their environs only 40 percent of the garbage and 12 percent of the sewage is completely processed. By 1985 the amount of garbage is expected to increase 3.8 times and sewage 1.5 times, and the smooth, hygienic disposal of these large quantities will be necessary. To facilitate handling this quantity, new processing techniques using ultra-high pressure presses for garbage disposal will be introduced and provide public sewage facilities and final processing facilities for sewage will be provided.

As the standard of living rises, it will also be necessary to devise

efficient means for handling discarded automobiles and other durable consumer goods as well as for tearing down old buildings and disposing of the construction materials.

(3) Redevelopment of Urban Centers

New technology and systems in the cities will accelerate obsolescence of older things. New technology and systems require city spaces adequate for their functions, and utilization of urban spaces will become more varied, more intensive, and more evenly spread around the clock, which will necessitate the renewal of old city spaces.

Partial zone redevelopment will not be enough; an overall renovation of all city functions, particularly central management functions, will be required.

There will also be a great increase in the demand for office space. The floor area of offices expected to be built in the next twenty years is:

| | |
|---|---|
| Tokyo (proper) | 23,000,000 $m^2$ |
| Osaka City | 11,000,000 $m^2$ |
| Nagoya City | 5,600,000 $m^2$ |
| Sapporo City | 3,300,000 $m^2$ |
| Sendai City | 900,000 $m^2$ |
| Hiroshima City | 1,200,000 $m^2$ |
| Fukuoka City | 2,200,000 $m^2$ |

The redistribution of this space must be done in accordance with planning for traffic, communications, and other public facilities, and must be guided in the direction of desirable city redevelopment.

Therefore office regulations should be considered for certain areas and the city center reorganized through the construction of business centers as sub-centers and the construction of new business centers in the suburbs of large cities.

Some of the universities and research organizations presently located in the cities should be relocated en bloc to research and academic cities in the suburbs and the regional hub cities.

Land vacated by relocation of factories and schools as well as land reclaimed along the shore must be efficiently redeveloped.

(4) Educational Environment in the Metropolitan Areas

School-age population will greatly increase in the suburbs, but thin out in the city center. This means the need is to plan for the systematic construction of compulsory education facilities and reorganization of

school districts in the suburbs and unification and amalgamation of schools in the city center.

Obtaining the natural environment unavailable in the cities, requives summer and winter schools and new mobile classes should be away from the city.

It is also necessary to provide university education and training to develop talented persons responsible for the changing society and economy as new techniques, activities, and systems are introduced. The process of developing an "information society" requires carrying out retraining of those engaged in central mangement functions and fancilitating exchange and joint research for specialists in all fields of research and development and international exchanges of information. Therefore international education and research organizations shall be set up in the cities which will form the nucleus of research and academic cities.

(5) Safeguarding the Metropolitan Areas from Disaster

The metropolitan areas with their heavy concentration of population, industry, and wooden buildings, are in great danger of damage from earthquakes, typhoons, flooding, and fire. And with the central management functions located in the cities, the damage is not confined to the city alone but affects the broad area controlled by the city. It is extremely important to satisfy the urgent need for the safety of Tokyo and Osaka especially.

Thus wooden buildings are to be prohibited in certain areas; disaster-prevention green areas and roads are to be provided; and underground construction is to be guaranteed earthquake-proof and fireproof.

To prevent damage from typhoons and tides, dikes will be built and city rivers will be improved. Internal water drainage measures are to be provided for sewers and pumps. In Tokyo with about 40 $km^2$ of sea level areas, and Osaka, with 30 $km^2$ in particular, plan for large-scale reconstruction with a disaster prevention belt and artificial bedrock will be carried out.

Large petroleum storage bases and places handling explosive or ignitable goods will be located remote from cities to the extent that this is possible.

# V. Concept of Large-Scale Development Projects

## 1. Character and Role of the Large-Scale Development Projects

It is necessary to prepare a new land management generating system for the long-range, sustained, rapid development of the land in response to new technology, the information societry, and overall urbanization: and this requires making strategic investment in the form of large scale development projects preparing a generating system for national land management as a part of large investment in plans for building the new networks for land development, industrial development projects, and environmental conservatior anticipated in the next twenty years.

Large-scale development projects are construction projects to give impetus to regional development using new techniques and to encourage effective use of the national land. They are expected to include a cumulative total of about ¥ 30 to 50 trillion in social overhead capital over the next twenty years.

## 2. Types and Selection of Plans

Large-scale development projects may be divided roughly into the following three types:

The first type is the construction of nation-wide communication, airways, high-speed trunk line railways, expressways, and harbors which may spread development potential throughout the nation linking with the sub-networks of primary zones. This forms the foundations for the space structure of the country largely as social overhead capital and i. the most important strategic method in the country's regional development policies.

The second type is large-scale industrial development projects for construction of agricultural bases, industrial bases, distribution bases, and tourism development bases with enlarged industrial size, systematized accumulation of techniques, and mass production methods. This is to be carried out in connection with the costruction of new networks and, while largely production capital, should be carried out in conjunction with social overhead capital.

The third type is related to the first two types and is implemented from the standpoint of preservation of the environment. It is

development projects aimed at protection and preservation of the natural and historic environment, land conservation and the development of water resources, housing construction and the provision of residential facilities, and environmental conservation in large cities, regional cities, and rural villages.

The criteria for selecting the projects include application of new technology, impetus for regional development, induced and accumulated effects of investments to the region, scale of the project and required funds, and overall, systematic work factors. Yet these criteria are not meant to be applied uniformly but should be selected in conformity with specific types of projects and particular development spheres.

In actual selection, the large scale development project is a construction plan, so its effectiveness as a project can be guaranteed by drawing up programs for its implementation. It is important that technical research and PPBS result evaluations be carried out for each project in order to successively select large-scale development projects.

### 3. Concepts of Large-Scale Development Projects

The concepts of the development plans for a new land management generating system are as follows:

*(1) First type*

a. Creation of a nation-wide communication network in reponse to the information society.

b. Creation of airports in hub cities, and a nation-wide airway network.

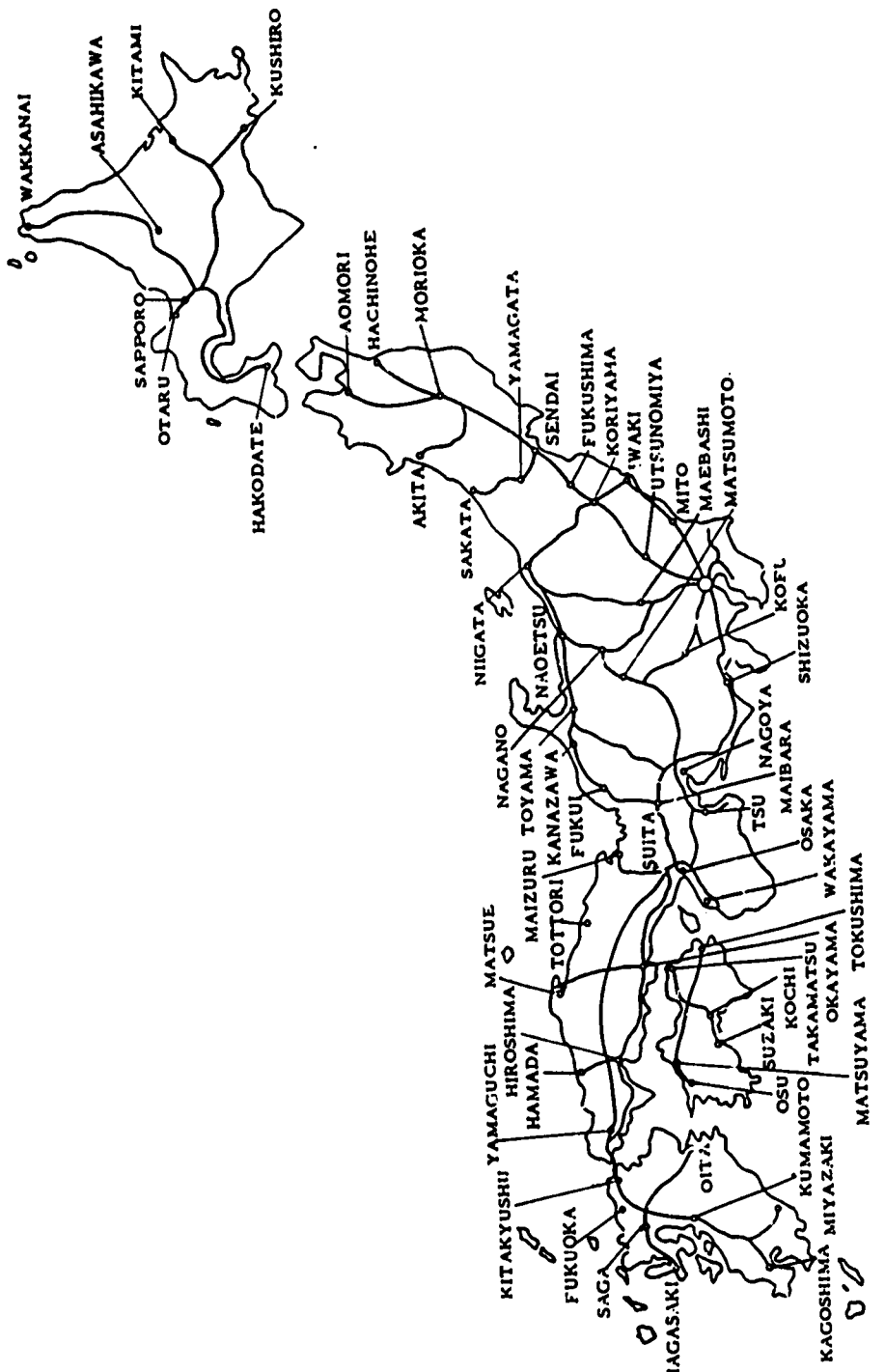
c. Construction of new trunk line railways from Sendai to Fukuoka, and provision of a nation-wide railways system of new trunk lines.

d. Construction of expressways as shown in the following map and supplementary high-speed roads. Encouragement of large bridge construction and intra-city expressways in large cities.

e. Construction of a new Tokyo international airport and international airports in several other locations.

f. New distribution center harbors in Sendai, Hiroshima, etc. Planned disposition of large distribution center harbors from a nation-wide standpoint.

Map: Trunk Expressways



*(2) Second type*

a. Provision of foundation for large-scale cattle-raising in Teshio-Kitami, Nemuro-Kushiro, Kitakami-Kita-Iwate, Abukuma-Yamizo, Aso-Kuju, and other areas.

b. Provision of foundation for formation of high-productivity rice-crop areas using advanced production techniques based on water control of the major rivers in Tohoku, etc.

c. Study and construction of 2 to 3 ultra-large remote industrial bases in the western Seto Inland Sea area, etc. and provision of necessary housing and residential facilities around these bases.

d. Construction of large energy bases and provision of long-distance distribution network.

e. Comprehensive large-scale distribution-related facilities, including a traffic system along the shores of Tokyo, Osaka, and Ise-Mikawa Bays and an outside loop system for a broader harbor system and systematic location of large distribution centers.

*(3) Third type*

a. Nature conservation and comprehensive development of large forest areas in the Chubu mountainous areas, creation of foundation for rational forest development and systematic introduction of cattle-raising and recreation.

b. In the Tokyo and Kinki areas--preservation of water quality and widespread efficient water control measures. Development of large rivers and related rivers from a recreational standpoint.

c. Selective deployment of artistic, cultural, informational, scientific, and other higher level facilities in hub cities.

d. In cities like Tokyo and Osaka where central management functions are concentrated, provision of city facilities for disaster prevention. Creation and implementation of urban renewal plans in zerometer areas and others open to severe damage in the event of disaster.

e. Mass construction of middle- and high-storied dwellings as a part of overall redevelopment of existing city areas in the metropolitan areas. Construction of appropriate-scale medium- and high-storied dwellings in peripheral city areas and provision of related environmental facilities and commuting and traffic facilities. This means wide zoning reorganization in these areas including land under cultivation and construction of new towns within the commuting sphere.

In view of the present lop-sided land utilization along the Pacific coast, particularly around Tokyo, Osaka and other Metropolitan areas, sweeping reorganization of land utilization, and spread development potential spread throughout the nation are needed. Not only must backwardness be eliminated, but rapid development must also be pushed from a long-range nation-wide standpoint by conceiving radical development measures for the Japan Sea coast areas.

However, in part of the Japan Sea coast areas, including Niigata and Hokuriku, the full latent development power can not be used because of the lagging supply of social overhead capital and the unfavorable snow conditions, although there is already a considerable concentration of indsutry; thus pointing up the need to develop techniques for effective use of technology and snow-removal to overcome the accompanying obstacles and develop and orderly development project including:

1) Establishing a basic transportation system of expressways and express trains linking the Japan Sea coast will Tokyo, Osaka, other large cities, and the Pacific Coast;

2) Fostering the growth of regional hub cities;

3) Providing distribution center ports in Niigata and Toyama to handle coastal and international trade;

4) Constructing industrial bases and inland city-type industrial bases in Akita, Niigata, Toyama, etc.;

5) Constructing new energy supply bases using nuclear power, etc., in Fukui;

6) Developing ocean resources;

7) Creating high-producitivity rice-crop areas, and

8) Developing tourism resources.

# PART II. BASIC DEVELOPMENT CONCEPTS FOR EACH REGION

## I. Preliminary

### 1. Description

In Part II shall be described the basic development concepts for each region in accordance with basic directions of comprehensive national development as described in Part I.

The basic development concepts for each bloc must effect the plan objectives in Part I while respecting the uniqueness and autonomy of each region taking advantage of the special features of each, and at the same time maintaining a nation-wide balance.

There are many factors which are difficult to predict. These factors are decisive in development conditions, and, moreover, basic data for the regions are inadequate, so there are difficult problems to be overcome in realizing these development concepts.

As these concepts had a tendency to be abstract in the past, an attempt has been made to be as concrete as possible in the development concepts, centering on projects proposed by each region. Yet in the process of implementing them, many adjustments will have to be made.

### 2. Regional Divisions

In the current development system, the country is divided into nine region. However, the nation-wide network and the land utilization concepts outlined in Part I will premit broader distribution of regions. Thus 7 regions are shown in the following table and, since these are for comprehensive, wide-ranging development planning, they naturally overlap at the edges and may change in response to future broad advances.

The Hokuriku area has been incorporated into the Chubu region to strengthen its unification with the Chubu region by maintaining its close connection with the capital and Kinki regions for development promoted by intensifying contacts with Metropolitan regions.

Chugoku and Shikoku have been incorporated into one region in

the light of their future closer connections with the Kinki and Kyushu regions.

Table: **Regional classification**

| Region | Areas Included |
|---|---|
| Hokkaido | Hokkaido |
| Tohoku | Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Niigata |
| Capital | Ibaraki, Tochigi, Gumma, Saitama, Chiba, Tokyo, Kanagawa, Yamanashi |
| Chubu | Toyama, Ishikawa, Fukui (Hokuriku), Nagano, Gifu, Shizuoka, Aichi, Mie, Shiga |
| Kinki | Fukui, Mie, Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama |
| Chu-Shikoku | Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, (Chugoku), Tokushima, Kagawa, Ehime, Kochi (Shikoku) |
| Kyushu | Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima |

## 3. Frameworks by Region

The economy and society of each region will undergo great changes as the basic region development concepts are regularly and selectively effected. It is very difficult to predict the results of this, but as a premise in drawing up the basic region development plans, the population and production income for each region under special conditions have been predicted (Table below). These predictions may have to be adjusted later as the region development plans are determined.

Prediction (1) is a trend projection on the assumption that the trend toward drastic concentration of central management functions in the cities seen in 1955-65 will continue. Prediction (2) is based on the assumption that the networks will be actively established and that as a result, production functions will be widely decentralized with the regional allocation of supplies of industrial capital, although central management functions will be concentrated in metropolitan areas.

**Table: Predictions (1), (2)**

| Region | 1965 | | 1985 (1) | | 1985 (2) | |
|---|---|---|---|---|---|---|
| | Population (thousands) | Production Income (billion yen) | Population (thousands) | Production Income (billion yen) | Population (thousands) | Production Income (billion yen) |
| Hokkaido | 5,170 | 1,134 | 4,700 | 4,400 | 6,300 | 5,800 |
| Tohoku | 11,510 | 2,236 | 9,700 | 7,700 | 11,000 | 9,600 |
| Capital | 26,960 | 8,002 | 40,500 | 50,000 | 38,500 | 42,800 |
| Chubu | 16,490 | 4,002 | 22,500 | 23,000 | 20,500 | 22,000 |
| Kinki | 18,040 | 5,282 | 26,000 | 28,500 | 24,500 | 26,600 |
| Chu-Shikoku | 10,850 | 2,423 | 9,800 | 8,300 | 11,000 | 10,800 |
| Kyushu | 12,370 | 2,382 | 11,000 | 8,000 | 12,000 | 10,900 |

Note: 1. Production income in 1965 prices.
2. Because of region overlapping the total for all regions does not give the national total.

## 4. Structure

Part II is composed of

1. Basic Directions in Development
2. Plans for Major Development Tasks
3. Concepts in Major Development Tasks for each region

In the plans for major development tasks, it has been indicated where major plans are now regarded as well underway, i.e. implementation is planned or implementation studies are being carried out.

The concepts for major development tasks may not necessarily have proceeded to implementation studies at present, but they do serve as the basis for rapid growth of the region and may have a great influence on the economy and society of the region, in which case they have been included here. These plans have been drawn up with an eye to the individuality and autonomy of each region. In response to future changes and the financial situation, these concepts may advance to the orderly selective planning stage after adequate research and study.

## II. Basic Development Concepts for Hokkaido

An agency was established for the development of Hokkaido in 1869 and ever since the government embarked upon this active management, Hokkaido has been developed in a systematic organized manner. After the war especially, based on the Hokkaido Development Law, the government has set up a Hokkaido Comprehensive Development Plan and actively pushed forward the development of Hokkaido in accordance with it.

At present the Second Hokkaido Comprehensive Development Plan is being implemented and the government plans to decide upon another plan when this one expires. Subsequent Hokkaido development plans will have to be coordinated with this New Comprehensive National Development Plan, but the present basic development concepts are as follows.

### 1. Basic Directions in Development

In recent times Hokkaido has continued to develop steadily, but nevertheless, some improvements are required regarding its economic shortcomings, such as its backward industrial composition. However, Hokkaido has plentiful resources of many kinds; abundant land and water and, broad expanses of natural, northern landscape, and it occupies a strategic position geographically. It has a great development potential and can make great contributions to Japan's rapid economic development.

In the future Hokkaido will be made a major food supply base, centering on large-scale stock-raising. Overcoming the island's intrinsic problems and taking full advantage of its outstanding circumstances while heeding the history of development there and its characteristics. Hokkaido will also develop as a large industrial base and energy supply base as Japan's economy becomes larger and more internationalized. Hokkaido will occupy an important position as a place for recreation, relaxation and international tourism in view of its outstanding natural scenery and as a place for international exchange between the northern sphere and the Pacific rim countries.

In order to give full play to this role, plans are needed for the systematic deployment of cities and rural villages. The current spot

development must be expanded to promote the establishment of advanced food production belts centering on dairy-farming, resources-reproduction-type fisheries production belts, huge industrial belts directly linked with energy supply bases, and the establishment of Sapporo and regional hub cities as centers for concentrated central management functions. At the same time, a life environment in keeping with the northern climate must be created.

Developing the area's rich natural resources while paying attention to their conservation, the plan also includes creating broad tourist routes interconnecting these regions and recreational facilities.

To reinforce the connections between regions and with the rest of the nation, a framework of facilities for transportation, communication, and power networks must be created. In other words, a transportation and communication system to criss-crossing the region must be established, the Sei-Kan tunnel completed, and an ultra-high-voltage transmission system established between Hokkaido and Honshu.

## 2. Plans for Major Development Tasks

In carrying out development in accordance with the basic directions laid out, the first need is to establish a transportation system for smooth, rapid traffic to and from Honshu and other regions in the area and for the expansion of the regional economy.

This means quick completion of studies on the Sei-Kan tunnel and beginning construction for railway use. Then there must be a trunk line constructed, running through the tunnel as far as Sappro. The Hakodate Main Line must be electrified and multiplied and a railway network should be built to link Sappro and eastern Hokkaido.

As for roads there is also the need to ensure traffic mobility during the winter and to prevent snow damage. Roads should be constructed crossing Hokkaido vertically and horizontally and linked them with a planned system of national highways. Major harbours such as Tomakomai must be developed to meet the rapid increase in freight. Increasingly vigorous economic activity will require improved airports to cope with the increasing speed and huge quantities of intra-regional and inter-regional traffic.

In Sapporo where central management functions are concentrated, a broad city sphere must be formed with more advanced city functions of improved traffic, communications, and distribution facilities. Sys-

tematic improves are also needed of city functions in other important cities such as Hakodate, Otaru, Asahikawa, Obihiro, Kushiro, Kitami, and Abashiri.

In conjunction with this network, the following tasks must be planned and implemented.

In agriculture, high-productivity agriculture must be instituted by enlarging the scale of management, encouraging the formation of joint use groups, and selectively expanding and streamlining production. In particular, it would be well to form an agricultural belt centered in the rice growing Ishikari plain and expand grasslands for the rapid spread of stock-raising.

In forestry, work is needed to improve and expand artificial forests and forest roads and encourage mechanization.

In fishery, hub fishing ports should be forwed and new fishing grounds expanded and created.

In industry, advanced use of the island's abundant agricultural, forest, fisheries and mineral resources will allow the growth of resource industries. Developing city-type industries in inland areas, priority must also be given heavy and chemical core industries in the Muroran and Tomakomai areas and the formation of the basis for industry in the Kushiro-Shiranuka areas. In Ishikari and other coal-producing areas must be created an industrial base in accordance with the regions' individuality and to provide a suitable life environment. Land and river control measures are needed in the Ishikari river region etc., to actively develop water resources and to conserve coastal and other land.

Nature must be protected and facilities provided for the tourist and recreational use of the four national parks (Shiretoko, Akan, Daisetsusan, and Shikotsu-Toya), and the four nationally designated parks (Rishiri-Rebun, Abashiri, Niseko-Shakotan-Otaru Coast, and Onuma), and other grand scenic regions.

### 3. Concepts in Major Development Tasks

Aside from plans for major development tasks, there are the following concepts which should be successively planned and implemented after serious study as future technological improvements and increased economic strength permit.

Plans are needed for the construction of a vertical trunk line extending north from Sapporo and a horizontal trunk line running from

central to eastern Hokkaido. Also envisioned are a horizontal-vertical road system and a highway network directly connecting Sapporo and hub cities, as well as international airports with snow-melting equipment.

Hokkaido is one of Japan's major food supply bases and new techiques must be introduced to form the largest stock-raising area in Japan, centering around Nemuro-Kushiro and Teshio-Kitami areas.

As Japan's industry expands, new locations will be required for construction of large industry, and construction is accordingly planned a huge industrial belt revolving around large Kombinats of basic resource industries along the Pacific Coast where land is now unused or underutiiized.

Also envisioned are the development of underground resources of the continental shief in the Japan Sea, construction of nuclear power generator bases, crude oil import bases, and natural gas bases using pipelines from overseas, and establishment of a supply base for the island's huge industrial belts, Sapporo, the hub cities, and Honshu.

To make the living environment in the major cities comfortable in the winter, regional heating and snow-melting facilities must also be planned.

In the mountanous areas covering central Hokkaido, planting of artifical forests, designation of nature protection areas, and construction of mountain routes and recreational facilities will provide place for relaxation and recreation throughout the year as well as for domestic and international tourism.

Taking advantage of its outstanding environment, the construction of international academic cities is also planned for Hokkaido.

## III. Basic Development Concepts for Tohoku

### 1. Basic Directions in Development

Located in the northeast portion of Honshu bordering the capital region, and separated from Hokkaido by the Tsugaru Straits, Tohoku has the largest area of the seven blces. The region is rich in development potential with its large development-suited areas, ample water resources, plentiful underground resources, unspolied natural enviroment, and large labour force.

However, there are unfavorable geographical and natural conditions, such as the fact it is a snowbound area split up by mountains which, combined with undeveloped transportation severely limit economic activity in the area. It is specialized in primary industry, mainly rice-growing, and its economic development is lagging behind in comparison with the city areas. However, recently the industrial structure of Tohoku has seen an improvement through industrialization and the region's development potential has gradually become apparent.

If this trend continues, new transportation (roads, harbours, and railways) will bring Tohoku nearer the metropolitan bloc and give it strategic importance in northern trade with Siberia and Alaska. This region can thus be expected to expand rapidly.

As for industry, existing concentrations will grow, new expansion from the capital region is expected and its is felt that there will be rapid development of the areas suited for huge industry.

In agriculture, the area may become the largest food supply base in Japan, mainly through high-productivity agriculture expanding in the broad plains of the regions large river basins and in the hilly districts.

Development along these lines requires expressway and railway systems to shrink the time and distance between Tohoku and the capital region and to improve links within the region.

Regional cities, in addition to Sendai, where central control functions are centered, need to be strengthened in their roles in information and distribution required for production activities and the lives of the inhabitants, to provide the facilities for a high standard living.

In agriculture, forestry, and fishing, increased future demand will

require streamlining and reorganization. The provision of an enlarged production and distribution base will allow modernization of management. Specifically, large-scale, high-productive areas for rice-farming and stock-raising will be formed through the positive use of national forests.

As for mining, in those areas where industry is already concentrated or where new industry is expected to emerge, the need is to provide the basis for industry and improve inter-communications as well as actively developing rich underground resources.

Taking advantage of the rich, colorful natural scenery, many places in the Tohoku region can be developed as places for youth training and popular recreation. Large nature conservation areas can be designated for the protection and preservation of nature and the development of water resources.

In addition, the cold and snow which have been obstacles to development in the past must be overcome.

## 2. Plans for Major Development Tasks

In carrying out development in accordance with the directions laid out, first priority must be given to providing a transportation system to link the region with Hokkaido and the capital region and to improve traffic within the region.

This means considering snow damage prevention measures to ensure traffic in the winter and systematic construction of Tohoku vertical and horizontal roads, a Kan-Etsu road, a Joban, road, a Hokuriku road and trunk national roads, and the new Tohoku trunk railway, as well as electrification and increasing the number of major railway lines such as the O'u Main Line and the Uetsu Main Line, and construction of the Sei-Kan (Aomori-Hakodate) Tunnel. Moreover, the harbours at Niigata and other distribution and industrial centers must be modified, and airports at Sendai, etc., must be improved to handle larger, faster aircraft.

Together with these improvements in trunk transportation systems, in Sendai a broad city sphere must be formed with more advanced central management functions and improved transportation, communication and distribution facilities. City functions must be systematically improved in Aomori, Morioka, Akita, Yamagata, Fukushima, Niigata, and other hub cities in accordance with their character-

istics.

In agriculture the favorable land situation must be utilized in development to provide the land base (improved irrigation and modification of farm-land) to raise productivity in the primarily rice-growing plains of Tsugaru, Kitakami, Sendai, Senhoku, Shonai, Aizu, Niigata, and other major food producing area. The production and distribution base for live-stock and fruitgrowing areas in the mountain and foothill areas of Kitakami-Kita-Iwate, Abukuma, Iwafune, etc. must also be established. As the demand for lumber grows, the vast forest resources of the O'u mountains should be developed and a network of forest roads and artificial forests built. Shallow cultivated fishing grounds should also be built near Sanriku, Sado, etc., and fisheries resources otherwise developed and set up Hachinohe as a trunk fishing port.

As for industry, bases must be provided for basic-resource-type industries in Hachinohe, Sendai Bay, Akita Bay, Joban, Niigata, and other coastal areas where industry is already concentrated and where it is expected to gather in the future, and bases for the introduction of machine and other city-type industries expected to make inroads from the Capital region estabiished in the inland areas around Sendai and Koriyama in conjunction with the need to promote the construction of new industrial ports at Sendai, Akita North Harbor, Sakata North Harbor, Niigata East Harbor, etc.

Developing tourism should improve the national parks at Towada-Hachimantai, Rikuchu Coast, and Bandai-Asahi and the national-designated parks at Kurikoma, and Sado-Yahiko and establish wide-range tourist routes and step up natural conservation and control.

In addition river and mountain control measures are needed in the Kitakami, Abukuma, Mogami, and Shinano rivers to promote water-resource development and protect the Sanriku and Niigata coastlines.

Steps should also be taken to actively develop the rich resources of black ore and subterranean heat and to construct automic power generators at Onagawa, O'kuma, etc.

### 3. Concepts in Major Development Tasks

Aside from plans for major development tasks, there are the following concepts which should be planned and implemented after serious study as future technological improvements and increased

economic strength permit.

The time and distance separating Tohoku from Capital region and Hokkaido must be shrunk and improve traffic within the region itself improved through construction of a Japan Sea Coast New Trunk Line, Jo-Etsu New Trunk Line, Tohoku Horizontal Trunk Line, Japan Sea Coast Vertical Motor Road, Jo-Ban-Sanriku Vertical National Expressway, O'u Vertical National Expressway. etc.

To alleviate the conspicuous concentration of freight in Tokyo Bay and help the development of regional industry, international trade ports with comprehensive functions will be built at Sendai, etc.

For the flatlands around Tsugaru, Kitakami, Sendai, Senhoku, Shonai, and Niigata is planned the formation of high-productivity rice farming supported by large mechanization and advanced water control. At the same time, a large stock-raising belt using national forests and vast under-utilized land areas around the Kitakami-Kita-Iwate and Abukuma mountain areas is anticipated to make Tohoku a prominent food supply base.

Meanwhile, creating an overall industrial base through construction of Ogawara Industrial Port and others will allow the formation of a huge Kombinat stretching along Mutsu Bay, the shores of Lake Ogawara, Hachinohe, and Kuji.

A natural gas supply base can be built on the Japan Sea coast and linked to the major industrial centers of Tohoku by pipeline, as can the large-scale development of ocean resources, including the subterranean resources of the Japan Sea continental shelf, be accomplished.

Large nature conservation areas are also envisioned in the Shimokita district and the Asahi-Iide district, as is the building of resort cities in the highlands of Iwaki, Kurikoma, and Bandai.

General research organizations to utilize and overcome snow can be established. In the major snowbound cities, facilities for snow-melting in city and residential areas and regional heating facilities can be provided in basic city renewal.

In the area surrounding Sendai can be built an international academic city as a center for international scholarly exchange and independent technological development.

## IV. Basic Development Concepts for the Capital Region

### 1. Basic Directions in Development

The Capital region, located in the center of Japan, includeds the largest plain in Japan, the Kanto Plain. With its center at Tokyo, it has led Japan in economic growth and experienced outstanding development.

In the future as well, capital region will continute to be the political, economic, and cultural center of Japan, serving as the gateway for increasing, varied international exchanges and continuing to expand.

However, in recent years, labour, capital, and other resources have become highly concentrated in the center of Capital region and overcrowding has become a conspicuous problem in many areas of industrial activities and the lives of the residents. Meanwhile, many areas inland or on the periphery of the city have remained relatively undeveloped and unused in spite of their suitable geographical conditions and comparatively flat topography.

Under these circumstances, to effectively and uniformly develop the Capital region over the long term, it is necessary to set up an efficient, rational system of assigning responsibilities and to create a system which gives full play to the huge central management functions which this region possesses. In other words, the city must be reorganized and modified by assigning responsibility for control and information functions in the center of the city and dispersing other functions, such as physical distribution, industry, agriculture and other material production functions widely inside and outside the Capital region.

This means first systematically providing high-speed transportation and communications linking the area with the other regions of the country and improving smooth, organic traffic between the capital and the neighbouring Tohoku and Chubu blocs in particular.

As the economic society becomes more densely concentrated in the center of the region, old systems deteriorate and the need for systems incorporating new technology increases. Strengthening the management control functions, guarding against disaster, and eliminating public nuisances, requires thorough city renewal and construction

of housing, schools and other living facilities, and a commuter high-speed railway network. At the same time the living environment of the area residents must be protected through preserving green areas and parks, providing water and sewage, and improving city rivers.

As the city center is reorganized, the surrounding and inland areas should be modified, a transportation network provided to link regional hub cities with the city center, and large residential and academic cities constructed in connection with redevelopment of the city center.

Provisions must be made to receive industries which are expected to expand and to set up farm areas as suburban suppliers of fresh foodstuffs.

The enormous population and the increasing use of natural resources in the cities will lead to a loss of harmony between man and nature. It is expected that there will be a greater demand for tourism and recreation and a need to provide recreation areas using the natural scenic areas in the Capital region and outside it.

Overall development water resources must also be conserved.

## 2. Plans for Major Development Tasks

In carrying out development in accordance with the basic directions laid out, the first step is to set up a basic transportation system. This means building trunk roads joining the metropolitan area with adjacent blocs, including a Tohoku Expressway, Chuo Expressway, Tohoku Vertical Expressway, Kan-Etsu Expressway, and a Joban Expressway. Within the region itself, must be built such trunk roads as an East-Kanto Expressway, Tokyo Circumference Expressway, Tokyo Loop Expressway, Kanto Loop Expressway, and Tokyo Bay Loop Expressway to provide a national road system in a planned fashion. The plan is to encourage the construction of a New Tohoku Trunk Line and a New Narita Trunk Line, conversion of major convertional lines to electricity, increase of the number of lines, and construction of a Musashino line, Kashima line, and a Keiyo (Tokyo-Chiba) line. Also, in addition to making Tokyo Bay into a vast harbour, harbors should be built along the coast of Ibaraki Prefecture to relive the high concentration of freight in Tokyo Bay. Oil transport facilities ought also be built in several parts of the region. Coping with increasing international traffic reguires improving Tokyo International Airport, equiping the New Tokyo International Airport, as well as upgrading

regional airports.

In conjunction with the establishment of this basic transportation system, the following major tasks will be planned and implemented.

In the city center city spaces will be reorganized by encouraging high-rise use of vertical spaces and positive redevelopment of zero-meter areas subject to many disasters and residential or industrial districts where the environments has deteriorated. New business centers will also be created in Yokohama and other cities for more efficient allocation of central management functions.

It is also planned to build large distribution centers at places 30 to 40 km from the center of Tokyo where transportation lines converge such as Atsugi, and to systematically deploy city industries.

Coastal industry bases shall be built fully considering elimination of public nuisances at Kimitsu, etc., along the southeastern part of Tokyo Bay.

Meanwhile, we shall build subways and other high-speed railways shall be built for commuting to work and school and vast expressways provided to ensure business traffic. Organizing properly the daily life functions which are spreading in a disorderly fashion into the suburbs weans systematically providing housing, schools, shopping centers, green areas, and other basic life-related facilities taking full advantage of the loop road system and building residential cities in Tama, Kohoku, and northern Chiba in particular.

To meet the demand for recreation, the plan calls for paying heed to conserving nature and setting up areas for the preservation of greenery in the suburbs. Moreover, in connection with city improvements, sweeping improvements shall be made in the city's rivers.

In the inland and suburban areas provisions shall be made for the land and other requisites for industry which is rapidly beginning to expand there, in the Kashima district for example, and systematic city modifications shall be implemented. In urban areas centering around Mito-Hitachi, Utsunomiya, Maebashi-Takasaki, and Kofu, the cities shall be modified to strengthen both industrial functions and regional city central management functions, and the construction of an academic city shall be promoted in the Tsukuba area.

In conjunction with such urban development geographical advantages shall be used with an eye to turning areas into fresh food producing districts by modfying farm-land and improving water use

facilities and vegetable shipment facilities. In the Yatsugatake disirict, grasslands shall be created for expanded cattle raising. Thus development shall provide the base for improved production and distribution.

With food distribution centers with central wholesale markets at Oi, San-Tama, etc., and port and distribution facilities shall also be provided at Misaki and Choshi as seafood supply center to the Tokyo-Yokohama area.

A large "colony" for the disabled and retarded will be built in the Takasaki district.

Nature will be actively conserved in scenic areas such as Hakone, Izu, Fuji, Jo-Shin-Etsu, Nikko, the Izu island, etc., and bathing beaches and resort areas will be modified to meet varied demands. Vast tourist routes will be created and international tourism facilities will be provided at Hakone, Izu, and the northern foothills of Fuji.

The water resources of the Tone River will be developed to meet the Capital region water demand, including comprehensive development of the source region. Meanwhile, land-conservation measures will be taken to prevent high tide damage.

### 3. Concepts in Major Development Tasks

Aside from plans for major development tasks, there are the following concepts which should be planned and gradually implemented after serious study as future technological improvements and increased economic strength permit.

It is planned to make the transportation system in the capital more rapid and efficient by building high-speed railways (New Jo-Etsu Trunk Line joining Tokyo and the Japan Sea coast through Takasaki, a second Tokaido line, and lines between Tokyo and Hitachi, Kofu, Atami, and Boso); expressways (second Todaido Expressway, and a highway crossing Tokyo Bay); and improved, airports and related transportation facilities to handle the increased demand for air transport. Sweeping urban renewal will be carried out in the city center to strengthen central management functions and damage prevention facilities. To accomplish this, renewal of the present city center and the construction of new business centers is planned for a reorganization of working areas plus large-scale redevelopment such as building a damage-prevention area and artificial bed-rock for zero-meter districts like Koto in particular, as is the planning and implementation of general

measures for construction of large, mass, high-storied residential areas.

At this time, as one part of the city renewal plan, planning is foreseen for an overall city transportation network including a vast network of urban expressways.

The information society requires retraining of those engaged in central management functions, exchange of specialists in all fields, joint studies, international exchange of research and development data, and thus, the construction of an international education and research center is envisioned as a part of the Yokohama redevelopment plan.

To ensure the steady supply of basic materials to the Capital region, distribution and processing centers shall be set up along the coast with stocking, delivery, and processing service functions. Oil supply pipelines will also be built.

To handle increased imports of wheat, soy beans, and other agricultural products, large distribution and processing bases along the water-front are needed.

In the Abukuma-Yamizo districts, grasslands will be created, livestock introduced, and milking, processing and other production and distribution facilities established to form a large dairly-farming base.

Furthermore, the Watarase retarding area and Kujukuri beach will be made into recreation areas. The mountains which surround the Capital region will be turned into regions with recreational, educational and research development functions. Specifically, construction will be undertaken of a highway crossing the Boso Peninsula and a scenic route all around Kanto in relation to the general development of the Boso Peninsula and the development of forestry in the mountain regions.

# V. Basic Development Concepts for Chubu

## 1. Basic Directions in Development

The Chubu region is located between the capital and the Kinki regions. It is composed of the city and town areas of the Pacific coast, the Hokuriku area on the Japan Sea, and the Chubu inland area located between these two. It is influenced by the neighbouring Capital and Kinki regions and has seen varied development.

The recent economy of the Chubu has been supported by the conspicuous expansion of industry in the Pacific coast areas, notably the Chukyo areas. It accounts now for more than 1/5 of Japan's industry and has become more and more specialized in secondary industry.

In addition to this trend, compared with the capital and Kinki regions, Chubu still has the power to expand from the standpoint of water resources, harbours, etc. It is also rich in latent energy in that a great increase in population and labour force is expected, and still more future growth is anticipated in this region.

Secondary industry will expand on the basis of seaside industry taking advantage of geographical conditions such as the harbours with favorable conditions in the Ise, Suruga, and Toyama-Takaoka areas and city industries which will newly develop in inland areas. Tertiary industry is expected to grow in response to progressive industrialization and increased demand for tourism. Primary industry growth is foreseen in high-productivity farming in the fertile Hokuriku region and in the inland highlands.

With the construction of a new transportation and communication network covering the region, which will particularly improve north-south link-ups, economic and social activities can be expanded and in corporation of the regions can be promoted. In developing the economic and social activities of this region through greater links with the Capital and Kinki regions, these activities will contribute to prevention of the overgrowth of large cities in the latter regions.

To promote the development of each area along the above lines in accordance with the characteristics of each, requires providing a basis for industry to meet increased industrial concentration in the Pacific

region and improving city facilities in Nagoya, Shizuoka, etc., where huge concentrations of central management functions are seen. At the same time, the development of city hinterland farming is to be encouraged.

At present the Hokuriku area is being developed as a separate bloc, and has developed while maintaining a close connection with the Kinki and capital regions. In the future, communications with the Chukyo district, and the capital and Kinki region will be smoothed, and city development will be carried out in Kanazawa, etc. Bases will be established not only for the existing concentration of the textile industry but also for the expected basic-resources-type and city-type industries and high-productivity farming. To cope with expanded coastal and international trade, harbour facilities will be improved.

In the inland portion of Chubu, city improvements in Nagano, etc., and provision of an industrial basis for precision machinery industry, other city industries, and horticulture and similar types of agriculture should be carried out. At the same time, there will be increased cultivation on the area's vast forest resources.

Taking advantage of the abundant natural resources of the Chubu regions, expanded tourism in the mountain areas and conservation of the natural environment is envisioned, as is pursuit of conservation and water resource development.

Snow-bound area require not only overcoming snow damage but trying also to make positive use of the snow.

## 2. Plans for Major Development Tasks

In carrying out development along the basic development lines laid out, priority must be given to unifying the Chubu region as well as establishing a smooth, rapid transportation system linked to other regions.

This means considering measures to prevent snow damage in order to keep transportation open during the winter and also construcing the Kan-Etsu Expressway, Chuo Expressway, Tokai Expressway, Hokuriku Expressway, Tokai-Hokuriku Expressway, and Kinki Expressway, and systematically providing trunk national expressways. At the same time, the major railways, such as the Chuo Main Line, Takayama Main Line, Kansai Main Line, etc., must be increased and electrified.

To handle the increased maritime transport resulting from growing

industry requires broad, overall improvements in the harbours at Nagoya, Yokkaichi, Shimizu, Fushiki-Toyama, etc. Nagoya and other airports must be modified to handle larger, faster planes.

In conjunction with the ceration of this basic transportation system, there is a need to improve city functions in Nagoya and its environs where there is a huge concentration of central management functions by setting up a city transportation network including the Second Loop Highway, city expressways, and commuter trains. Large distribution complexes and new towns must be built in the suburbs and the working center of the city developed with high-storied three dimensional space utilization.

City facilities will be broadly and systematically improved in the regional hub cities of Toyama, Kanazawa, Fukui, Nagano, and Shizuoka.

In addition to the above, the following major works will be carried out in each area:

*(1) Pacific Coast Areas*

In areas where further industrial concentration is anticipated such as the Ise and Suruga Bay areas, bases must be provided for basic-resources-type and city-type industries. Priority must be also given improving city hinterland farming based on vegetables and pig and poultry raising. Main fishing ports will be provided at Yaizu, etc., with an eye to developing marine resources and modernizing the fishing industry, and facilities will be set up for development of pisciculture in rivers and lakes.

Meanwhile, in response to increased demand for water, measures shall be taken for river and mountain control and broad development of water resources in the Kiso, Yahagi, and Fuji Rivers.

To meet increased tourist demand, head shall be paid conserving the natural environment in the national parks at Fuji-Hakone-Izu and Ise-Shima, and regions with outstanding scenery, as well as creating tourist routes like the Tokai touring route.

*(2) Hokuriku Areas*

Establishing bases for new basic-resources-type and city-type industries in the Toyama-Takaoka district where there is already a concentration of industry, and providing harbours, etc. at Fukui and so on to handle increased coastal international trade, the plan calls for also constructing nuclear power bases in the Wakasa Bay area and on the

Noto Peninsula.

Meanwhile, to develop high-productivity farming, irrigation and drainage will be improved while grasslands are created for cattle raising in Oku-Note, etc. Along Uchiura coasts of the Noto Peninsula, bases will be established for resources-reproduction-type coastal fisheries.

To develop tourism in this area with its beautiful seaside and mountain scenery means providing a Hokuriku Tourism Route linking Hakusan National Park and Echizen-Kaga Beach and Wakasa Bay Semi-National Parks.

Water resources shall also be developed through water control in the Joganji and kuzuryu Rivers.

*(3) Chubu Inland Area*

Taking full advantage of the rich and varied natural scenery – mountains, lakes, highlands – to create facilities and a central touring route including Chubu-Sangaku National Park, the plan is to also improve the Jo-Shin-Etsu Highlands, Southern Japan Alps, Hida-Kiso River, and other national and semi-national parks, and to step up protection and preservation of nature.

We need to provide bases for fruit, vegetable, and cattle raising in the highlands and to promote active creation of a basis for forestry, such as a artifical forests in the vast wooded region of Kiso and Hida, and forest road construction.

Moreover, we shall provide the baiss for machinery and other urban-type industries in Matsumoto and Suwa districts in accordance with their special features.

## 3. Concepts in Major Development Tasks

In addition to the plans for major development tasks, the following concepts should be gradually planned and implemented in accordance with technological innovations and increased economic strength.

Construction of a new northern trunk line connecting the Hokuriku area with Kinki and Capital regions as well as a second Tokaido Trunk Line, a second Tokaido Expressway, an Ise Bay Bridge, a Wakasa-Tango Expressway, an Ise Bay Coastal Loop Expressway and high-speed railways to reduce further the time and distance between points inside and outside the region and step up regional exchange should be considered. Plans should also be made for the construction of

international airports and international trading ports to cope with increasing international exchanges.

In conjunction with this trunk transportation system, there should be redevelopment and reinforcement of city functions in the Nagoya metropolitan area centering around Nagoya, and an economic sphere embracing Ise and Mikawa Bays should be formed and comprehensively developed. In the area around Ise Bay, a foodstuff processing and distribution base should be provided to cope with increased farm imports, and a distribution and processing base should be constructed to ensure a steady supply of basic materials.

The overall development of areas with development potential such as the Noto Peninsula based on tourism, cattle raising, and power must be considered, as must general research organizations be established to study utilization and overcoming of snow and to provide regional heating and snow-melting equipment for roads and homes.

Meanwhile, consideration should be given the construction of large-scale new towns centering on research and academic organizations and international cultural facilities taking advantage of the rich natural environment of the Mt. Fuji foothills.

Also envisioned is the building of large tourist and recreation bases along the ocean with due consideration to nature conservation at Kumano-nada and Wakasa Bay, etc., increased nature conservation and control, and establishment of large-scale nature preservation areas in the Chubu mountain area.

Meanwhile, large-scale ocean development, including exploitation of subterranean resources of the Japan Sea continental shelf, should be undertaken and the construction of an oil pipeline connecting Hokuriku and Ise Bay planned.

Further serious attention should also be given into the problem of building a canal linking Ise and Wakasa Bays.

# VI. Basic Development Concepts for Kinki

## 1. Basic Directions in Development

The Kinkin region, along with the capital region, forms the economic and cultural center of Japan. With the Kyoto-Osaka-Kobe urban area where huge central management functions are concentrated in its center, this region has shown conspicuous growth.

However, the large urban area suffers from a marked overcrowding of population and industry, and city functions have not been given adequate play. Meanwhile, the development and utilization of the surrounding areas is relatively lagging.

In the future the Kinki region will become more and more the center and link-up of distribution and communication in accordance with the progress in improvement of transportation and communication facilities and development in other regions.

Along these fundamental lines, roads, railways, harbours, and such basic transportation facilities must be built to bring the region closer to other region and improve links within the region. International airports and foreign trade ports will be improved to handle intensified international traffic. Consideration must also be given the establishment of large data centers and scientific and technological centers to cope with technical advances and the information society.

To improve and redevelop the overcrowded cities, there is a need to improve and reinforce central management functions in existing cities, protect these cities against disaster, and eliminate public nuisances, as well as to redevelop the city centers and sub-centers and improve transportation and living environment facilities. In areas vacated by relocation of factories, medium-and high-storied dwellings and park and green areas should be built and city functions purified.

Meanwhile, in the surrounding areas which are undergoing disorderly urbanization, there is a need to create a transportation system for planned urbanization based on a rational land utilization program set up large distribution function districts, new residential districts, research and academic districts, as well as preserve suburban green areas and historic sites to protect scenery and cultural assetes.

In each development region within the Kinki region, steps shall be

taken to improve regional hub cities as development cores, improve roads, harbours, land and water, and other industrial prerequisities, and accept the population and industry dispersed from existing cities in a planned manner.

Moreover, to meet increased demands for tourism and recreation, should be developed southern Kii and the Inland Sea and Japan Sea coast areas and with due consideration to preservation of rich natural resources plan for land conservation and overall development of water resources.

## 2. Plans for Major Development Tasks

In carrying out development along the basic lines laid out, a high priority must first be attached to a transportation system which will allow a rapid, smooth flow of traffic between the Kinki and other regions and within the Kinki region itself.

Therefore a Hokuriku highway, a Kinki high way, a Chugoku thru-way, a Sanyo highway and a Honshu-Shikoku connecting bridge from Kobe to Naruto must be built and the basic national highway system improved in a planned manner. As far as railways go, steps must be taken to build a new Sanyo trunk line and a Kosei line, convert the Kansai Main Line and other major lines to electricity, and increase the number of lines. Harbour facilities, must be improved coping with an increase in harbour freight, especially in Osaka Bay and all the harbours along the Kii Channel. Moreover, to cope with increased air transport demands, prompt study should be given the constructing a new Kansai International Airport as well as improving Osaka International Airport. Harbours along the Fukui Japan Sea coast should also be improved to handle expanded coastal trade.

In conjunction with the creation of such a basic transportation system, the following major tasks should be systematically carried out in each district.

To check the disorderly concentration of all kinds of functions in existing city areas, requires steps to purify city functions including central management functions. Improvement of city centers and subcenters will help meet the increased demand for working space, and redevelopment the need to have home and work spaces located as close together as possible through allocation of high-rise residential districts in the surrounding areas. To improve the environment in areas with an

overcrowded mixture of low-rise residences, stores and factories, to high-rise construction should be encouraged and factories and warehouses relocated. Culture centers should also be set up with advanced scientific and technical functions.

In the areas surrounding the existing cities, large-scale distribution-business areas should be developed with warehouses, trucking terminals, wholesale markets, etc., at major shipping facility articulations should also be built, as should new residential districts with improved living environment facilities as well as research-academic cultural districts. We need to provide the industrial base for the dispersal of factories from existing cities and the planned development of city-type industries be provided.

Furthermore, to cope with increased demand for transport between existing cities and surrounding areas, prorisions should be made for roads between major cities, such as the Hanshin Expressway, as well as subways and other ruban high speed railways and suburban railway tracks.

In order to improve the city environment and protect it against disaster as the metropolitan suburban areas have recently become more urbanized, coastal disaster prevention facilities should be set up and city and suburban rivers and sewage improved.

With an eye to the balanced development of each area in the development sphere, regional hub cities should be set up in Harima, Fukui, central and southern Ise coast, eastern Lake Biwa, Kyoto and central Tamba, Wakayama, Iga, etc., and the even development of an industrial base (trunk roads, railways, ports, industrial land, and water) and living environment facilities encouraged. An atomic power generator base should also be built on suitable locations near Wakasa Bay, etc.

With regard to agriculture, forestry and fishery, steps should be taken to improve the land base including irrigation facilities in the major river basins and in the area around Lake Biwa, create pig and poultry raising, vegetable, and fruit producing area aimed at the large consumption areas, and improve related facilities. Encouragement should also be given construction of forest roads and artificial forests, improvement of fishing ports, creation of cultivated and breeding fishing grounds.

With regard to land conservation and development of water resources, there is a need to encourage river improvement in accordance

with the growth of each region and, in order to meet sharply increassed water demand accompanying recent urbanization, to develop water resources from the broad overall standpoint of resource development in the Yodo River (including Lake Biwa) and the Kinokawa, Kumano, and Harima rivers to guarantee adequate city water and industrial water in coordination with the demand for water for agricultural use.

To meet future tourism demand, steps will be taken to preserve the nature resources of Ise-Shima, Yoshino-Kumano, the San'in Coast, and the Inland Sea National Parks, as well as the Echizen-Kaga Coast, Takano-Ryujin, Lake Biwa, and Suzuka Semi-National Parks, the Tajima mountaion region, and the area around Mt. Hiragi, and to create touring and recreation facilities to take advantage of the areas' special features.

Moreover, in cities where urbanization may lead to their destruction, such as Kyoto, Nara, Osaka, and Shiga, histroic scenery and cultural treasures should be protected and suburban green areas such as Rokko and Ikoma should be preserved.

### 3. Concepts in Major Development Tasks

In addition to the plans for major development tasks, the following concepts should be studied carefully, and eventually planned and implemented as technology improves and economic strength grows.

To draw inter- and intra-regional traffic still more closely together, consideration should be given building a trans-Chugoku highway, San'in-Hanshin connecting highway, Wakasa-Tango highway, Osaka Bay loop road, second Meihan (Nagoya-Osaka) highway, Ise Bay bridge, Kinan (southern Kii) highway, new northern railway trunk line, second Takaido line, new San'in trunk line, and Honshu-Shikoku connecting railway. To handle increased demands of international airways, a new Kansai International Airport should also be planned.

In conjunction with modification of the transportation system, plans should be made for broad, overall development of the Osaka Bay-Kii Channel area and the Ise Bay coast area in particular. In order to guarantee a steady supply of basic resources in the area around Osaka Bay, distribution and processing bases should be set up and construct food-processing and distribution bases built to handle increased farm imports.

To cope with the future increased demand for data processing in

the rapidly expanding information society, large data centers should be set up in the Osaka-Kobe area which possesses central control functions second only to Tokyo, and the city centers fundamentally reorganized with these as nuclei.

Overall inclusive touring routes for city tourism should also set be up in Kyoto and Nara as well as natural scenery sightseeing in the Ise-Shima, Inland Sea, Tajima mountains, and Lake Biwa areas. As a part of this, large, marine recreation bases should be built with marine parks in southern Kii, Wakasa Bay, and the San'in coast. Consideration should be given the construction of large-scale social welfare facility districts and youth centers in southern Kii, Awaji, and Wakasa Bay areas, as well as large recreation centers for young people in the area around Lake Biwa with its good transportation and weather conditions.

# VII. Basic Development Concepts for Chu-Shikoku

## 1. Basic Directions in Development

The Chugoku and Shikoku regions face each other across the Inland Sea. They also have a close connection with the neighbouring Kinki and Kyushu regions, and they have seen special forms of development as individual blocs. At present, Chugoku and Shikoku are separated by water and smooth regional traffic has been hampered by the Chugoku and Shikoku mountain ranges and other geographical obstacles. Slow improvements in the transportation networks linking these regions to others and joining places within the region, and other backwardness have caused a considerable lopsidedness in the development of the various areas. Development should be carried out separately for each area. Characteristic expansion can be expected through exchange with neighbouring Asian countries.

However, the formation of a new transportation network will overcome these obstacles to development and the bridge linking Honshu and Shikoku will be a spur to regional unification. Meanwhile, the Inland Sea area which runs through the Chugoku-Shikoku area will take a leading role in the development of this sphere as a broad economic area with a combined concentration of cities and industries. At the same time, the San'in and Pacific coast areas will develop in response to the expansion of the Inland Sea economic sphere and will see varied development as a new industrial development center or to satisfy increasing demands for foodstuffs and tourism.

In short, this region will enjoy closer organic ties with the neighbouring Kinki and Kyushu regions and serve as one central region in the economy of western Japan. Moreover, as a part of the suburban belt around the Megalopolis in Japan including the Capital, the Chubu, and Kinki regions it will assume a rational relationship of divided responsibility with them and develop in an integrated manner.

To develop in accordance with the particularities of each area along these lines, major traffic lines shall be built linking Kinki, Chugoku, Shikoku, and Kyushu, including a bridge connecting Honshu and Shikoku in the Inland Sea area. At the same time, further concentration and advancement of urban functions is planned in

regional hub cities and Hiroshima where central management functions are concentrated. The need is to improve the industrial base to handle increased, expanded concentration of existing industry in the coastal areas and to provide a base for intensification in vegetable, pig and poultry raising, and fruit producing areas, and for planned development of distribution and processing facilities, as well as cultivated and breeding fishing grounds. The varied and intensified use of the Inland Sea coastal area for industry, fisheries, and tourism is expected and will require that we consider utilization zoning in accordance with the suitability of each district.

For smoother traffic between Sanyo and San'in, there should be built a trunk line crossing the inland Chugoku area from the San'in area to the Inland Sea area and at the same time, steps should be taken to strengthen the functions of regional cities in their role as nuclei for broad activity zones in the San'in area. In industrial development, provisions should be made for the industrial base for the machine, lumber, and food industries expected to emerge in the future as well as for a production-distribution base for the development of farming, pig and poultry raising and, in the mountainous areas of Chugoku, cattle raising. We should also improve all facilities to handle developing coastal and other international trade.

In the Pacific coast area, improves must be made in the basic transportation system and the regional cities to cope with wider living and industrial activities. In industrial development, improves are needed in the base for the formation of an open-sea industry base and to encourage formation of a major vegetable and pig and poultry raising area. Overall improvements should also be carried out in distribution-related facilities in this outstanding fresh food producing area (vegetables, livestock, fish, and shellfish).

Advantage should also be taken of the varied natural beauties of this region with its coasts, highlands, and islands by creating vast touring recreation routes joining national and semi-national parks and planning for the preservation and protection of nature. Encouragement should be given the overall development and utilization of water resources and the planned cultivation of forest resources in mountain areas as well as plans for land conservation.

In recent years, there has been a conspicuous population decrease in the region's mountain villages and offshore islands, necessitating

active work to promote industrial development and improve living environment conditions in these areas.

## 2. Plans for Major Development Tasks

In promoting development along the basic lines laid down here, the Chugoku and Shikoku areas must first be unified and a high priority given to improving the transportation system organically linking them to the Kinki and Kyushu spheres.

This means planning bridges joining Honshu and Shikoku between Kobe and Naruto, Kojima and Sakaide, and Onomichi and Imabari. Measures should be studied to prevent snow damage, ensure uninterrupted traffic in winter, and promote the construction of a horizontal trans-Chugoku highway, a Sanyo highway, a vertical Chukoku highway, a vertical Shikoku highway, and a horizontal trans-Shikoku highway while improving basic national roads in planned manner. A new Sanyo trunk line should also be built. Priority should be given to improving connections between Sanyo and San'in in Chugoku and the circulatory traffic system in Shikoku and to improving Kanmon and other major harbours as focal points for industry, distribution and tourism as well as creating trunk steamer lanes in the Inland Sea to permit navigation by large ships. To handle expanded coastal trade, there is a need to improve ports on the Japan Sea coast. Also, larger, faster aircraft will necessitate improvements in major airports.

In conjunction with these changes in the basic transportation system, plans should be made for more advanced city functions for creating a vast city sphere in Hiroshima where there is a large concentration of central management functions. Steps should also be taken improve transportation, communication, and distribution facilities as well as carrying out broad-ranging functional improvements in various facilities systematically in each of the regional hub cities in accordance with the particularities of each, and care should be taken to improve the cities which should serve as focal points in rural areas to improve environmental conditions.

In conjunction with these improvements in the transportation and communication network, the following tasks should be planned and implemented for each region.

*(1) Chugoku Area*

In the area along the coast of the Inland Sea from southern

Okayama to Suo-nada,improvements are needed in the base for introduction of machine and other city-type industries which are expected to undergo new expansion as urbanization proceeds and for plans for coordinated organic development. Meanwhile, the base for development of the lumber, food and machniery industries in the San'in region centering in the Nakanoumi district should be improved, an atomic power plant built, and the development of black ore and other subterranean resources encouraged.

With an eye to creating crop farming, vegetable, pig and poultry raising and fruit producing areas, improvements should be made in land base through soil improvement and reclamation as well as improving distribution and processing facilities. Active steps shall be taken to engage in ceration of artificial forests in the mountains and improve the overall base for the creation of collective cattle producing belts using the vast, gentle slope areas to improve the base for cultivated and breeding fishing grounds in the Inland Sea, and to give a high priority to creating new fishing grounds in the Japan Sea as well as improving Shimonoseki and other major fishing ports.

Special tourist resources such as Daisen-Oki, San'in Coast and Inland Sea National Parks should be developed and broad touring routes and improved facilities created with due heed to conservation of nature resources.

Along with the overall development of the Enokawa river, there is a need for land conservation and development of water resources by building rivermouth lakes on the Ashida and other rivers. In the islands of the Inland Sea, facilities should be improved for water utilization through linking the islands by bridges. In the mountain areas of Chugoku where population is decreasing drastically, the development of each region should be pushed in accordance with its special nature while improving living environment facilities.

Systematic, functional improvements should also be made in the facilities of the hub cities of Tottori, Matsue, Okayama, and Yamaguchi.

*(2) Shikoku Area*

In industry, there is a need to improve the base for existing concentrations and new expansion in the Inland Sea coast area extending from Tokuyama through central and western Sanuki to easten Iyo and Matsuyama in organic relation to the Sanyo and

Osaka-Kobe industrial belts to improve industrial development of this region and raise the level of its industrial structure, as well as to improve the base for industry on the Pacific coast, centering in the Kochi district.

With regard to agriculture, forestry, and fishery, work is needed to intensify major vegetable, flower, fruit, and pig and poultry raising areas. Plans should also be made for opening up cultivated breeding fishing ground in the Inland Sea and functional strengthening of Pacific coast bases for pelagic fisheries. Distribution related facilities, including fishing ports, must be improved and expanded to make the areas a major food supply base for vegetables, livestock, and seafood aimed at large consumption areas. Also, in order to develop the forests around Mt. Tsurugi and in southwestern Shikoku, build forest roads should be built and large artificial forests created.

In mountain villages where population is decreasing drastically, work is needed for the development of industry and improvement of living environment facilities as appropriate.

The varied, rich natural scenery of this region should be conserved and take advantage of in a route around the Shikoku coastline and a touring route covering the islands of the Inland Sea, and the Iya valley and southwest coast improved for relaxation areas.

Furthermore, to ensure water for city and farm use and land conservation, the Yoshino and other rivers should be developed.

Steps should also be taken to promote systematic, functional improvement of facilities in the regional hub cities of Tokushima, Takamatsu, Matsuyama, and Kochi in accordance with the special features of each.

### 3. Concepts in Major Development Tasks

In addition to the plans for major development tasks, the following concepts should be studied carefully and eventually planned and implemented as technology improves and economic strength grows.

In addition to planning the construction of new trunk railways linking Honshu, Shikoku, and Kyushu, efforts should be made to reduce the time and distance between places in the region and improve traffic by building a new San'in trunk line, a new trunk line linking Sanyo and San'in, a San'in coastal expressway, a trans-Chugoku expressway, a southern Pacific coast expressway, a figure-eight loop

expressway in Shikoku, a Kannon main road, and bridges linking the islands of the Inland Sea and to plan for the construction of an international airport.

In response to these improvements in the transportation system, broad, overall development of the Osaka Bay-Kii Channel area should be implemented based on a loop-route joining Tokushima, Hyogo, Osaka, and Wakayama, including a Kobe-Naruto bridge. Plans also include the overall development of a broad economic sphere in the eastern Inland Sea area centering on a Kojima-Sakaide bridge and encouraging the development of a western Inland Sea economic sphere centering on a loop route connecting Hiroshima, Ehime, Oita, and Fukuoka with a bridge from Onomichi to Imabari, particularly through building a large industrial base centering on basic-resources-type industries in the area around Suo-nada.

Plans should be made for the construction of oil import bases on the Pacific coast and for the construction of a pipeline along the Inland Sea coast as a means of shipping large quantities of liquids organically linking the industrial bases along the coast.

Furthermore, forests and parks in the Chugoku mountains and forests in Shikoku should be designated for tourism and conservation of natural resources as well as carry out development of underground resources of the Japan Sea continental shelf, etc. Plans should be made for the construction of a 'skyline' across the Shikoku mountain range and marine parks at Uwa and Ashizuri to take advantage of the rich natural beauty of the Shikoku region along with the setting up of artistic villages on the Inland Sea islands and ocean-earthquake forecasting and typhoon observation centers on the Pacific coast.

# VIII. Basic Development Concepts for Kyushu

## 1. Basic Directions in Development

Compared to the remarkable development of the Metropolitan area recent years, Kyushu is relatively backward and its position in the national economy has been gradually falling behind.

This situation is caused by such economic factors as slow agricultural modernization, an industrial structure leaning heavily on production of raw materials, the decline of the coal industry and its decreased weight in international trade, and by such geographical factors as its location at the southern tip of Japan, its many offshore islands, its special soil areas, and the fact that inter- and intra-regional transportation development has been slow: all of which are strong limiting factors on social and economic activities in this bloc.

However, Kyushu does have a mild climate, plentiful land suited for development, rich water resources, many good harbours, varied scenic resources, and an abundant supply of labour as well as the geographical advantage of being near the Continent and Southeast Asia.

Thus, in response to further expansion and growth of high-density economic society, this region can be expected to undergo rapid industrialization and quick development as a notable food supply base, as a large tourism area to handle increased demand for touring, as an international trade base in the growing trade with South-East Asia, etc.

To develop the region along these lines with due consideration to its special features, it is necessary to overcome its remoteness and backwardness by setting up a basic transportation system running through Honshu and Kyushu and covering the region itself, and by improving the regional hub cities and strenghtening intra-regional links through fostering a new social and economic environment.

In regard to agriculture, a high priority should be assigned providing an advanced land base in the high paddylands around Ariake Sea, creating large grasslands for the formation of cattle raising bases using the vast grassland resources of the central and southern highlands, as well as improving the bases in the eastern and western fruit belts and in the dry fields of the south. In regard to fisheries, the base for seafood resource cultivation should be improved in the western coastal region.

With regard to industry, greater productivity and a more advanced industrial structure should be anticipated through high-priority improvement of the bases for basic-resources-type and city-type industries in northern and central Kyushu and basic-resources-type-industry in eastern and southern Kyushu.

Planned deployment of material distribution facilities should be attempted according to the production structure of each area and to improve basic harbours and airports as trade bases.

Development of the abundant nature resources that cover the region should be promoted with due regard to conservation and to providing a broad touring route connecting them all.

Land conservation and development of water resources should also be promoted.

With regard to the offshore islands, there is a need to ensure convenient transportation and communications between the mainland and the islands and between the islands themselves. Meanwhile, active steps should be taken to improve the base for industrial development and promote a better living environment.

There is also a need to carry out active improvement of the environment through industrial promotion, etc., in the coal producing areas.

## 2. Plans for Major Development Tasks

In developing along these basic lines, priority must be given to increased inter- and intra-regional exchanges and an improved transportation system for the expansion and development of the regional economy.

In other words, in regard to roads, a Kanmon (Shimonoseki-Moji) Highway linking Kyushu with Honshu, a connecting Kyushu vertical highway, and a trans-Kyushu highway should be built for smoother east-west traffic and basic national roads should be improved in a planned manner. In the case of railways, the number of lines should be increased, the Kagoshima Main Line, Nagasaki Main Line, and Nippo Main Line, should be electrified, and a new Kyushu trunk line should be built extended from Honshu. To meet increasing passenger and freight traffic by sea, improvements are needed in the major harbours such as Kanmon harbour and facilities for maritime shipping of farm products by cold-chain system from Miyazaki and so on in southern

Kyushu. To meet future airline demands, Fukuoka Airport and the major regional airports at Kumamoto, Kagoshima, etc., should be improved to reduce Kyushu's remoteness. For better traffic back and forth between the offshore islands, connecting bridges, airway routes, harbours, and airports are needed.

In conjunction with these improvements in the transportation system, planned improvements are needed in the political, economic, and cultural functions of the large urban spheres of Fukuoka and Kita-Kyushu as well as the regional hub cities of Saga, Nagasaki, Kumamoto, Oita, Miyazaki, and Kagoshima, and distribution bases must be established in accordance with geographical conditions at Tosu, etc.

In regard to farming, forestry and fisheries, in order to make the region a large food supply base using its outstanding geographical conditions, it is necessary to improve the land base in the paddy belt in the plains around Ariake Sea, create grasslands for the development of cattle raising in the central and southern highlands including Aso-Kuju, Kirishima, etc., improve the base for the mandarine orange and other fruit producing areas in the east and west, and improve the general base for livestock and horticulture in the dry fields in the south. In the central mountain rainy belt, artificial forests and a network of forest roads are needed. To meet the growing demand for high and medium-grade seafoods, improvements should be made in the base for resources-reproduction-type fisheries grounds on the coast near Nagasaki and other western areas. In addition to intensifying livestock, vegetable, fruit, and seafood producing areas, distribution facilities should be allocated in a planned manner.

With regard to industry, steps should be taken to improve the basis for the active introduction of new urban industries such as machine and metal industry in addition to existing concentrations in the urban belt which stretches from Kita-Kyushu to Kumamoto and in the western Kyushu area around Nagasaki, Imari, etc. Improvements should also be made in the basis for basic-resources-type industries in Oita, Nobeoka, Hyuga, etc.

Meanwhile, this region is rich in grandiose natural scenery, cultural treasures, and other tourist resources, and, since is an important tourist region even in an international sense, adequate consideration must be given to conservation of these resources and to improving Aso National

Park and semi-national parks such as Nichinan Coast Semi-National Park and creating a broad touring route around Kyushu, including the offshore islands.

In response to future increases in the water demand, there is a need to plan for positive development of water resources by promoting water control and utilization works in the Chikugo and other major rivers and providing facilities to guarantee water to the offshore islands.

A nuclear power generator base should be built in the district around Imari Bay and a space development base on Tanegashima.

In the Chikugo area and other coal-producing regions, steps should be taken to improve the basis to promote industry and to work actively for the overall improvement of the living environment.

### 3. Concepts in Major Development Tasks

In addition to the plans for major development tasks, the following concepts should be studied carefully and eventually planned and implemented as technology improves and economic strength grows.

In response to broader, more rapidly paced economic and social activities, the need is to increase economic and cultural exchanges between major cities in and outside the region by building a new Kyushu trunk line running to southern Kyushu to join Fukuoka and Kumamoto as well as a new western Kyushu trunk railway, a new trunk line connecting Kyushu and Shikoku, an eastern Kyushu vertical highway, a western Kyushu highway, a trans-central Kyushu highway, a Kyushu central highway, a southern trans-Kyushu highway, and a highway linking Kyushu and Shikoku. To meet increased international traffic, international airports should be built in view of the geographical location of this bloc in Japan.

With regard to agriculture, the area should be made a notable cattle raising base by large grasslands improvement in the central and southern highlands which are rich in grassland resources and construction of production and distribution related facilities. In the area around Ariake Sea, advanced water control and large-scale mechanization will allow the formation of a leading high-productivity rice-farming belt.

With regard to industry, steps should be taken to promote the development of the coastal area of Fukuoka and Oita facing the Inland Sea as a part of the western Inland Sea economic sphere and to build a large industrial base centered on basic-recources-type industry in the

Suonada area, while the Shibushi Bay area should be made an open sea industry base and basic-resources-type industry should be introduced.

Considering overall ocean development including development of the underground resources of the continental shelf running from the Japan Sea to the East China Sea, plans should be made for the closing up of Ariake Bay for the purpose of new developments in agriculture, industry and disaster prevention.

Advantage should also be taken of the geographical features of Southern Kyushu to set up organizations for cooperation in the development of Southeast Asia as well as to set up general research and academic towns.

The idea of setting up a new international trade area at Nagasaki should also be considered.

# PART III. MEANS TO ACHIEVE THE PLAN

To attain the objectives of this plan by actually putting it into effect, it is basically necessary to create an environment which can give full play to man's creative abilities by taking a second look at all existing systems and practices in view of the ultimate objectives for the comprehensive development of the nation. Right now specific examination should be made of the following points in order to strengthen and improve regional development systems as well as to create new systems and to make other radical reforms.

## I. Basic Objectives

### 1. Implementation of Large-Scale Development Projects

In selecting large-scale development projects, a Planning Memoranda, Special study, Planning, Programming, and Budgeting system should be established and comprehensive and scientific selection carried out on the basis of effectiveness determination by systems analysis. Corrdination must also be maintained between the comprehensive development plan and large-scale development projects and among large-scale projects themselves and to control them from an overall standpoint of effective implementation. To this end, study should be given methods of selection and control of large-scale development projects.

The working body in a large-scale development project must be an organization capable of raising funds and implementing the task efficiently. Thus, for example, in industrial development projects and soon, methods appropriate to the nature of the large-scale development project should be adopted, such as 1) establishing a public-private working body at the core of the project to introduce private capital, 2) creating of a new company formed by combination of firms expected to move into the field in question, and 3) requesting the participation of private developers to the type 2), and 4) other methods suited to large-scale development projects.

## 2. Promotion of Broad Development Administration

For promotion of broad administration, basic reforms are needed in the national and local government administration systems. In particular, smoother promotion of broad development administration crossing over prefecture, or village and town boundaries is needed. This means the following items should be studied as soon as possible.

(1) As the standard of living is rising and motorization is becoming more widespread, new larger activity zones are being formed. These living spheres should be taken as broad activity zones and there must be a suitable provision of all facilities in the spheres to ensure a living environment of a given level to the inhabitants of the spheres.

Therefore, study should be given to the following measures.

a. Legislation for determining of broad activity zones and drawing up development and improvement plans for them.

b. Measures regulation for land procurement and utilization and necessary regulations for carrying out development and improvement plans by related regional public organizations.

c. Measures for implementing of development and improvement plans in the regions.

d. Measures for regulating of various land utilization plans.

e. Mesures for improving of regional connecting roads and other broad activity zones facilities.

In the organization of these broad activity zones, measures should be taken permitting freedom of choice in accordance with the type of work handled there and the degree of unification of cities, towns, and villages in the spheres. In this case, care should be taken to share functions on a basis of united cooperation in the sphere as a whole.

(2) In order to achieve smooth development administration in broad regions transcending city or prefectural boundaries, study should be given improvements in a broader regional independent administrative system in relation to the following functions:

a. Those functions currently in the competence of city or prefectural governments according to various regional development related laws, which are suitable for handling by a broad regional admininistrative system.

b. Those functions currently in the competence of the national government under various regional development laws which are suitable

for handling by a broad regional administrative system.

c. Those functions concerned with the encouragement of large-scale development projects.

These broad regional administrative systems should be adjusted to suit the special nature of each region.

## 3. Land Problems

Fundamentally, the course of solution to the land problems lies in getting rid of the present lop-sided concentration of land utilization in cities (1.2 percent of the area of the nation) and suburbs and in the Tokaido and Sanyo regions. Development potential must be spread throughout the nation to encourage more effective land utilization.

However, the problem for the time being is the acquisition of public land and the ensuring of residential sites.

With regard to acquiring public land, it is necessary that the residents concerned adequately understand its importance and make a firm principle of giving priority to the public good. Measures should be examined for setting standard prices, enchancing public bodies' right to purchase land in advance or endowing them with rights to purchase more land than is necessary for present use, regulation of distribution of development benefits using the system of cost allotment according to benefits received etc., and increasing public land holdings.

With regard to ensuring land for residential use, there is a need to build large new city areas, gradually and systematically convert farm land around cities into residential areas, increase three dimensional, high-rise use of city space, and examine special measures to facilitate these things. As one aspect of residential measures in large cities, measures must be taken to induce land owners to provide large numbers of medium and high-storied rental dwellings in accordance with the work and life-cycles of those living in large cities, and this will require examination of special finance and taxation measures.

In relation to regulation of land utilization plans, each plan in city planning zones, zones to promote agriculture etc., should be set up in accordance with the basic lines of higher land utilization plans and directions in conformity with legal precedents giving prefectural governors the powers required for land utilization planning. Consideration should also be given coordinated regulation of planning by the governors and studies should be made to coordinate large-scale

development projects and land utilization plans.

Meanwhile, study should be given reform of land taxation measures, such as more appropriate appraising of fixed assets, increased city planning taxation, more suitable taxation on marginal profits on land transfers, and more effective tax exceptions on purchased assets.

### 4. Priority Assignments in Fiscal Administration and Finance

Appropriate measures regarding fiscal administration and finance must be discussed to effect an overall check on development policies such as the resource development type and underdeveloped area development type methods instituted after the war, the industrial type and centralized type followed later, and now the urban concentration type in order to carry out new development policies effectively.

In relation to special fiscal measures taken in the past, it is necessary to re-evaluate the effects they are having, continue those which can still be expected to produce results, and change or do away with the rest.

Therefore, it is necessary to examine measures for reorganizing special measures in old tax and financial administration, ensure development capital under a new policy consciousness and, assign priorities in fiscal administration and finance in accordance with the course of changes and growth in the economic society.

## II. Special Objectives

### 1. Providing New Networks

In providing new networks as a means for effective utilization of the entire national land plans for improving all high-speed transport facilities and guaranteeing the early and smooth completion of all tasks should be regulated.

This requires examining methods of overall regulation of all the facilities planned separately, i.e. expressways, new trunk line railways international harbours, and airports. To make sure that these tasks are completed, suitable criteria are needed for determining which shall rely on public funds and which shall rely on toll payments, etc. and an appropriate charge system. Consideration should also be given financial measures such as repletion of specific revenue sources, financing, interest supply, etc.

The improvement of hub cities should be pushed forward strongly based on new City Planning Law and so on.

### 2. Development of Cattle Raising and Forestlands

Beginning with rectification of imbalances in the farm product price system, it is necessary to expand overall policies through total reforms in agriculture to develop cattle raising. This includes improving of the land utilization system to establish a feed base and setting up policies for effective use of national forests and collective control organizations for calf-raising, etc.

In large-scale stock raising development regions a system is needed to plan and implement the development of other industries and improvement living environment facilities, and study should be given a system of carrying out unified works through creation of semipublic administrative bodies.

In the development of forestry in under-used forest lands, a comprehensive forest development system should be established for development of both forestry (using a new system of accepting work) and livestock, tourism, etc.

### 3. Construction and Renewal of Industrial Bases

In building large industrial bases in remote areas, a system is needed for overall planning and implementation of improvements in the foundations for industry and the living environment using both private and social overhead capital.

Thus it is necessary to set up a working body on a mixed public-private system for these central development tasks, institute special measures for acquisition of land for these bodies, and study measures for the overall improvement of living environment facilities such as schools and the like.

With regard to the renewal of existing large urban industrial belts, consideration should be given establishing the principle of allotment corresponding to profit, increasing restrictive measures on location of new plants, and giving preferential tax treatment to factories which disperse. There should also be a low interest funding for a public organization to buy up land vacated by factories and ensure the funds for acquisition of land and facilities for new dispersed factories.

Guarantees must be given the appropriate deployment of industry throughout the country and consideration given regulations and guidance on new industry location, development of public nuisances prevention techniques, creation of an public nuisances monitoring network, and aid to public nuisances prevention facilities to guard against the production public nuisances accompanying new location of industry.

### 4. Preservation of the Natural and Historical Environment

For the very long-term protection and preservation of the natural and historical environments which are our national assets it is important to amplify systems related to conservation of them and set up policies to harmonize conservation of the nature with urban and industrial expansion.

In areas which should be particularly rigidly protected, control systems should be reinforced by using, for example, national forest works. Public ownership of land should be increased of necessary through a better land purchase requisition rights system.

In regions used nature as recreation spots and so on, consideration should be given a system of assigning responsibilities for protection and

preservation to those using them and those profiting from them.

## 5. Improving the Living Environment

To improve the living environment, it is necessary to create broad activity zones along with planning for strong promotion of environmental improvements.

Therefore, study should be given executive bodies and distribution of the cost burden in accordance with regional situations and types of policies.

Particularly in areas with sharp growth or decrease in population, special measures regarding finances and administration of villages and town should be considered to give a strong push to the following policies:

(1) Areas with sharply decreasing population.

a. Improvement of schools, clinics, and other living environment facilities.

b. Improvement of transport facilities leading to central zones of the settlement.

c. Movement and consolidation of settlements.

(2) Areas with sharply increasing population.

a. Planned improvement of roads, schools, parks, water, sewage, and garbage disposal facilities.

b. Provision of facilities related to growth of large residential complexes.

## 6. Redevelopment of Metropolitan Areas

In future redevelopment of Metropolitan Areas, it is necessary to establish system positively to form a functional urban structure.

This means, firstly, speeding up legislation regarding urban redevelopment works. In this case, special measures are necessary for evacuation centers and evacuation roads in the district subject to damage of disaster, for example, in Tokyo's Koto district.

Secondly, it means trying to introduce and use private capital, inclucate the principle of responsibility in proportion to profits, insure a long-term low-interest fund, and consider encouraging private developers to work for redevelopment.

## 7. Others

In addition to the above, we should study other systems required to carry out this plan should also be studied.

## III. Studies and Research on Regional Development

Data necessary for regional development planning are very incomplete. Data on land, on production, and on living in small districts are particularly inadequate, and a scientific methodology for regional development is tacking.

Thus, a primary survey should be quickly completed to make a broad probe into changes in land utilization and then carry out a real study to clarify the special nature of each area against a fixed grid. Moreover, to determine natural conditions and resource deposits throughout Japan a survey should be made of geological structure, weather, underground water, etc. In order to clarify the relationship between ownership and utilization of land, we should complete a land registration survey in major areas according to a new ten-year plan which we should establish hereafter. In carring out land studies, it is necessary to develop new revolutionary, new survey techniques, to make use of computers for the processing and analysis of masses of data, and perhaps to set up a data center to use these results.

Consideration must be given to establishing comprehensive research organizations to carry out studies on scientific methodology for regional development.

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## IV. Laws and Ordinances for Regional Development

Laws and ordinances concerning regional development have been laid down in accordance with various time and regional exigencies and have played suitable roles, but the body natures, and means to carry out each plan based on these various laws have come to lack unity and are very complex.

In other words, while in the beginning the national government was put in charge of many plans, recently regional governments have often taken charge and regional participation has come to be thought desirable. In nature, plans have shifted their focus from resource development to improvement of the living environment. The means of realizing these plans also varies depending on the time or place the legislation was enacted, with recent trends toward stepped up assistance measures in tax policy, financing, etc. The lack of an overall systematic basis has become a problem. Moreover, as administrative organization becomes more complex, there is a greater need for comprehensive control.

Under these circumstances, consideration should be given systematic modifications in laws concerning regional development, including revision of the Comprehensive National Land Development Act, and reexamination of the development promotion laws of each region and laws on the development of specific regions. Consideration should also be given setting up an overall development administration organization.