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ABSTRACT

In recent years Zambia has experienced increasingly grave financial problems. The decline in the economy has affected all sectors, including education. The deterioration occurred at a time when the population was growing at a rapid rate. Hence the education sector has been subject to two opposing pressures: a fiscal pressure to curtail financial commitments and a demographic pressure to increase the provision of education. The outcome has been a virtual stagnation in resource allocation, a substantial increase in enrollments, and, in consequence, a reduction in unit expenditure. Nevertheless, public confidence in education as an instrument of development remained high. Even the most indigent people did not question the need to make substantial sacrifices so that the children could have a school education. Although not every problem was solved, the years 1980-1985 showed more determination, confidence, and maturity than the previous 5 years on the part of teachers, administrators, and the general public, who cooperated in what was in effect a massive rescue operation to expand and improve the provision of education. This report presents a portrait of Zambian education during the years 1975-85. There are 19 chapters: (1) The impact of economic decline of education; (2) The development of education in Zambia before 1975; (3) The decline of Zambia's economy; (4) Demography; (5) The financing of education, 1975 to 1985; (6) Financing education: some critical issues; (7) Official development assistance for education; (8) Nongovernmental resources for financing education; (9) Educational provision at the primary and secondary levels; (10) The quality of education; (11) Curriculum issues; (12) Evaluating educational performance; (13) The teacher during the years of economic difficulty; (14) The pupil in school and afterwards; (15) Educational supervision, planning, and decisionmaking; (16) Continuing education programs; (17) The University of Zambia during the years of economic difficulty; (18) The general level of education; and (19) The robustness of the education system. There are numerous tables of data throughout the report and an eight-page list references is included. (Author/DB)

Education in a Declining Economy

The Case of Zambia, 1975–1985

Michael J. Kelly

EDI Development Policy Case Series
Analytical Case Studies • No. 8

Education in a Declining Economy

The Case of Zambia 1975-1985

Michael J. Kelly

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Abbreviations

A-level	advanced level
BSAC	British South Africa Company
CDC	Curriculum Development Centre
CIDA	Canadian International Development Agency
CSO	Central Statistical Office
ECA	Economic Commission for Africa
EEC	European Economic Community
EIU	Economist Intelligence Unit
FAO	Food and Agriculture Organization of the United Nations
FINNIDA	Finnish International Development Agency
GRZ	Government of the Republic of Zambia
ILO	International Labour Organisation
JSSLE	Junior Secondary School Leaving Examination
NGO	nongovernmental organization
NORAD	Royal Norwegian Development Agency
NRG	Northern Rhodesia Government
OECD	Organisation for Economic Co-operation and Development
O-level	ordinary level
SHAPE	Self-Help Action Plan for Education
SIDA	Swedish International Development Authority
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFSSTD	United Nations Financing System for Science and Technology for Development
UNICEF	United Nations Children's Fund
UNIP	United National Independence Party

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I trust that this study will contribute to an understanding of the way an education system can survive when the financial climate is hostile, and how it can even be strengthened once the system has come to grips with the adverse circumstances. Such knowledge might help policymakers provide better for the needs of children, even when resources are scarce.

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Preface

During the past 12 years, Zambia has experienced increasingly grave financial problems. The decline in the economy has affected all sectors, including education. The deterioration occurred at a time when the population was growing at a rapid rate. Hence the education sector has been subject to two opposing pressures: a fiscal pressure to curtail financial commitments and a demographic pressure to increase the provision of education. The outcome has been a virtual stagnation in resource allocation, a substantial increase in enrollments, and, in consequence, a reduction in unit expenditure. The government has financed the growing education sector by reducing the real incomes of teachers, allowing a withering away of public funds for all but the most essential salary payments, relying more heavily on contributions from the community and participation by the private sector, and turning to foreign aid for general budgetary support.

The subsectors of education have not been equally affected, however. Those considered more prestigious have been maintained and have even increased their share of resources, while those less powerful have experienced the greatest losses. Thus, the overall allocation of resources shifted from the primary and secondary levels to the university; more resources were provided for instructional materials at the secondary than at the primary level; community efforts were directed toward the expansion of secondary facilities; the bulk of foreign aid was used for secondary schools and the university; continuing and nonformal education were supported only erratically; and the proportion of female students declined at the university level and improved little at the secondary level, although it did increase at the primary level.

The education sector responded predictably. Despite the best efforts of teachers, supervisors, and administrators, the quality of the education provided declined. Teaching and learning materials and school furniture were in short supply and were distributed unevenly. In consequence, students' performance remained at a mediocre level; indeed, that it did not deteriorate even more is remarkable.

Nevertheless, public confidence in education as an instrument of development remained high. Even the most indigent people did not question the need to make substantial sacrifices so that their children could have a school education. They willingly paid for school supplies, additional school facilities, and heavy school-related expenses (such as uniforms). As the economic situation worsened, people's faith in the ability of education to deliver them and their children from the

oppression of poverty increased. As wage employment became scarcer, people attached greater store to educational credentials as the necessary, if not always sufficient, passport to such employment.

This public confidence in the power of education probably helped prevent the allocation of resources from slipping back too far. It may also have contributed to the renewal of education after the first few years of hardship. What emerges clearly from an examination of events since 1975 is the variety of ways in which after some years of faltering, the education system set itself once again on course. Although not every problem was solved, the years 1980 to 1985 showed more determination, confidence, and maturity than the previous five years on the part of teachers, administrators, and the general public, who cooperated in what was in effect a massive rescue operation to expand and improve the provision of education.

The economic decline created many difficulties for the education system and brought many material hardships to all engaged in the enterprise of educating young people. But it appears also to have brought the benefits of greater self-reliance, clearer self-definition, and improved self-confidence. These gains may well prove to be more enduring and more significant than the setbacks experienced during the years of difficulty.

Summary

In 1975 falling copper prices plunged Zambia into deep and serious economic difficulties. These difficulties continued during the ensuing years and quickly assumed crisis proportions. Notwithstanding the various measures taken during the past 12 years to arrest the deterioration, Zambia's economy has experienced a sustained, rapid, and substantial decline that has adversely affected all areas and sectors of life. This study examines the impact of this economic decline on the provision of formal education during the decade 1975 to 1985.

To set educational provision in its historical context, the study provides an overview of the development of education before 1975 and highlights the fact that, although the economic crisis may have imposed new constraints on providing adequate and relevant education, several of the problems currently being experienced have accompanied the development of the education system since its inception in the mid-1920s. Several issues that have a modern ring actually have a relatively long history, such as concern about the system's coverage, about the quality of the education being provided, and its suitability in preparing young people to face a world where the number of formal sector job opportunities is severely limited; about the ability to continue financing the system: and about generating the managerial capacity needed by a rapidly expanding educational network. Both the economic decline that gathered momentum after 1975 and the accelerating rate of population growth aggravated these and other problems. Drawing on the findings of the 1980 population census, the study brings together some findings on the interaction between level of education and such population variables as fertility, age at first marriage, and child mortality.

The general picture of resource allocation to education during the period 1975 to 1985 shows efforts to maintain and increase the level of educational spending. Relative to other sectors in the economy, the share allocated to education showed some tendency to increase, but the gain was slight, and its impact was nullified by the rapid population growth. Consequently, there was a substantial reduction in expenditure per student, resulting in steadily diminishing funds for educational materials and supplies; a depreciation of the real incomes of teachers to about 40 percent of their 1975 value; a greater reliance on the community for building and equipping schools; and increased calls on the private sector to participate in the provision of education. The decade also saw growing dependence on foreign aid for support to the education sector.

Within the education sector, resources tended to be diverted away from the primary, secondary, teacher training, and technical education levels and toward the university. Unit costs at the primary level fell by over 25 percent and by over 50 percent at the secondary level, but at the university they rose by more than 40 percent.

Such a large proportion of available resources was spent on teachers' salaries, especially at the primary level, that little remained to purchase essential educational materials. The study investigated the current supply situation in a sample of primary and secondary schools throughout the country and found a critical shortage of textbooks and teaching materials. At both the primary and secondary levels, a significant number of pupils appeared to lack essential writing materials. An examination of the actual production figures showed that the output always fell short of requirements. Technical production problems, marketing and distribution difficulties, and the chronic shortage of finance appeared to underlie these shortfalls. At the same time, however, large sums were being devoted each year to transfer payments, with the amount increasing at an average annual rate of more than 10 percent in real terms.

In general, therefore, the study found evidence of serious structural imbalances in the financing of education in Zambia that became more marked during the years of economic difficulty. These imbalances occur at two principal levels: in the allocation of resources between educational levels, and within each level, between functions: too much was devoted to the refined needs of too few at the higher level, and too little to the general needs of too many at the lower level. Moreover, too much was being devoted to personnel and to student subsidies and too little to more directly educational purposes. Policymakers' awareness of these problems appeared to be growing, hence the economic crisis is seen as having the positive outcome of promoting the establishment of a clear order of priorities and of fostering their translation into practice.

Notwithstanding the severe financial problems, the decade saw a sustained and rapid expansion of the school system at both the primary and secondary levels. During the first few years of economic difficulties there was some faltering, but since 1980 growth rates have picked up and have accelerated, in many instances to levels higher than the comparable rates for the population as a whole. Accompanying this increased numerical coverage by the system, the proportion of girls who completed the full primary cycle increased. Little improvement was observed, however, in the proportion of girls participating in secondary education, while at the university level the proportion actually declined.

The growth in numbers was not matched, however, by any corresponding improvement in the relevance or quality of the education provided. Although a decade of efforts was put into the process of educational reform, current educational provision is no more successful in responding to students' real needs than during colonial times. A mainly academic program, deriving almost exclusively from a knowledge-based curriculum, aims primarily at allowing students to progress further within the education system, and ultimately to gain wage employment. The system gives no consideration to the special learning needs of the large majority who must seek employment in the informal sector.

Although the evaluation of educational quality is problematic, Zambia's showing is negative on a number of indicators that are found to relate consistently to improved academic achievement. These indicators include per capita expenditures, the availability of instructional materials, the availability of library facilities, the number of hours actually spent in classroom teaching, the

availability of school furnishings, and the nutritional status of students. Concern has also been expressed about the quality of many university graduates and about their ability to respond competently and flexibly to the responsibilities that are placed on their shoulders. This latter problem may reflect the imbalance in the allocation of resources by the university toward administrative needs and away from those more directly concerned with teaching and research.

To the extent that performance in public examinations is indicative of educational achievement, the picture is mixed. That the examination system remained in place was perhaps a significant achievement in its own right. As to student performance, an analysis of raw scores suggests that performance deteriorated somewhat in the terminal primary school examination. Some deterioration was also apparent at higher levels, particularly in mathematics and science. A notable feature in all examinations was the consistency with which boys' performance surpassed that of girls.

Teachers were the most affected by the economic problems. To a large extent they were denied the resources needed for the professional discharge of their responsibilities. Moreover, although their educational background improved steadily, their salaries declined sharply in real terms. Yet despite dissatisfaction with their salaries, the numbers entering and remaining in teaching increased. This was almost certainly due to the absence of employment opportunities in other sectors of the faltering economy. But although there was a substantial improvement in the retention of graduate secondary teachers, teachers in key areas such as English, mathematics, and science were still in short supply.

The study attempted to assess whether teachers endeavored to supplement their incomes by undertaking commercial activities concurrently with their educational commitments. Although the evidence is not conclusive, many teachers do apparently undertake such activities, devoting some of their official school time to such undertakings. This practice is on the increase, and some teachers use the labors of school pupils for these activities during school hours. However, a number of indications showed that the teaching force, at both primary and secondary levels, was becoming more professional, more highly motivated, and more confident of its ability to master the adverse circumstances that beset it. In an almost perverse manner, the financial crisis appears to have boosted teachers' morale and provided a climate in which teachers as a group have advanced to a new stage of professional maturity.

The study also examined a number of other areas. These include the educational reform movement that occupied so central a place in educational thinking during the decade; continuing education, which was seen as the cinderella of education, with its programs being perceived principally as providing a parallel, second best route to educational qualifications; the University of Zambia, where it appeared that available resources could be used more effectively for the institution's teaching and research responsibilities and for the development of good quality postgraduate and research work; and the population's low general educational and literacy level.

In conclusion, the study reflected on how the more vulnerable areas—primary schools, teacher education, out-of-school youth, literacy—experienced the economic constraints more severely, whereas such improvements as occurred were enjoyed by the more prestigious and powerful areas: the university and some aspects of secondary provision. It also noted the tendency to show more concern with getting children into educational institutions than with providing the resources needed for them to make solid progress after their admission. Nevertheless, despite the

difficulties experienced the education system displayed considerable robustness. Not only did it continue to operate and even to expand, but it became more aware of the need to provide children with a better and more relevant form of education. In particular, the strength of the social demand for education was noted. The study suggests that to capitalize on these positive aspects

- there should be closer integration between the school and community, so that where financing is shared, responsibility could likewise be shared;
- the importance of every child receiving seven years of good quality primary education should be recognized and given top priority;
- the education system should generate more information about itself and process this information for the guidance of policymakers;
- education should be financed in ways not practiced to date and be offered in ways not hitherto conventional.

1

The Impact of Economic Decline on Education

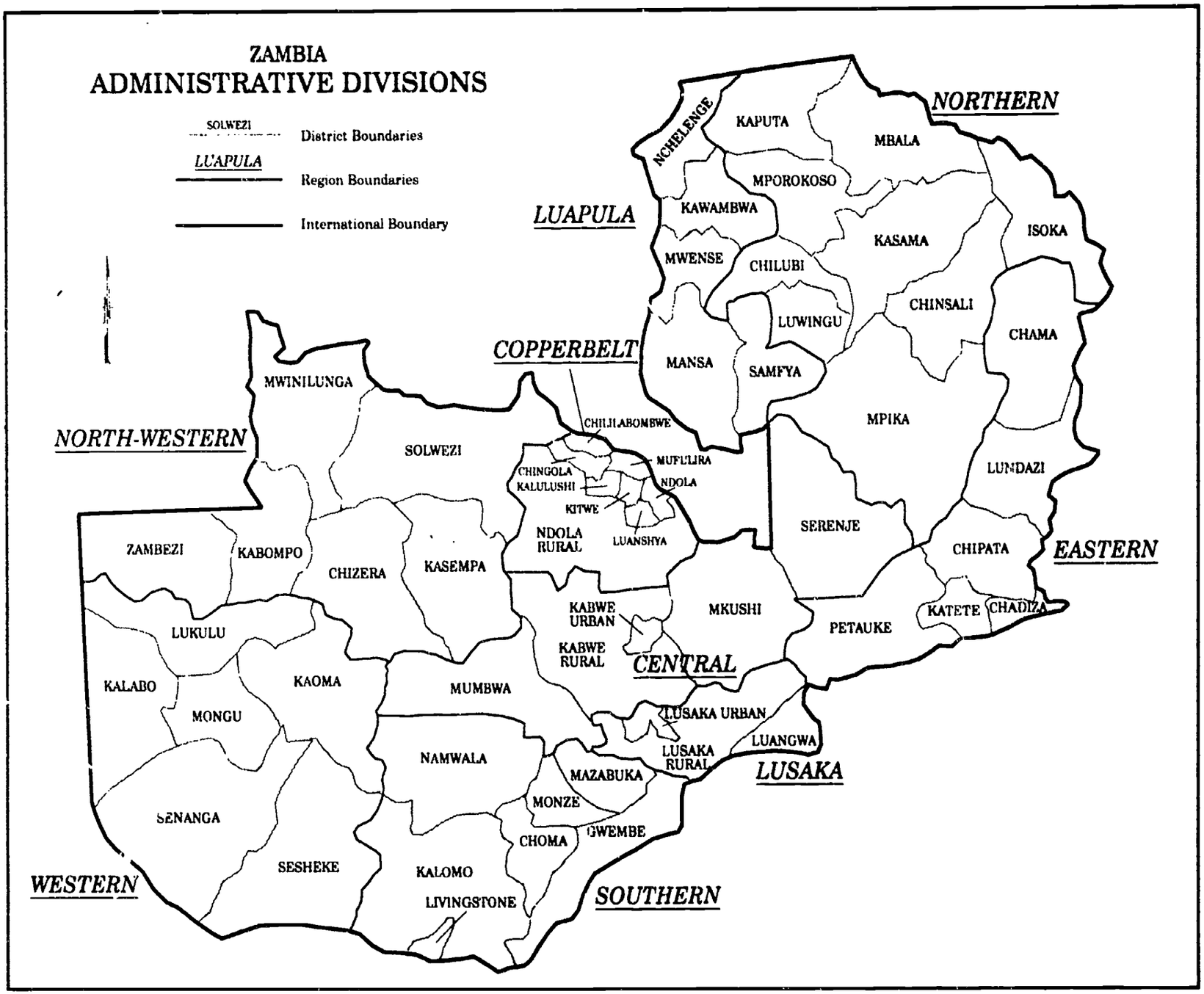
During the 1960s and the early 1970s, almost every country in the world devoted an everincreasing share of its resources and annual budgets to education. However, the recession triggered by the rise in oil prices in 1973 caused a leveling off and then a decline in the share of national resources going to education. Both developed and developing countries experienced this kind of downturn, but the latter were more severely affected. This reduction in overall resources came at a time in their educational history when they were not yet providing basic educational services for all their people, and when such services as they were providing were not of the quality that either suppliers or consumers wished them to be.

The problems were compounded by the rampant inflation that accompanied the recession, which manifested itself in the rising cost of educational provision per student. This cost is largely due to the nature of educational delivery, which depends heavily on a face-to-face encounter in which one individual teache . a restricted number of students. This labor-intensive feature of educational delivery means that a very large proportion of educational costs are attributable to teachers' salaries—more than 90 percent in some cases. The costs per student rose because teachers' salaries had to be raised in line with those in other sectors of the economy, and frequently at a rate that far outstripped inflationary growth.

Yet despite the tendency for resource levels to decline and for costs to rise, education systems were under pressure to maintain, expand, and improve upon the services they provided. This pressure was applied very strongly in countries that shared two educational/economic features: first, where a long history of educational neglect meant that a considerable proportion of the populace did not have access to even the most elementary form of education, while access to levels beyond the elementary was severely limited; and second, where the possession of some education beyond the most elementary was considered a passport out of poverty and the uncertainties of a traditional subsistence economy into relative affluence and modernity.

Zambia is one such country. This report focuses on Zambia to document the extent of the financial squeeze on the formal education system, and to track the adjustments made in response to it. The Zambian case is of particular interest because the recession threw the entire economy into a state of almost total disarray and collapse. (See figure 1.1 for a map of Zambia.) Before considering Zambia's

Figure 1.1


ZAMBIA
ADMINISTRATIVE DIVISIONS
SOLWEZI
District Boundaries
LUAPULA
Region Boundaries
International Boundary
NORTHERN
NCHELENGE
KAPUTA
MBALA
MPOROKOSO
KAWAMBWA
LUAPULA
KASAMA
ISOKA
MWENSE
CHILUBI
CHINSALI
LUWINGU
CHAMA
COPPERBELT
MANSA
SAMFYA
MWINILUNGA
MPIKA
CHILILABOMBWE
NORTH-WESTERN
SOLWEZI
MUFULIRA
CHINGOLA
KALULUSHI
NDOLA
LUNDAZI
KITWE
SERENJE
NDOLA RURAL
LUANSHYA
ZAMBEZI
KABOMPO
CHIZERA
KASEMPA
CHIPATA
EASTERN
KABWE URBAN
MKUSHI
KATETE
CHADIZA
LUKULU
PETAUKE
KABWE RURAL
CENTRAL
KALABO
KAOMA
MUMBWA
MONGU
LUSAKA URBAN
LUANGWA
NAMWALA
LUSAKA RURAL
LUSAKA
MAZABUKA
MONZE
SENANGA
CHOMA
GWEMBE
SESHEKE
KALOMO
WESTERN
LIVINGSTONE
SOUTHERN

situation in detail, however, a discussion, in general terms, of the adjustments likely to characterize education's response to the economic recession in countries similarly affected is helpful.

During a period of economic hardship, an education system may be exposed to two opposing pressures: fiscal and popular. The fiscal pressure is constrictive, seeking to constrain and sometimes to reduce the system so that its needs can be met by a smaller proportion of national resources. The popular pressure is expansionist, seeking at the very least to maintain the system, but almost always striving to expand the number of students in the system or to improve the quality of services provided. This expansionist pressure is greatly intensified when the population is increasing rapidly. Popular pressure is always present, but during times of hardship, it exacerbates fiscal pressure. The interaction of these pressures results in a compromise: fiscal provision from public resources responds to the dominant elements of popular demand, but is less responsive to weaker components. The price of this response is an increasing reliance on private and other nongovernmental resources—aid from abroad, for example—to finance and provide education.

In most countries, education and health are the largest spenders of public funds, with education usually being the bigger of the two, as is the case in Zambia. When resources become tight, governments tend to look to these two areas for savings. One reason is that they are so large that the savings they can generate can be sizeable, whereas corresponding savings in other areas might cripple activities entirely. A second reason is that governments see these areas as consuming resources that they might otherwise use to revitalize a sagging economy. At the same time, however, these two sectors touch the public so intimately that interference with them is fraught with danger. In virtually every country, the "ability to satisfy popular demand for education (is) a necessary (though not always sufficient) condition for political survival" (Weiler 1983, p. 40). Thus political prudence requires that education and health budgets should be allowed to maintain at least the principal services and those that the more articulate section of the public regards most highly.

The obvious requirements for education are to have in classrooms as large a proportion as possible of children of the relevant school-going age; to enable as many as possible to move to higher levels of education; and to give special consideration to these higher levels since they are the ones that lead to the best employment opportunities. Hence governments will use their limited resources to keep classrooms full at the lowest levels, to get maximum returns from teachers and classrooms by allowing class sizes to grow almost unchecked, and when possible to provide more classrooms and extra teachers to cater to those as yet unable to gain admission; to increase opportunities for secondary education because of the high social value placed on it; and to provide unquestioning support to the university, partly because they believe it has a critical role to play in economic development, and partly because its considerable prestige, powerful lobby, and virtual autonomy in managing its own affairs make it something of a sacred cow. These are the dominant components of the education system that the government will maintain and expand.

The government will provide proportionately fewer resources for components that are less visible. These include the actual content of courses taught and their relevance or usefulness to life outside; the organization of the entire school system with its heavy emphasis on examinations and selection; the nature of the curriculum and the teaching methods used; and the effectiveness with which

schools can conduct their business. In other words, fewer resources will be available for the qualitative needs of the education system. The public would like to see improvements here, of course, but is more concerned with receiving more education rather than better education.

Other aspects of educational provision also suffer from a weak lobby and may therefore prove vulnerable in a time of economic difficulty. These encompass any group that is less-advantaged with respect to another. Thus, within education as a whole, formal provision is likely to be less vulnerable than nonformal (Lewin 1986; Lourie 1986); provision at the primary level is likely to suffer relative to the secondary level, which in turn will suffer in relation to tertiary provision; provision for girls may suffer more than that for boys; provision for those requiring special education because of mental or physical handicaps will not be as readily forthcoming as for those who are not disabled; and urban areas will have more facilities and better quality provision than rural areas.

Reorientations of this nature in the use of educational resources are unlikely to take place because of calculated decisions and explicitly formulated policy choices. Instead they will occur by way of *ad hoc* reaction to circumstances where the daily pressures will be such that the government's principal concern will be with survival and not with dynamic developments. Neither will the government make such adjustments in a radical fashion. Instead, a slow process of transformation will arise from two complementary developments. Inescapable commitments, above all for salaries and wages, will absorb most of the available resources, leaving very little for other equally important operating expenses. The commitment to wages and salaries will also leave little room for maneuverability in the disposition of resources, thus reducing the possibility of introducing meaningful reforms. Simultaneously, resources will be shifted away from the lower levels and toward the higher. This will be partly due to the greater impact on resources of high salaries and salary increases at the tertiary level, and partly to the determination to maintain university level provision.

Accompanying these adjustments in the distribution of resources will be an increased tendency to fall back on sources outside the government for the inputs needed to maintain and develop the education system. Domestically, there will be greater reliance on the private sector. At the institutional level, this will manifest itself in the growth of private schools and in greater involvement of nongovernmental bodies in the provision and management of education. At the level of the individual, it will manifest itself in various moves toward cost sharing. The responsibility for costs not directly related to professional educational purposes are likely to be transferred to the parents or the communities.

Development assistance for education will tend to become more important. The government will seek aid for education from more diverse sources than in the past and will use it for a wider variety of purposes. No longer will it be confined to strictly capital developments, or to the dominant technical assistance components of personnel and training, but will encompass virtually every form of operating cost (with the possible exception of salaries for local personnel). Although the total volume of foreign aid may not be large in relation to the entire education budget, it will have a disproportionately large effect. This is because in practice (though not in principle), it will be a form of general budgetary support. Hence, it will provide the flexibility for innovation and for addressing critical points that the education budget lost through its commitment to inescapable expenditures.

As aid is becoming available from a wide variety of donors, is being directed to a multiplicity of projects and activities, and is virtually the only source of funds for

meeting the less tangible needs of quality improvement, dealing with aid matters will consume much time in the education ministries. Moreover, the ministries will take care to make educational plans as all-embracing as possible, without too sharp a delineation of priorities, so as not to jeopardize potential aid. The difficulty the recipient country experiences in meeting all its educational needs, and often even in formulating its wants, may lead to the donor having a powerful voice in the formulation of educational priorities; an influence that may find expression in conditionalities attached to the aid. The donor may wish to confine the resources provided to consolidating, maintaining, or rehabilitating the existing system and its infrastructure rather than to developing new capacity. Developments may also occur in response to the external stimuli of donors rather than as locally conceived initiatives.

Finally, a word on possible attitudinal adjustments to the problems that have beset education in many developing countries since the mid-1970s. At first, the crisis might be expected to engender considerable demoralization. Attention would be riveted on the negative aspects: the shortages, the problems, the failures. At the same time, government would retain a shred of hope that the general economic situation might improve, both internationally and nationally, and that education might again experience more plentiful days. When governments recognized that no such improvements would come quickly or effortlessly, they would see that if there were to be changes for the better, they would have to be self-initiated and on the basis of a low level of material inputs. Experience and confidence gained from coping with problems in the almost total absence of the necessary resources, together with the self-assured recognition of what an achievement it was not to have succumbed entirely to economic hardships, would combine to make them more resolute and purposeful in pursuing objectives. They would have a more realistic appreciation of the resources needed to achieve these objectives and of the problems in generating or improvising such resources. But they would also be more committed to do what they could to maintain and support the system, and to translate that commitment into practice.

The pages that follow will examine the working out of these predictions in the case of Zambia, and will note in several different spheres the phenomenon of the fall and rise of education in an economy under decline.

2

The Development of Education in Zambia before 1975

"An education system is a result of decisions made and designs laid down by past and present Governments" (UNESCO 1964, p. 1). This statement remains as true today as when Radford and his colleagues first wrote it in their report on the future development of the education system of what was then known as Northern Rhodesia. Several of the concerns that beset the educational planner today have their origin in events that occurred years and even decades before; thus, an overview of the education sector prior to 1975 follows as a backdrop to the developments during the subsequent years of financial crisis. As this section will show, several of the problems that are central to the education system today have accompanied its growth and development. Indeed, a sense of *deja vu* accompanies a study of the problems that beset educational provision in the 1930s:

- the economic constraints that limited the extension of education to every child;
- the inability to formulate clear policies because of the government's crippling "sense of poverty" (Coombe 1968, p. 372);
- the developments that occurred more in response to external stimuli than to local initiatives;
- the pervasive concern about the production of an educated cadre that could not be absorbed into productive employment;
- the relevance of the education provided to the lives of most recipients;
- the danger of relapse into illiteracy by the large numbers of students obliged to leave school after too short a period of participation;
- the difficulty of ensuring that girls would be educated in the same numbers and to the same standards as boys;
- the apparent conflict between the provision of primary and secondary education;
- the unsatisfactory quality of educational provision in the primary schools.

The Precolonial Era

The precolonial era in Zambia lasted until 1890 when the Lozi in the west of the country and the British South Africa Company (BSAC) signed a treaty of protection

and subsidy that gave the company administrative control and mineral rights over a large area. During this era, education in the sense of "the transmission of wisdom, knowledge, experience and skills" (Lane 1976, p. 1) flourished, since it was a prerequisite for survival. This traditional education had five main components:

- instruction in the history and traditions of the people;
- training in practical skills through a loose form of apprenticeship;
- teaching about social obligations and the inculcation of good manners;
- development of awareness of and respect for the religious dimension of daily life;
- concentrated preparation for the transition from childhood to adulthood in secluded initiations schools (Snelson 1974).

The initiation schools' activities tended to be systematic and rather formalized, but the other components of traditional education fell under what today would be termed "nonformal" education. Two essential and related features of traditional education deserve mention in the context of concerns about the education provided today and the resources required: first, traditional education was the responsibility of the community, drawing on its own resources, and second, it was ideally suited to the society in which it was given. Whatever other limitations traditional education may have suffered from, it did not "alienate" the recipients from life in the local community. Indeed, "its most obvious characteristic was its capacity to prepare children for living in the community" (Castle 1966, p. 44). The success that traditional education so effortlessly achieved in this respect has eluded modern educational endeavors, notwithstanding the investment of much thought and many resources.

Toward the end of the precolonial era, Zambia was penetrated first by missionary explorers, of whom David Livingstone was the most notable, subsequently by missionary evangelists (Arnot, Coillard, and Depelchin, for example), and later by prospectors and treaty seekers, all of the latter in some way representatives of Cecil Rhodes' British South Africa Company. The establishment of primary schools quickly followed the setting up of mission stations. The first school opened in 1883 at Limulunga, in Zambia's Western Province, with an enrollment of three boys (Snelson 1974). Today's formal school system developed from this simple beginning.

The Period of British South Africa Company Administration

Following its agreement with the paramount chief of the Lozi in 1890, the BSAC gradually extended its sphere of influence to other parts of the country. At first the region was administered as North-Western and North-Eastern Rhodesia, but following the amalgamation of the two sections in 1911, the BSAC administered the whole territory as the Protectorate of Northern Rhodesia. Company rule continued until 1924, when the Colonial Office in London assumed responsibility for the territory.

During the BSAC's administration, with but one exception the provision of education remained the responsibility of the missionary agencies. The exception was the Barotse National School, established in March 1907 following an agreement between the BSAC and the paramount chief of the Lozi that a proportion of

the tax collected in Barotseland (now the Western Province) would be used to provide education for the Lozi people. All other educational developments up to April 1924 depended almost entirely on the "initiative, energy, perseverance, and financial resources of the missionary societies" (Snelson 1974, p. 269). By the time BSAC rule ended, about 1,500 schools were scattered throughout the territory, all poorly equipped. The enrollment was approximately 50,000. The schools were financed by whatever the impoverished missionary societies could afford. The failure of the BSAC to invest in education during the 34 "somnolent years" (Snelson 1974 , p. 121) of its rule meant that a generation and more of Northern Rhodesians lost their chance of receiving an education. This loss had its repercussions 40 years later when Zambia entered independence with a largely illiterate adult population and a pitifully small supply of educated manpower.

The Colonial Era, 1924 to 1952

The Phelps-Stokes Commission was visiting countries in eastern Africa at the time that responsibility for the administration of Northern Rhodesia was transferred from the BSAC to the Colonial Office. The commission visited Northern Rhodesia in June 1924, and held extensive meetings with the missionary bodies and with government officials.

The commission's tasks were to investigate the people's educational needs, to ascertain the extent to which these were being met, and to assist in the formulation of plans to meet these needs. The commission urged that the education to be provided should meet the people's real needs and should prepare students for life in the village community. This point is reflected in the Colonial Office's Advisory Committee report, *Education Policy in British Tropical Africa,* which states that "education should be adapted to the mentality, aptitudes, occupations and traditions of the various peoples, conserving as far as possible all sound and healthy elements in the fabric of their social life" (quoted in Snelson 1974, p. 142). Thus, education should aim at advancing agriculture, developing industries, improving health, training people in the management of their own affairs, and inculcating ideals of citizenship and service. Specifically, the Phelps-Stokes Commission advocated appointing a "director of native education," establishing an education advisory board that would represent all interested parties, subsidizing the educational work of the missions, and giving immediate priority to teacher training. The commission also advised that thought be given to setting up an institution that would provide some form of higher education.

The outcome was the replacement of what had been little more than a haphazard collection of schools by a more formal education system administered in an increasingly professional manner. This administration rested almost entirely in the hands of the government through its Department of Native Education, although the actual provision and management of schools and institutes remained largely with the missionary societies. The administration's task was to foster a sound and efficient system of education in keeping with the policy described above.

In time, the stated educational policy came to favor spreading the available resources over as many children as possible. The advance of a great multitude rather than the higher education of a select minority became almost a catch-call in educational policy circles in Northern Rhodesia. This policy was partly responsible for the hesitancy with which the colonial government in Lusaka addressed the provision of secondary and higher education. In contrast to views emanating from the Colonial Office, the local administration sensed a conflict

between the provision of mass elementary education and some form of secondary or higher education. They could not see that these forms might be "complementary but not antagonistic" (Coombe 1967a, p. 192).

Several other considerations also delayed the commencement of secondary education. Dominant among these were considerations of finance, of the economy's absorptive capacity, and of the hostility of a large section of the settler and miner population to the advancement of the local people. First, Northern Rhodesia, as was the case with other colonial territories, was expected to be financially self-supporting, hence it had to finance educational development from its own resources. These resources vanished in 1931 when the worldwide economic depression caused the country's young mining industry to collapse. Even at this early date, a strong link had been forged between the country's progress and the market for copper:

> The development of major new mining properties and a rapid rise in the copper price had brought sudden wealth to the territory, but from then onwards the country's fortunes were tied irrevocably to the fluctuating conditions of the world copper market: the volume of government expenditure was accordingly determined as much by the results of negotiations among the world's major mining houses in New York, Ottawa, and London, as by discussion in the secretariat in Livingstone or Lusaka (Coombe 1967a, pp. 182-3).

The slump of the early 1930s and the tight control on government expenditure to which it led appear to have imbued the Northern Rhodesian government with an almost paranoiac fear that something similar might happen again. Even when government revenues and reserves increased enormously in the early 1940s because of the high, war-time demand for copper, the government was reluctant to invest in development projects.

Second, the government feared it might produce an unemployed educated class. This fear even dictated some misgivings about the provision of higher levels of primary education:

> With a regular supply of Standard IV candidates available for vocational training the problem will be to make sure, as far as is possible, that no more pupils are trained in each line than can be readily absorbed in the country (NRG 1930, p. 17).

A later report spoke about the danger of the emergence of a "discontented unemployed class" (NRG 1937, p. 11), and even as late as 1946, the Education Department responded defensively to a mission request to open a new secondary school by speaking of the danger of creating "an intellectual unemployed proletariat." As Mwanakatwe shrewdly observes: "Educational planners apparently gave no thought to the possibility of creating a discontented uneducated class of Africans' (Mwanakatwe 1968, p. 26).

A third factor was the settlers' antipathy toward providing the local population with secondary education, their bitter opposition to any provisions for the African population that might reduce employment prospects for white settlers and immigrants, and their increasing success in having disproportionately large amounts of public funds devoted to developing a parallel, but independent and racially exclusive, system of European education. Recurrent expenditure on providing education for about 1,000 European children in 1937 considerably exceeded expenditures on over 30,000 African children the same year (without counting a further 74,000 African children in "unaided" schools). Imbalances in

the structure of educational financing, reflected today in the enormous difference between unit costs at the primary level and at the university, have clearly had a long history in Zambia.

The expansion of primary education, however, required the development of teacher training, which in turn made identification of some trainers with postprimary education imperative. Persons trained beyond the primary level were also needed as clerical officers and technicians in government service and in some positions of trust in the native authorities and chiefs' courts through which the policy of indirect rule found expression. Some of the missionary bodies also wished to see some form of secondary education provided for Africans. Hence, in the absence of government action, one of these bodies established a secondary class at Kafue in 1935. However, the scheme did not last long. The first secondary class established with government support was opened at Lubwa Mission in Chinsali (Eastern Province) in 1938 with an enrollment of nine pupils. The following year, Munali Training Centre, which had opened in 1938 as a center for primary education, teacher training, and clerical courses, also began secondary provision, with an enrollment of 11 pupils. The Lubwa course ended in 1940, and a further attempt to begin a secondary program at Kafue ended with the four pupils concerned being transferred to Munali. The school expanded slowly at first and until 1946 was the only secondary school for Africans in the territory. Until Chipembi Girls' School started that year in the Central Province, no provision was made for the secondary education of girls.

The slow and uneasy introduction of secondary education was followed by an equally slow and short-sighted approach to its expansion. By 1952, the country had only four junior secondary schools (offering the first two secondary classes) and one full senior school, with an entire enrollment of 384 boys and 21 girls. Zambia's critical manpower problems at the time of independence and many of its current difficulties in obtaining good quality, experienced, mid-level management may be laid at the door of this tardy development.

In 1949, the Central African Council—a body set up to advise the governments of Northern and Southern Rhodesia and of Nyasaland on matters of common concern—appointed the Cartmel-Robinson Committee to report on the need for higher education for Africans. Upon the committee's advice, the Carr-Saunders Commission was established in 1952 to look into the question more thoroughly. Aware that moves were afoot in Salisbury (now Harare) to establish a university with separate facilities for blacks and whites, thereby perpetuating the separation of races that prevailed at lower levels of the system, the commission unanimously urged that a university college catering equally for all races be started without delay. It further recommended that if the proposals under discussion in Salisbury could not be modified along strictly nonracial lines, then such a university should not be established in Salisbury: "Our choice falls on Lusaka, whose importance is increasing and whose future is assured.... There, we believe, could arise a university worthy of central Africa" (Central African Council 1953, p. 46).

This was not to be, however. The establishment a few years later of the University College of Rhodesia and Nyasaland ended any consideration of the establishment of a university institution in Northern Rhodesia. The dislike that Africans in Northern Rhodesia and Nyasaland had for all federal establishments made the Salisbury college unpopular from the outset. It was not extensively patronized by students from either territory, and by the end of 1962 the Nyasaland government had withdrawn all its students. Eligible students from Northern Rhodesia continued to be sent to Salisbury for studies, but preferences were for

programs elsewhere, while students already enrolled in Salisbury tended to seek awards that would take them to other universities.

Two features of the education system during the colonial era continue to have pernicious effects today. One is the way it developed as a highly centralized and highly selective system. The curriculum was the same for all schools and was centrally designed and imposed. Clearly this left schools with few opportunities to provide an education that was adapted to their pupils' specific needs. The system's selective nature was such that progression from each grade to the next was by competitive examination. This also restricted schools' opportunities and willingness to be innovative and imaginative in responding to their pupils' particular needs. The requirements of the examinations dominated all the teaching and learning:

> More emphasis was given to a child's acquisition of a limited store of ill-assorted and often irrelevant facts than to his ability to think logically or to the development of his natural curiosity. For the ambitious child, education was a rat race. For the rest it was often a drudgery (Snelson 1974, p. 275).

As will be seen later, these words still apply to much that goes on in classrooms today.

The second feature was the failure to make adequate provision for the education of urban children. Most missionary societies had established themselves in the rural areas and set up their schools there. The colonial authorities, meanwhile, concerned themselves with the issue of whether schools should be set up in the mining centers. They stressed the dangers of attracting children to live in urban areas if schools were established for them, and for a time, they even considered that all children over the age of ten should be required to leave the industrial areas. Although the mining companies made some provision for the education of their employees' children, an organized primary school education program was started on the Copperbelt only in 1937, and even this could be operated only by the extensive use of double session teaching. Nevertheless, by 1943 the authorities thought that they had made such progress that they could introduce compulsory education in some of the towns. But they had seriously underestimated two things: the size of the potential school-age population, and the way in which the prospect of six full years of education would attract children from the rural areas to the towns. Subsequent educational development on the Copperbelt rested largely with a missionary society (the United Missions on the Copperbelt) and the mining companies, but the inability of these two agencies to meet the needs of the rapidly growing population, contributed to the current situation where the Copperbelt primary schools have room for fewer than 80 percent of the population.

The Federal Era, 1953 to 1963

In 1953, against the wishes of the majority of the African people in Northern Rhodesia and Nyasaland, the British government brought the Federation of Rhodesia and Nyasaland into being. During the decade of the federation, the responsibility for education in Northern Rhodesia was divided. The territorial government retained responsibility for African education, while the federal government assumed responsibility for the education of other races. The government established high quality educational facilities in the major towns, but access was restricted to European children. The grim picture of the federation painted by most people was that it was an odious imposition designed to bolster

Southern Rhodesia's economic development using the wealth from the Northern Rhodesian mines and cheap labor from Nyasaland in preparation for the day when Southern Rhodesia would go it alone or would seek some form of integration with South Africa. Subsequent events confirmed the accuracy of this assessment

The aim for African education during the first years of the federation was to consolidate and improve the primary school system, to develop secondary education and trade training schemes, and to increase the supply of trained teachers. By 1955, almost 200,000 children were in primary schools (35 percent of them girls), and just over 900 in secondary schools (but only 8 percent of these were girls).

In 1957, the government shifted the direction of educational expansion to concentrate on two target areas: the development of secondary education and the provision of more primary school education in the main urban areas. By this time over half the children in urban areas could not find places in schools. Although administrative and organizational measures, such as double session teaching and a year round calendar, helped improve enrollment ratios, facilities in urban schools remained inadequate.

The emphasis on the rapid expansion of secondary school facilities was stimulated by political events, since the federation was obviously not going to last, and its place would soon be taken by an independent territory. However, the priority given to secondary education and to increasing the provision of primary school facilities in urban areas involved curtailing the development of primary education in rural areas. This in turn led to an increase in the migration of rural children to the towns in search of education. The underdevelopment of their schools and the loss of many of their children have contributed to the underdeveloped state of the rural areas, both prior to independence and since.

When the federation ended in December 1963, about 342,000 children were enrolled in primary school and 7,050 in secondary. Almost four-fifths of the primary school children were in the lower four classes, with boys making up 58 percent of the total enrollment. At the secondary level, 80 percent of the total enrollment were boys. The 1963 census, which was the first of its kind in the country, enabled the enrollment ratios for primary schools to be estimated as 62 percent for boys and 45 percent for girls, with places available in the first primary grade for 77 percent of the eligible population (eight-year-old boys and seven-year-old girls) (UNESCO 1964).

A significant development toward the end of the federal era was the request by the Northern Rhodesia (territorial) government to the United Nations and to the British government to help it plan the future development of its education system, to advise on the establishment of a university, and to develop a framework for an integrated economic and social development plan. The report of the education mission, which was undertaken by UNESCO, provided a blueprint for future educational development, and showed in detail how the country could meet the target of universal primary education by 1980. It gave the highest priority to the development of a university, but left the details to another mission headed by Sir John Lockwood. It gave second priority to two objectives of equal importance: the expansion of secondary schooling and the rapid improvement of the quality of primary education.

Three of the mission's recommendations are especially important because of their influence on educational provision today.

- Despite the obvious difficulties, both administrative and pedagogic, English should be adopted as the sole medium of instruction from the commencement

of primary school (UNESCO 1964, p. 25).

- The number of well-qualified and well-trained teachers should be increased so that double session teaching would be eliminated at all primary school levels (UNESCO 1964, p. 19).
- Education for farming was discussed at length. The report recognized that schools should play some part in helping to raise the subsistence level, but thought it foolish to expect the schools to do too much. Caustically, it observed that the agricultural work being done in primary schools appeared to do no harm, but "we are not sure that, as we saw it being done, it has any educational or social value or would lead to any better farming at home" (UNESCO 1964, p. 91). It stated that any worthwhile attempt to improve agricultural practice would depend on the quality of farming done by parents in their own community. Improvement would be reflected in increased income, and children would see that an agricultural way of life was a viable option.

A few weeks before the UNESCO mission submitted its report, Lockwood and his colleagues submitted their recommendations on the establishment of a university (NRG 1964). Against the background of the Tannanarive Conference on the Development of Higher Education in Africa (UNESCO 1962) and of a growing influence of American ideas on higher educational provision, the guiding principle of the Lockwood Report was that Northern Rhodesia should establish a university without delay. The university should be responsive to the country's real needs, be autonomous from the outset, and be an institution that would win the recognition and respect of the academic world on merit. One of the Lockwood Report's most novel recommendations was that admission to the university should depend on satisfactory performance in the O-level examinations (or equivalent), after 12 years of schooling, and not on A-level performance as was customary in all other university institutions in the former British world. The nationalist government that was established in January 1964 quickly accepted the recommendations and took steps to implement them.

Education at Independence

Zambia became an independent nation on October 24, 1964, rich in material and financial resources, but almost destitute in developed human resources. In the laconic words of a subsequent government report: "The educational system which Zambia inherited at Independence was by no means adequate to serve her manpower interests" (GRZ 1969, p. 30).

The education statistics are stark. Estimates reveal that at independence, only 110,200 Africans had completed six years in primary schools, and only 32,000 had completed the full primary course of eight years. At the secondary level, although over 8,000 Africans were enrolled in schools, only 4,420 had passed the Junior Secondary (Form II) Examination, and a mere 961 had passed the School Certificate Examination (UN/ECA/FAO 1964). Only 107 had graduated from university, of whom only 4 were female (GRZ 1966a). These figures underscored the urgent need to expand education at all levels. They also serve to explain why "the basic objective of all educational programmes after Independence was to lay the foundation for the provision after 1970 of some of the much needed trained manpower in all fields of technical and economic activity" (Mwanakatwe 1968, p. 59).

The Decade of Comparative Prosperity, 1964 to 1974

During the first half of this decade, the government focused on the development of secondary schools and the university. During the second half, it turned its attention to technical education. Two considerations dictated the expansion of the secondary schools: popular demand for secondary education, and the need for educated manpower. Under the pressure of these two forces and with the support of a booming economy—the real GDP increased by 11 percent in 1964 and by a further 15 percent in 1965—the government began to expand the secondary school system at a rate higher than ever before attempted in a developing country(GRZ 1966a).

The intake to secondary schools jumped from 4,700 in 1964 to 15,700 in 1969, an annual average growth rate of over 27 percent. Several problems plagued this rapid expansion:

- the increasing capital and recurrent costs;
- the construction industry's inability to build on the scale required, especially in remote areas;
- the difficulty of maintaining a supply of well-qualified teachers;
- the problems in providing the administrative and supervisory support that the greatly expanded system required.

At the demand level, when expansion slowed down to some 6.4 percent per year between 1969 and 1974, pressure from the public for the provision of more secondary education remained as strong as ever.

Although the expansion of primary schooling was not one of the government's top priorities immediately after independence, it did not overlook the needs at this level. The ambitious target set by the First National Development Plan (1966-70) was to provide sufficient places at the primary level so that by 1970 every child would be able to have at least four years of primary education; to expand the system so that all urban and 75 percent of the rural children could complete the full seven-year primary program from 1970 onward; and to improve quality by expanding teacher training and upgrading the standards of teachers (GRZ 1966b).

The government did not meet these targets, largely because it underestimated the population of school-age children. Moreover, its accomplishments were not without problems:

- almost all the schools developed during this period were provided on a self-help basis, but many of them were no more than temporary shelters that soon had to be replaced;
- teachers were allocated the most unsuitable living accommodation, if any;
- all surplus capacity was used up in urban areas by an extension of double session teaching to upper primary classes and the selective introduction of triple sessions at the lower primary level;
- the teacher training program was reduced to one residential year so as to accelerate output (but was reextended to two years in phased stages in 1968 and 1969).

The objective of the Second National Development Plan (1972-76) was to provide sufficient new places at the lower primary level to keep pace with population growth, and at the upper primary so as to achieve an 80 percent transition rate from grade 4 to grade 5 by 1976. Reflecting the need for secondary school expansion to relate clearly to manpower needs, the Second Plan faced up to the fact that: "For many years to come most children will receive no more than seven years of full-time

schooling" (GRZ 1971, p. 128). Hence, it stressed the need for primary education to be truly terminal and for the community itself to become a major instrument of education.

A number of problems that beset education today manifested themselves during the first decade of independence, 1964 to 1974. While some were merely a continuation of problems already experienced during the preindependence era, others added a new dimension. First, the recognition that for many years to come primary education would be terminal for most children brought into focus the issues of the relevance of the education received, and the allegations that it tended to alienate primary school-leavers from their communities and from rural life. Second, the rapid expansion of provision at all levels, but especially at the secondary, led to concern that the government was neglecting quality. Third, concern was also expressed about the whole nature of the education system. Awareness was growing about the disparities within the education system: between geographical areas, between sexes, and at an emergent level, between social classes. Fourth, the government had assumed almost the entire responsibility for the financing of education, without any contribution from the recipients. As a result, people expected the government to provide all the other inputs, namely, personnel, curricula, materials, maintenance, and even boarding provisions. By giving the widest possible meaning to the concept of free education, the government assumed an increasing burden in meeting many of the students' personal costs at all levels of education. These "transfer payments" were a new factor within the government budget for education from 1966 onward; one that proved increasingly burdensome and that limited the funds that might have been available for other more directly educational purposes. Fifth, with the stress on the development of the university and of technical education to provide the skilled manpower needed for Zambia's highly industrialized economy, the government realized in the late 1960s that science and mathematics were posing special problems: "The inadequacy of students' preparation in science and mathematics will handicap Zambia's manpower programme for many years" (GRZ 1969, p. 34).

Intermingled with these various difficulties were the problems of administration: the managerial capacity required by a greatly expanded system; the ability to sustain developments; the capacity to formulate and execute policy; the ability to generate, collect, analyze, and use information; the system's overcentralization; the protracted bureaucracy that was emerging; and the lengthy and involved channels of communication. The administrative and managerial difficulties were exacerbated by the fairly rapid turnover of staff. This turnover was due in part to the desire of education managers to move to other fields, and in part to political decisions to move people around to expose them to administrative responsibilities in a number of ministries.

Accompanying all these problems of a practical nature was the fact that education had not yet been brought to every eligible child, together with a growing uneasiness that, instead of promoting development education might be playing some role in obstructing it, or at best in slowing it down. People were increasingly aware of the imbalances developing in society and concerned lest education might be playing some role in giving rise to or perpetuating these imbalances.

The education ministry was grappling with these problems when the economic crisis began to loom in 1975.

3

The Decline of Zambia's Economy

> Although a net deficit of K94.4 million was estimated for, an overall surplus of K165 million was realised which was mainly due to peak copper prices (GRZ *Financial Report* 1974, p. 1).
>
> The dramatic fall in copper prices due to the world economic recession, together with the closure of our traditional export and import routes and the rampant world inflation, largely contributed to the gross deficit of K379.1 million in 1975 (GRZ *Financial Report* 1975, p. i).

These two statements from successive government financial reports underscore the abrupt change that occurred in Zambia's economic situation in 1975. The deterioration has continued since, with the economy showing a steady decline from one year to the next. Recently, in announcing a new economic recovery program, President Kaunda spoke of the "deep and prolonged crisis in our economy characterised by serious dislocations in both our internal and external sectors" (Kaunda 1987, p. 1). Zambia has felt the effects of the decline all the more sharply because of the contrast to the buoyant economy it enjoyed in the decade after independence, from 1964 to 1974, when the GDP maintained rapid growth, real output expanded, and the terms of trade improved. By contrast, since 1975 the growth of the GDP has been uncertain, sluggish, and at times stagnant or even negative in real terms; output has decreased; and the terms of trade have deteriorated seriously. The decline was rapid, sustained, and devastating and was of a magnitude described as "unparalleled by the experience of any other country in peacetime" (Simson 1985, p. 31).

The Dependence on Minerals

While a combination of several factors caused the massive economic decline, Zambia's major problem is that as a producer and exporter of primary commodities it has, over the years, developed production structures heavily dependent on imports. The primary commodities are minerals: lead, zinc, cobalt, but above all copper. Today, as in the past, the whole economy hinges on the mining industry and its ability to produce minerals that the industrialized countries will purchase. The quantity of minerals sold and the price obtained determine the volume of goods that

Zambia can import. Zambia's manufacturing and industrial sectors, including the mining industry itself and to some extent the agricultural sector, are heavily dependent on the importation of capital goods and raw materials. In the absence of the necessary imports, their operations run down and their productivity declines. The ability to purchase imports depends on receipts from mineral sales, which in turn depend on the level of demand in the industrialized countries. For its part, this depends on two factors, technological advances and the economies of the industrialized countries. Technological developments may reduce the need for copper and other metals, while the economic vigor of the industrialized countries greatly affects the demand for minerals. Zambia does not determine either of these factors. Hence, Zambia's dependence on the copper industry has resulted in its potential for self-development being determined largely by external forces over which it has no control.

The following figures demonstrate the extent of Zambia's dependence on mineral production: from 1966 to 1970, receipts from taxation on mineral production and sales constituted more than 55 percent of annual government revenues, 60 percent of annual government expenditure, 44 percent of the GDP, and 95 percent of export earnings (table 3.1). In 1975, however, the contribution of mineral receipts to the economy fell rapidly, dwindling from some 7 percent in 1975 to virtually zero in 1977 and 1978. By 1979 the situation had deteriorated so badly that funds began flowing in the opposite direction, with more than 1 percent of the government annual expenditure being used to support the mining industry.

Table 3.1 The Mining Industry's Contribution to Zambia's Economy, 1968-85

Year	*(a) Mineral revenues (K millions)*	*(b) Total government revenues (K millions)*	*(c) Total government expenditure (K millions)*	*(a) as a percentage of (b)*	*(a) as a percentage of (c)*
1968	176.18	306.11	305.69	57.6	57.6
1970	251.08	432.43	380.99	58.1	65.9
1971	114.07	360.71	430.31	31.6	26.5
1972	55.69	315.22	363.18	17.7	15.3
1973	101.62	482.03	782.26	21.1	13.0
1974	314.73	713.28	634.70	44.1	49.6
1975	59.40	475.98	855.04	12.5	7.0
1976	11.60	635.47	936.40	1.8	1.2
1977	-1.19	539.78	821.00	-0.2	-0.1
1978	0.06	584.31	815.42	0.0	0.0
1979	-9.80	634.70	956.41	-1.5	-1.0
1980	41.71	808.46	1,657.57	5.2	2.5
1981	1.05	852.09	1,388.61	0.1	0.1
1982	0.00	878.71	1,643.24	0.0	0.0
1983	53.40	1,099.71	1,475.92	4.9	3.6
1984	94.50	1,119.86	1,484.63	8.4	6.4
1985	129.50	1,602.44	2,184.33	8.1	5.9

Source: GRZ *Financial Reports* (annual issues, 1968, 1970-85).

Some recovery has occurred since then, with mineral revenues accounting for about 8 percent of government receipts in 1985, but this improvement has been due more to changes in the taxation system and to depreciations in the local currency than to improved real receipts. The mining sector's contribution to the GDP fluctuates in current terms around 14 percent, but in real terms it declined from 11.6 percent in 1977 to 9.0 percent in 1985.

In 1982 the real price of copper was at its lowest for nearly 40 years (Krumm 1985). During the years immediately after independence, the average real price was US¢175 per pound; between 1975 and 1983 it fell to US¢85 (Simson 1985); and by 1986 its price was round US¢60 per pound (EIU 1987). At the same time, production costs increased about 15 percent from 1985 to 1986, widening even further the gap between production costs and selling price.

A steady drop in the amount produced accompanied the fall in the price of copper and the increased production costs. Copper production reached its peak in 1969 with an output of approximately 750,000 tonnes; by 1982 this was down to 576,000 tonnes, and each year since has seen a decline, with the 1986 output of 459,172 tonnes marking a new postindependence low (GRZ 1987). This decline was partly due to a decline in the grade of copper ore (from 2.5 percent in 1974 to just 2 percent in 1986), but the major cause for the drop in production was the industry's inability to secure the foreign exchange it needed for essential spare parts, machinery, and fuel.

On the financial side, the industry's profitability has been severely affected by the huge devaluation in the local currency (table 3.2). This has raised the sales costs (in local currency terms) and, even more seriously, has vastly increased the amount of local currency needed to purchase the foreign exchange required for servicing the industry's debts.

Table 3.2 Foreign Exchange Rates and Deflators, 1975-86

Year	*Exchange rate, (Zambian kwacha per U.S. dollar)*	*Deflators for education sector (1977 = 100)*
1975	0.65	-
1976	0.90	-
1977	0.85	100.0
1978	0.79	110.7
1979	0.82	123.3
1980	0.80	137.2
1981	0.74	152.1
1982	0.93	172.0
1983	1.25	203.1
1984	1.79	223.7
1985	2.71	245.5
1986	8.90	332.6

Note: Unless otherwise noted, these exchange rates and deflators are used throughout the report.

Source: For exchange rate: EIU (various issues). For deflators: CSO, personal communication.

A further concern about the Zambian copper industry is that at current production rates reserves will be exhausted in less than 20 years (Daniel 1985). Although other large reserves exist, obtaining the capital for their development seems unlikely, especially since the availability of substitutes, such as optical fibers, makes the future need for large supplies of copper uncertain.

Zambia also markets cobalt, lead, and zinc on international markets. Cobalt is produced in association with copper, and prices have remained generally high. However, two factors have affected the production of cobalt. First, as a by-product of copper production, a decline in copper production means a decline in cobalt production. Second, in an effort to sustain the price, the mining industry has restrained production. Prices for both zinc and lead fell sharply in 1986, despite considerable demand for lead. Since the ore reserves for both these minerals have been almost depleted at the only mine (in Kabwe), production is expected to fall drastically (GRZ 1986). However, copper dwarfs the contributions of cobalt, lead, and zinc to the economy. During 1973 to 1984 copper accounted for 92.2 percent of all mineral sales, whereas cobalt accounted for only 4.1 percent, zinc for 3.0 percent, and lead for 0.7 percent (CSO 1985).

Oil Prices

The rise in oil prices that precipitated the world economic crisis in 1973 also affected Zambia. At a time when the country's income from its exports was falling, it was required to pay an everincreasing amount for its oil imports. In 1975, Zambia used about 8 percent of its foreign exchange earnings to purchase 852,000 tons of oil; in 1985, it used 33 percent of its foreign exchange earnings to buy a much smaller quantity (EIU 1987). "This rise in the share of the oil bill in the total import bill had to be at the expense of other equally vital imports" (Kaunda 1987, p. 2).

Trade Routes

A third external factor that caused serious dislocation in Zambia's economy in the 1970s was Rhodesia's Unilateral Declaration of Independence in 1965 and the liberation wars that led to Zimbabwe's independence in 1981. Estimates suggest that these events cost the Zambian economy over a billion U.S. dollars (ILO/JASPA 1981). The closure of the trade routes through Zimbabwe forced Zambia to develop other routes, which were far more costly. For a time, Zambia used the western railway line through Zaire and Angola to Lobito Bay, but the war in Angola closed this route in 1975. With the reopening of the southern border in 1978, an increasing volume of trade passed through Zimbabwe, but this was the longest and most expensive of the available routes. The commissioning in 1975 of the Tazara railway to Dar-es-Salaam opened a third route out of the country. Initially this line experienced considerable operational difficulties, but many of these appear to have been overcome. Since the beginning of 1987, 80 percent of mineral exports and all fertilizer imports are being carried on the Tazara line (EIU 1987); the remaining 20 percent of mineral exports are carried on the line through Zimbabwe to the port of Beira in Mozambique. The southern line continues to carry the largest percentage of imports, many of them originating in Zimbabwe, but some in South Africa, which in 1982 supplied 14.5 percent of Zambia's total imports.

Terms of Trade

Zambia's reduced ability to import capital goods, raw materials, and consumption goods was brought about in large measure by the fall in the price of

copper. However, another factor was the way in which the terms of trade deteriorated, with the index for import prices rising much more rapidly than that for exports. During 1979 to 1984, the import price index grew at an average annual rate of 23.3 percent, whereas the index for exports grew at an average annual rate of 7.4 percent. Simson (1985, p. 32) has pointed out that this kind of development cannot be attributed solely to inflation in the industrialized countries or to the increase in oil prices, but appears to be a reflection of the mark-up by exporters to Zambia to cover the cost of anticipated delays in payments. In other words, the economic problems themselves proved a further liability on the country's ability to import. This ability is being eroded even further by the unstable performance of international currencies. Zambia's sales of copper are paid for in sterling and U.S. dollars so that the purchasing power of foreign exchange earnings is affected by any change in the value of these currencies.

External Debt

When the price of copper collapsed in 1975, Zambia's foreign assets exceeded its external public debts. At the time the government did not expect that the sharp downturn in the price of copper would continue for long and confidently expected a substantial recovery in the demand for and price of copper. Hence, to tide the country over what appeared to be a period of temporary difficulty and to maintain the level of much-needed imports, the country drew down on its external reserves and turned to short-, medium-, and long-term borrowing. However, the expected recovery in the copper market did not materialize. Instead, the country had to resort to further borrowing from multilateral and bilateral agencies for major public projects and for general budgetary support.

As the balance of payments deficit grew, the government turned to the International Monetary Fund (IMF) for balance of payments support, but the facilities offered by the IMF were accompanied by conditions that the government did not always meet. It attempted to restructure the economy along the lines proposed by the IMF, but its efforts were not always wholehearted. For several years, Zambia was caught in the worst of dilemmas, unable to go it alone without massive foreign assistance, but unwilling, and to some extent unable, to adopt the measures that would assure the availability of such assistance. Some of the unwillingness stemmed from fear of the social and political consequences that might follow from adopting such measures as the elimination of subsidies for basic foodstuffs and fertilizers; some also stemmed from the ideological perspective of a centrally controlled economy. The inability to implement a restructuring program that was designed to refloat the economy was due, in no small measure, to the unwieldy bureaucratic system, which was further handicapped by low levels of managerial confidence and expertise.

The debt crisis came to a head in May 1987 when the government announced that it would forego IMF help but would take its own steps to revitalize the economy. One of the main measures adopted was to limit debt repayments to 10 percent of net export earnings (after meeting the foreign exchange requirements for the mining industry, oil, the national airline, and fertilizers). The balance was to be used for productive ventures that would help reactivate the economy (Kaunda 1987).

The sharp criticism that these moves drew in some quarters (see, for example, *The Economist*, May 9, 1987) took little account of the extent to which Zambia's debt had grown, the huge annual cost of debt servicing and the cost of debt rescheduling. The national debt has grown three-fold since 1980 and now constitutes considerably

more than twice the GDP. The cost of debt servicing increased dramatically between 1984 and 1986, rising from some 13 percent of foreign exchange earnings in 1984, through 43.3 percent in 1985, to almost 100 percent in 1986 (GRZ 1986). The strategy of rescheduling debts, which initially looked so promising, appears to have been counterproductive, since it has led to the capitalization of arrears of interest and hence to an increased economic burden.

Underutilization of Capacity

With the large commitment to debt-related payments, resources did not exist to maintain the supply of imports in the volume needed for the industrial and other sectors. The effect was to starve industry of the essential raw materials, equipment, and inputs it needed to sustain operations. In consequence, output has declined, not only in the mining industry, but in almost every manufacturing and industrial enterprise. This has led to underutilization of industrial capacity, with several enterprises operating at less than 50 percent of capacity, and some at even less than 25 percent. This manifests itself in shortened working weeks, days and even weeks of closures, temporary lay-offs, and periodic shortages of consumer goods. Despite these adversities, the manufacturing sector's contribution to the GDP rose in real terms from 17.6 percent in 1977 to 20.2 percent in 1985. Much of this improvement was offset, however, by a corresponding decline in the share of the construction industry.

Decline in Investment and Growth in Consumption

The deteriorating terms of trade, payments for imports, external debt payments, and the transfer of investment incomes and other invisibles abroad have all contributed to a net outflow of resources from Zambia. As in many other countries, this has contributed to a further chronic structural defect in the Zambian economy: the tendency for investment to decrease, and in consequence for consumption's share to increase. Gross investment stood at 33 percent of GDP during 1970 to 1974. For 1980 to 1984 it was 15 percent. It fell to 8.1 percent in 1985, and in 1986 reached an all time low of 7.1 percent. Most of the current investment is confined to the rehabilitation of existing capital stock in the mining, transport, and manufacturing sectors; almost none of the investment is used for new development. Meanwhile, consumption has increased. During 1970 to 1974 it constituted 58 percent of the GDP, while in 1981 to 1985 it rose to 81 percent. Government spending accounts for approximately 30 percent of the consumption, but the government's share has been declining since 1980, whereas private consumption has been increasing at an annual rate of 3.5 percent. However, the overall growth rate of consumption, 0.9 percent in 1985, is considerably below the population growth rate of 3.5 percent, indicating a decline in the standard of living.

Reflecting the decline in gross capital formation, government capital expenditure has declined sharply since 1976. In 1975 and again in 1976, capital expenditure exceeded 15 percent of the GDP, but by 1985 it had fallen to just 4.4 percent. Throughout the entire period 1975 to 1985, capital expenditure constituted on average no more than 7.8 percent of the GDP.

Employment

The decline of gross fixed capital formation meant that few capital developments were taking place that could help generate employment. Since 1975,

the number of people employed in the formal sector has been declining, with only a short-lived improvement from 1979 to 1981. In June 1986, 360,540 people were employed in the formal sector, 10 percent fewer than in 1975. However, during the same period, 1975 to 1986, the labor force was growing approximately 3.8 percent each year. In 1986, of a total labor force of 2.06 million, some 17.5 percent were employed in the formal sector.

Approximately one quarter of those in wage employment are in the primary sector, with 40 percent of these working in agriculture and 60 percent in mining. Recent years have seen an increase in the numbers employed in agriculture and a decrease in the numbers employed in mining. A further quarter of those in wage employment are in the secondary sector, but here the number has declined by more than 16 percent since 1975, due mainly to a greatly reduced level of activity in the construction industry. The tertiary sector employs the largest proportion of wage earners—approximately 50 percent—and the proportion is growing. This is due principally to a steady increase in the number of government employees.

The proportion of non-Zambian employees has fallen steadily in the years since independence, from 32,100 in 1964 to 11,850 in 1985. Most of the remaining non-Zambians are in key positions in specialized technological, accounting, educational, and medical fields.

Agriculture

Estimates suggest that some 1.1 million people are employed in the informal sector. Many of them are engaged in agriculture, mostly at the subsistence level. Of the estimated 460,000 households, about 63 percent are traditional subsistence farmers; they purchase few inputs and are characterized by a low level of productivity. The remainder of the farming households are subdivided into

- some 146,000 small-scale commercial or emergent farmers who typically cultivate between two and ten hectares, use mainly hoe cultivation, and make some use of improved seeds and fertilizers;
- about 23,500 medium-scale farmers who cultivate between 10 and 40 hectares, use oxen and possibly tractors, and may employ hired labor;
- about 800 large-scale farmers who use advanced technology on farms that invariably exceed 40 hectares (Norrby 1986).

The government has formulated three main aims for Zambia's agricultural policy: to achieve self-sufficiency in basic foodstuffs and agricultural raw materials; to diversify the economy and the export base by processing agricultural surpluses; and to reduce the rural-urban income gap. However, these objectives have proved elusive. Zambia's degree of self-sufficiency in food crops declined from 97 percent during 1964-66 to 79 percent during 1970-80 (Simson 1985, p. 47). The shortfall had to be covered by imports.

Inadequate producer incentives, poor marketing arrangements, nonavailability of inputs, and uncertain climatic conditions all contributed to the decline in production of maize and other field crops in the late 1970s and early 1980s. More realistic pricing policies and more determined efforts to establish a satisfactory marketing system led to considerable improvements during the last five years. Marketed maize production reached an all-time high of 918,000 tons in 1986, thus bringing self-sufficiency in this commodity, the staple food of about half

the population. However, 1987 did not repeat the successes of 1986 because of poor rainfall in some of the major maize growing areas, and because fertilizer was not always available when needed. The area cultivated for major crops has increased somewhat, but at less than 1.5 million hectares, the area under cultivation is still only a small fraction of the arable land available (estimated at some 40 million hectares).

The contribution of agriculture to the GDP has varied. In real terms, its contribution declined between 1977 and 1982, with 1981 being an exception because of the bumper maize harvest. Since 1982, however, there has been an increase of almost 25 percent. Despite the increase in the contribution of agriculture to the GDP, the sector's overall growth has lagged behind population growth. While the latter has been growing at an average annual rate of 3.5 percent, agricultural growth averaged only 1.4 percent annually between 1977 and 1985. Green and Singer (1984) estimate that per capita food production declined by 8 percent during 1969/71 to 1979/81, but this figure seems high. World Bank estimates of a decline of 1.9 percent from 1971 to 1979 and 2.4 percent from 1980 to 1984 appear more realistic, but whatever the actual figure, the fact remains that food production has fallen behind the population increase and shows signs of falling still further. Clearly Zambia's government will have to make an extraordinary effort to reverse this trend, which has such serious implications for the nutritional status of the population.

Rural-Urban and Income Disparities

Analysts have frequently pointed out that much of Zambia's development has been biased against the rural population. This is manifested in such ways as the movement of the rural-urban terms of trade against the rural inhabitants. The International Labour Organisation (ILO) has estimated that between 1973 and 1980, the prices of agricultural goods that generated incomes for the rural population deteriorated by 23 percent relative to the prices that rural people had to pay for urban produced goods. Moreover, while the average wage earner (usually a city dweller) was 43 percent better off in 1977 than in 1965, agricultural incomes per head were nearly 40 percent below the 1965 level (ILO/JASPA 1981).

The heavy subsidization of basic foodstuffs implies a use of resources in favor of those who do not grow their own food, that is, city dwellers. Food subsidization policies can also keep agricultural prices down so that producers do not receive returns in line with the benefits that purchasers obtain.

In the health sector, although some 55 percent of the population live in rural areas, only some 30 percent of total health care expenditure is aimed at these areas. Per capita expenditure in areas served by rural health clinics was only K0.60 in 1982, compared with K12.27 in the Lusaka urban area and K2.35 in areas with a district or provincial hospital (which could be classified as urban) (UNICEF 1986). Successive development plans have expressed the intention of bringing about a more equitable distribution of national resources, but the government has not yet achieved this objective.

Allied to the rural-urban dichotomy is a sharp distinction on the basis of income. In 1976, the richest 5 percent of all households earned roughly 35 percent of the entire national household income, while the poorest 40 percent received only 8 percent (ILO/JASPA 1981). The ILO also estimated that about 80 percent of rural families and 26 percent of urban families had incomes below basic needs levels. To narrow the gap between incomes, the government started giving junior officials salary increases that are proportionately higher than those awarded to more senior

officials. Because of this policy, in 1985, a university graduate entered the public sector at a salary that in real terms was less than a quarter of that prevailing in 1967, whereas the salary of the unskilled worker maintained about three-quarters of its 1967 value (UNDP 1986, table 1.10).

Inflation

The gap in incomes persists and is reinforced by the different levels of inflation for the low-income and the high-income groups. Each year since 1975 price increases have affected those on low incomes more severely than those on high incomes. By 1986 the rate of inflation stood at 51.6 percent for the high-income group, whereas it was considerably higher, 58.4 percent, for the low-income group. The survival strategy adopted by many poor households in the face of inflationary price increases has been to reduce the number of daily meals or to purchase fewer of the more expensive foodstuffs, particularly protein food items (Munachonga 1987). The effects on the nutritional status of the poor people, and especially on their children, are severe. The overall inflation rate has increased dramatically since 1981, reflecting the rapid rise in prices in response to the removal of price controls and the uncontrollable way in which the local currency depreciated following the introduction in 1985 of the system of foreign exchange auctioning. With the abandonment in May 1987 of the auction system, the government has reintroduced price controls and stemmed the upward rise of interest rates. It is not known yet whether these measures can do anything to bring down the very high rate of inflation.

A further factor leading to galloping inflation has been the growth in the money supply. Since 1975, this has been growing at an annual average rate of almost 13 percent. The large and steady increase in the money supply was not accompanied by a corresponding increase in the production of goods and services. The pressures thereby created fueled those arising from other causes to bring about the inflationary spiral.

Gross Domestic Product

The uneven but generally deteriorating condition of the Zambian economy is underscored by examination of the GDP. In real terms, the GDP grew from K1,986.4 million in 1977 to K2,052.2 million in 1986, a growth of less than 0.4 percent per annum. Since the population was growing at the same time and at the much faster rate of 3.3 percent, real per capita GDP suffered a serious decline, from K382.0 in 1977 to K280.8 in 1986, a fall of almost 36 percent, or an annual deterioration of 3.5 percent. In U.S. dollar terms, the per capita GDP fell from US$588 in 1977, through US$365 in 1982, to US$109 in 1985 (on the basis of average prevailing exchange rates). Some of this massive decline can be accounted for by earlier overvaluations of local currency and the adjustments that have since taken place.

Deficit Financing

Deficit financing has become an almost normal part of the public finance system. Until the economic crisis of 1975, government revenues normaliy exceeded expenditures, although provision was made for occasional deficit financing. However, since 1975, public finances have been in deficit every year.

Although revenues increased substantially due to alterations in the tax base, their growth was outstripped by the growth of expenditures. Since 1975, the deficit has exceeded 10 percent of the GDP in all but three years.

A considerable part of the annual deficit can be attributed to the heavy burden of subsidies, principally for foodstuffs and fertilizers, and to the large amounts spent each year in debt-related payments. Since the government has decided to restrict debt repayments to 10 percent of net foreign exchange earnings, the annual deficit is likely to decline. The government has also made considerable progress in reducing the level of subsidies, but removing them entirely has not proved possible. An attempt to remove food subsidies at the end of 1986, with a resultant substantial increase in the price of basic foodstuffs and other essential commodities, met with intense and violent public resistance and resulted in several deaths in food riots.

Conclusion

The economic problems outlined in the preceding paragraphs have been aggravated by the following:

- demographic issues (see chapter 4);
- fluctuating weather conditions that have adversely affected attempts to develop the agricultural sector;
- the legacy from colonial times of underdeveloped human resources, especially those with high-level managerial and technological skills;
- the influx of refugees from neighboring countries;
- the many political and security problems that arise from armed conflicts in Namibia, Angola, and Mozambique, and from the role played by South Africa throughout the region.

Strictly economic factors, arising primarily from Zambia's unbalanced economy and its dependence on a single primary product, may have brought about the economic decline, but these other social and human factors have hastened its progress.

4

Demography

The first attempt to conduct a census in Zambia was in 1963, toward the end of the colonial period, but the first really comprehensive census was not taken until 1969. This was followed 11 years later (August 1980) by the most recent census, and another census is planned for 1990. At the time of the 1980 census, the population of Zambia was 5.66 million, of whom 2.77 million (48.9 percent) were male and 2.89 million (51.1 percent) were female.

Characteristics of the Population

The population's most striking characteristics are its youth, its growth rate, and its spatial distribution. In 1980 those aged 14 and under constituted 49.8 percent of the population, compared with 46.4 percent in 1969. The primary school age group, 7 to 13 year-olds, constituted more than 21 percent of the total.

The population's youthfulness has several important implications.

- The population of school-going age will increase enormously: from 1.5 million at the primary level in 1985, to an estimated 2.6 million by the year 2000.
- An increasingly large number of young people will enter the labor force each year: in 1980 the labor force was estimated at 1.65 million (omitting the 12 to 14 year-olds), but it is projected to reach 2.4 million by 1990 and 3.5 million by the year 2000 (CSO 1985a).
- The population's growth rate will remain high even if each woman has fewer children, since each woman of childbearing age will be replaced in the next generation by several women who are already born.
- The economically active sector of the population will have to bear the increased burden of supporting the many children under 15 and adults aged 65 and above. The increase in the under-15 population was the principal reason why the number of dependents increased from 95 for every 100 productive adults in 1969 to 111 in 1980. The financial burden that this high level of dependency implies for the adult population is increased by the large proportion of those in the 15 to 17 age group that are in schools and hence not economically active.

The population is growing fast, and the rate of growth is itself becoming faster. Between 1963 and 1969 the annual average rate of growth was 2.8 percent; between 1969 and 1980 it was 3.1 percent; today it is estimated to be 3.5 percent; and estimates suggest that it will rise to 3.7 percent by the end of the decade (CSO 1985a). This is due to a constant high fertility rate (the average fertility rate in 1980 was 7.2), and to a declining death rate. When the effects of mortality are taken into account, each mother is being replaced by two or three daughters who will survive to become mothers themselves. This high level of fertility is maintained by the practice of early marriage: the reported mean age for marriage for all women is 18.3 years.

The death rate was estimated as 18.9 per thousand population in 1974, but had fallen to 16.7 in 1980. This has been largely due to improved and more widely available medical services. As these extend further, the death rate, which is still on the high side compared with other African countries, will fall further. The overall death rate includes the infant mortality rate—estimated at 97 deaths per 1,000 live births in 1980—but this too is declining. Associated with the decline in the death rate is an increase in life expectancy, from 47.8 years for females in 1969 to 52.2 in 1980, and from 44.6 to 50.4 years for males. Life expectancies in the rural areas are about five years lower than those in the towns.

The population's spatial distribution has two aspects: the relative population densities of different areas and urbanization. Because of the concentration of economic development in four provinces along the north-south railway (Copperbelt, Central, Lusaka, and Southern), and because much of the best agricultural land is found in these provinces, a disproportionately large part of the population is concentrated along a corridor some 60 kilometers wide that cuts through the country from the Copperbelt in the north to Livingstone in the south. These four provinces accounted for 55.2 percent of the 1980 population, although they constitute only 30.8 percent of the country's total area. The country's average population density is 7.5 persons per square kilometer.

Apart from Algeria and South Africa, Zambia is the most highly urbanized country in Africa. The proportion of the population living in urban centers of 5,000 or more inhabitants almost doubled between 1965 and 1980, rising from 20.5 to 39.9 percent. During 1969 to 1980, the urban population grew at an average annual rate of 6.7 percent, whereas the rural population grew only 1.1 percent during the same period. Just over half the present growth of the urban population is due to natural increase, with the remainder attributable to in-migration from rural areas. A change has occurred, however, in the pattern of urban growth. In the 1960s the principal growth centers were Lusaka, Livingstone, Kabwe, and the Copperbelt towns, but in the 1970s the small provincial and district administrative and service centers grew more rapidly. Urbanization has also been very rapid along the new Tazara rail line from Kapiri Mposhi to Dar-es-Salaam.

The unbalanced distribution of population and the continued high rate of rural-urban migration pose serious social and economic problems. The large concentration of people in the urban areas depends on the agricultural production of the rural areas for its supplies of foodstuffs, but the thinly scattered rural population creates problems for agricultural development, among them the establishment of a good communications infrastructure and an efficient marketing and distribution system.

Another problem is the number of female-headed households in the rural areas. In 1980 approximately one-third of the rural households fell into this category, compared with less than one-fifth in the towns. The rapid increase in the number of such households has serious implications for the well-being of children, whose

mothers cannot provide for all their nutritional and educational needs. The growth of this phenomenon can be traced partly to rural-urban migration, especially of single men seeking employment in the mines and other urban-dominated sectors, and partly to instabilities in marriage caused by the absence and movement of men.

Population and Education

Population variables have implications for educational provision, while educational provision affects certain population variables. The most important factors for education are the size of the population and its growth rate. Without knowledge of these figures, there can be no accurate estimate of shortfalls in provision or targets to be attained. In Zambia, the rapid growth of the population has the most serious implications for educational provision. In 1980 there were 1.33 million children of primary school age (7 to 14 year-olds), and the primary school enrollment was 1.04 million. By 1985, there were some 1.50 million primary school aged children and 1.35 million school places. By the year 2000, the number of children is projected at 2.64 million, and an additional 1.3 million school places will need to be created if they are all to be provided with seven full years of primary education. If the Zambian policy of extending nine years of basic education to every child were to be implemented, a total of 3.1 million school places in grades 1 to 9 would be needed by the year 2000.

The 1980 census provides information on three areas where education may affect population characteristics. These are fertility, age at first marriage, and infant and child mortality. The total fertility rate for those with secondary education is 6.4, compared to 7.4 for those with primary education or no schooling at all. For those with university education the fertility rate drops to 3.5. Part of the reason for the differences is that females in the more highly educated categories begin childbearing much later in life than those in the less educated categories. In general these findings are consistent with those of Cochrane (1979), that education is associated with first a rise and then a fall in fertility.

The level of education was also found to have a bearing on the reported mean age at first marriage, though not always in the expected way. The reported mean age at first marriage for all women was 18.3 years, but was higher (18.7 years) for women with no education and lower (17.5 to 17.9 years) for women with primary or junior secondary. However, the influence of level of education beyond the junior secondary is very pronounced, with the mean age at first marriage rising to 20.6 years for those with senior secondary education and to 23.7 for those with tertiary education.

A third important finding, which confirms what has been observed in other parts of the world (Cochrane, O'Hare, and Leslie 1980), is that infant and child mortality is inversely related to the level of formal schooling of the mother. An infant whose mother had no education experiences a 16.8 percent chance of dying before the age of five, whereas the probability for an infant whose mother has had primary education falls to 13.9 percent, and the probability falls further, to 6.6 percent, if the mother has had secondary or higher education. Likewise, the life expectancy of those whose mothers had secondary or higher education is very much higher—by as much as 15 years—than of those whose mothers had no schooling. At all educational levels of mothers, the life expectancy is higher and the implied mortality levels are lower in urban than in rural areas, presumably because of the

greater availability of health facilities, clean water supplies, and retail shopping outlets in the urban areas. Nevertheless, even in the rural areas the influence of the educational level of the mother on her offspring's chances of survival are considerable.

The Data Base

Zambia's projected need for school places and the gross enrollment ratios have traditionally been based on a considerable underestimation of the real size of the population. Thus, in the 1981 edition of *Educational Statistics* (published by the Ministry of General Education and Culture in 1986), the size of the primary school age group is given as 1.264 million, whereas the 1980 census had already recorded 1.332 million as the size of this group, a figure that at the prevailing growth rate would have risen to 1.377 million by 1981. If this had been taken into account, the gross primary enrollment ratio for 1981 would have been recorded as 77.9 percent and not 84.9, as appeared in the publication. In other words, the officially published figures, and those supplied by Zambia to UNESCO and the World Bank, may be based on unreliable data bases. All such figures should be treated with some caution and with the realization that percentages given for enrollment and participation rates are likely to be on the optimistic side. This report strives to present a more realistic picture by making extensive use of data from the 1980 census. Because of this, some of its indicators may not agree with those in other documents.

5

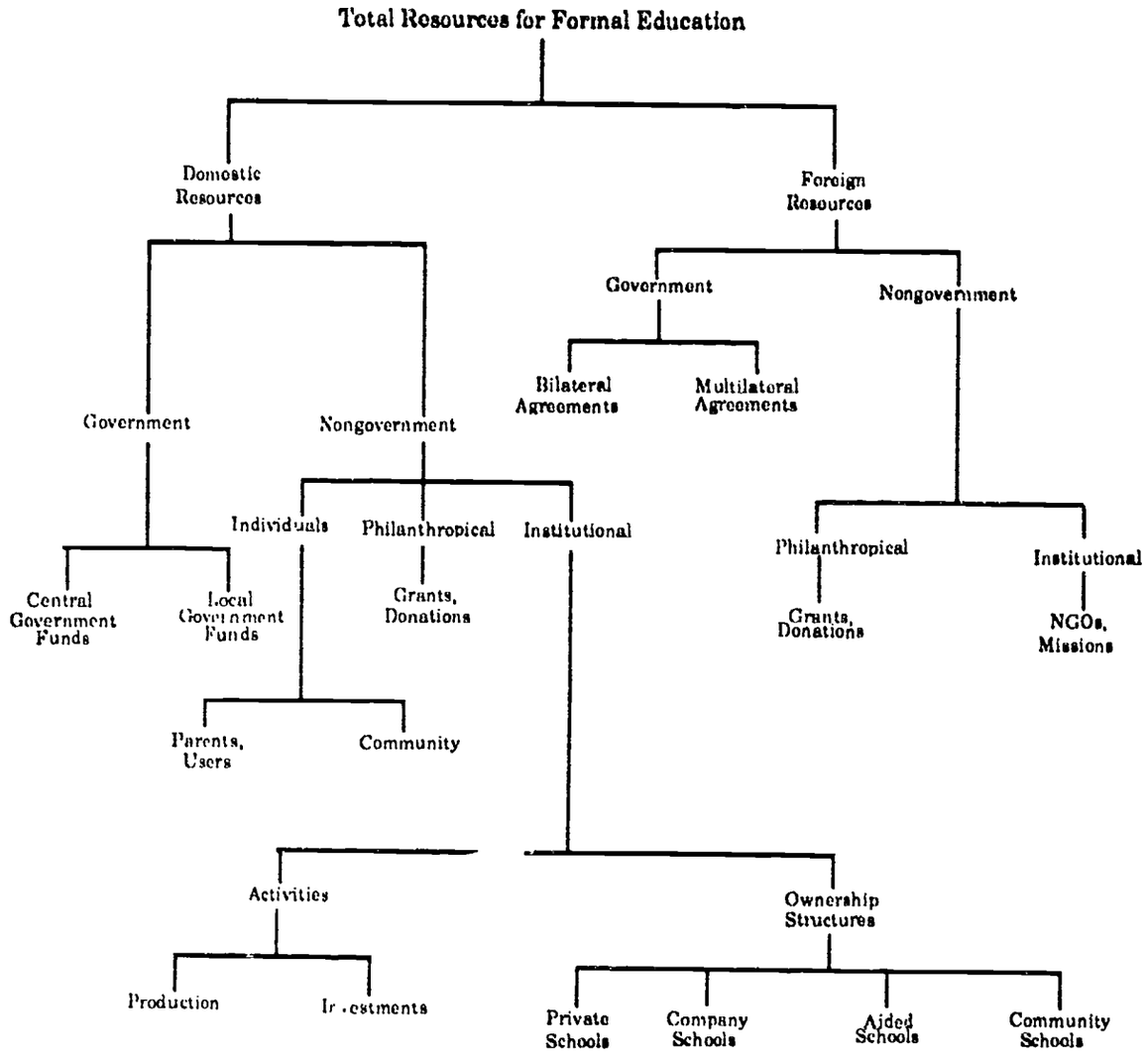
The Financing of Education, 1975 to 1985

The funds and resources required for Zambia's education system come from a variety of sources (figure 5.1). Some of these sources have played a role since the beginnings of formal educational provision; some have come to play a role only in recent years; while the role of some is still on the drawing board. Essentially, the principal sources on which the education system depends for its direct or indirect financing are central government revenues, official development assistance from abroad, and private and institutional resources. Each of these is examined to determine the adjustments that were made in the years of financial stress.

The Financing of the Social Services Sector

Some authors (for example, Lewin 1986; Lourie 1986) state that in a period of financial difficulty the social services sector will suffer from relatively greater cutbacks than other sectors of the economy. This is because, as noted in chapter 1, the services provided in this sector are not seen to contribute directly and immediately to economic production, whereas the sector itself is acknowledged to be probably the largest spender of public funds and hence the most obvious target for cuts and reductions. This expectation is not borne out, however, in the Zambian case. As table 5.1 reveals, although the share of the GDP used by the social services ministries (Education, Health, Information and Broadcasting, Labour and Social Services, and Youth and Sport) fell between 1975 and 1985, the somewhat erratic decline was much less severe than that experienced by the "productive" ministries (all agriculture-related ministries, Commerce and Industry, Mines, and Tourism). The share of the social services ministries fell from 9.2 to 7.3 percent, a decline of almost 21 percent, the share of the productive ministries fluctuated considerably, with a notable rise in 1980 due to capitalization in the mining and energy sectors, but overall their share of the GDP fell from 4.0 percent in 1975 to 2.5 percent in 1985, a decline of 38 percent. In terms of total government expenditures, the social services ministries actually increased their share from 17.0 percent in 1975 to 21.1 percent in 1985, whereas the productive ministries' share fell over the same period from 7.3 to 7.1 percent. The importance attached to the provision of social services can be gauged from the fact that on average, throughout a decade of very grave financial problems, the social services sector received just twice the

Figure 5.1 The Origins of Educational Resources in Zambia



amount that was devoted to the productive sector, notwithstanding the exceptionally large commitment to the latter in 1980. Since the data on which these ratios are based include not only capital provisions, but also subventions in the form of loans and investments (but with the exclusion of subsidies), severe economic problems clearly did not prevent Zambia from making a strong effort to support the social services sector.

Within the social services sector, approximately 63 percent of the annual expenditure has consistently been devoted to education. At the level of recurrent expenditure, education received twice as much on average as was devoted to health, and four times what was devoted to agriculture (table 5.2). During 1975-85, the real per capita GDP declined by 23.9 percent, from K382 to K291. Per capita spending fell within all three areas, agriculture, health, and education, but in none to the same extent as the per capita GDP. The decline was most severe in agriculture, at 19.1 percent, whereas in education the drop was 10.1 percent, and in health it was 3.4 percent. Figures of this nature inevitably bring into stark relief the difficult investment choice that is implicit in every allocation of resources to education. They also suggest that the formal education system, which absorbs virtually all the resources for education, is given a much higher priority than any system of

Table 5.1 Government Expenditure on Social Services and Productive Ministries, 1975-85

Category	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Percentage share of GDP											
Productive ministries	3.95	2.62	2.61	3.34	3.80	15.41	2.27	4.68	2.99	2.55	2.45
Social services ministries	9.18	9.20	9.02	7.80	6.94	6.94	7.20	9.92	8.74	7.74	7.26
Percentage share of total government expenditures											
Productive ministries	7.31	5.23	6.30	9.21	10.56	28.47	5.69	10.25	8.47	8.45	7.10
Social services ministries	17.00	18.40	21.83	21.53	19.30	12.82	18.08	21.69	24.76	25.71	21.05
Expenditure ratios											
Social services/ productive ministries	2.32	3.52	3.46	2.34	1.83	0.45	3.17	2.12	2.92	3.04	2.97
Education/ social services ministries	0.67	0.67	0.63	0.63	0.63	0.61	0.61	0.61	0.62	0.65	0.64
Education/ productive ministries	1.57	2.36	2.19	1.46	1.14	0.27	1.92	1.28	1.80	1.99	1.89

Note: All subsidies are excluded.
Productive ministries = all agriculture-related ministries, Commerce and Industry, Mines, Tourism.
Social services ministries = Education, Health, Information and Broadcasting, Labour and Social Services, Youth and Sport.

Source: GRZ *Financial Reports* (1975-85).

Table 5.2 Recurrent Expenditure per Capita by the Ministries of Agriculture, Health, and Education, 1977-85
(in constant 1977 kwacha)

Year	*Agriculture*	*Health*	*Education*
1977	4.51	9.97	18.36
1978	3.96	8.29	16.80
1979	3.66	8.06	16.03
1980	3.58	8.39	15.39
1981	3.28	8.13	16.29
1982	4.80	10.19	18.88
1983	4.62	7.94	16.51
1984	3.78	7.22	15.97
1985	3.65	9.63	16.51

Note: Agriculture includes all agriculture-related ministries: Agriculture and Water Development, Lands and Natural Resources, Cooperatives, and their predecessors. All subsidies are excluded.

Sources: GRZ *Financial Reports* (1977-85); CSO (1986).

agriculture extension or education. However, it may be that "investment choice" is not an appropriate description in this context, though "operational priority" is, since much that occurs in decisionmaking about the allocation of resources, especially in times of financial difficulty, consists of merely responding to inescapable commitments, especially those for teacher salaries for an evergrowing enrollment.

The Financing of Education

For education itself, the picture of overall resource allocation is somewhat mixed. The percentage of constant GDP devoted to education declined between 1977 and 1979; then it rose, peaking in 1982; it declined again in 1983 and 1984, but improved slightly in 1985 (table 5.3). The sharp rise in 1982 is mirrored in other sectors of the economy and reflects a substantial public sector pay increase effected during that year. The figures show that there was a decline in the national effort in the early years of the economic collapse, but substantial recovery in the 1980s. As will be seen, this U-shaped pattern, decline followed by recovery, tends to be characteristic of other aspects of educational provision during this decade. Across the entire period to 1985, education's share of GDP averaged 5.5 percent. This compares very favorably with other countries in Africa, for example, it is higher than the average of 4.6 percent for the countries of East Africa (Wolff 1934, p. 38), and is exceeded by only 8 out of 29 countries for which data are available (World Bank 1986, appendix table 2).

The actual proportion of its spending that the government devotes to education each year likewise presents a somewhat mixed picture (table 5.3). In the years immediately after the recession set in this proportion rose, but then in 1977 it began

Table 5.3 Educational Expenditures in Relation to GDP and Government Expenditure, 1975-85
(at current prices)

Category	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	
GDP												
GDP (kwacha millions)	1,583.40	1,872.20	1,986.40	2,250.70	2,660.40	3,063.60	3,485.40	3,595.30	4,181.20	4,931.00	6,332.10	
GDP per capita (kwacha)	323.80	371.50	382.00	419.90	482.00	539.40	596.80	594.30	672.20	768.10	942.30	
Government expenditures (kwacha millions)												
Total expenditure	855.04	936.40	821.00	815.42	956.41	1,657.57	1,388.67	1,643.24	1,475.93	1,484.63	2,184.33	
Recurrent expenditure	609.47	608.89	660.70	647.07	791.04	1,081.97	1,230.53	1,323.02	1,250.01	1,302.55	1,906.47	
Capital expenditure	245.57	327.52	160.30	168.35	165.37	575.60	158.08	320.22	225.92	182.08	277.86	
Routine running costs[a]	259.28	298.10	309.32	309.93	371.22	449.63	567.26	721.19	710.58	775.02	994.36	
Education expenditures (kwacha millions)												
Total expenditure	98.01	115.88	113.08	109.80	115.54	128.25	151.52	212.20	224.96	249.18	293.19	
Recurrent expenditure	75.41	94.14	95.46	99.67	109.11	119.91	145.47	196.51	208.57	229.34	272.40	
Capital expenditure	22.60	21.74	17.62	10.13	6.44	8.34	6.05	15.69	16.40	19.85	20.79	
												Mean 1975-85
Percentage relationships												
Total government expenditure/GDP	54.00	50.04	41.33	36.23	35.94	54.10	39.84	47.71	35.30	30.11	34.50	39.56
Total education expenditure/GDP	6.19	6.19	5.69	4.88	4.34	4.19	4.35	5.90	5.38	5.05	4.63	5.04
Total education expenditure/total government expenditure	11.46	12.38	13.77	13.47	12.08	7.74	10.91	12.91	15.24	16.78	13.42	12.74
Recurrent education/recurrent government	12.37	15.46	14.45	15.40	13.79	11.09	11.82	14.85	16.69	17.61	14.29	14.42
Recurrent education/routine running costs	29.08	38.87	30.86	32.16	29.39	26.67	25.64	27.25	29.35	29.58	27.39	31.42
Capital education/capital government	9.20	6.64	5.03	6.02	3.89	1.45	3.83	4.90	7.26	10.90	9.86	5.90
At constant 1977 prices												
GDP (kwacha millions)	--	--	1,986.40	1,983.40	2,068.80	2,010.70	1,982.00	1,773.10	1,821.00	1,902.00	1,953.70	
Per capita GDP (kwacha)	--	--	382.00	370.00	374.80	354.00	339.40	292.90	292.80	296.30	290.70	
Total education expenditure	--	--	113.08	99.19	93.71	93.48	99.62	123.37	110.76	111.39	119.43	
Total education expenditure/GDP	--	--	5.69	5.00	4.53	4.65	5.03	6.96	6.08	5.86	6.11	5.51

-- = not applicable

a. Routine running costs = personal emoluments, recurrent departmental charges, grants and other payments.

Sources: GRZ *Financial Reports* (1975-85); CSO (1986).

to decline until in 1980 it reached an all-time low of 7.7 percent. It rose steadily and substantially after that, to reach 16.8 percent in 1984, but fell to 13.4 percent in 1985. The average percentage for the decade was 12.7. Unlike the relationship to the GDP, these figures appear low by comparison with other African countries. Wolff (1984, p. 38) records 15.6 percent as the average for 17 countries of eastern Africa. At no time in its history did educational spending in Zambia ever come near the proportions of 20 percent or more that are recorded for Kenya, Rwanda, Zaire, or the Côte d'Ivoire.

In terms of routine running costs, that is, what the government spends for all ministries on personal emoluments, departmental operating costs, and grants to institutions (such as the university), education's share has been consistently high, about 30 percent or more. However, its share of these costs fell somewhat over the decade, from about one-third in 1975 to 1980 to just over 30 percent in 1980 to 1985.

The annual recurrent and capital expenditure on education per member of the population averaged approximately K18 (at 1977 prices) during 1975 to 1985, or US$21 at the 1977 exchange rate. Two things stand out from table 5.4, which shows the yearly spending per inhabitant. One is the way that per capita expenditure has fallen in dollar terms since 1982, this being largely due to the revaluation of the local currency. The second is the way Zambia's per capita expenditure did not follow the pattern for the rest of Africa in the second half of the 1970s. Instead of increasing, as it had done throughout the continent, it first fell and then stagnated. At the onset of the economic crisis in 1975, Zambia was spending on education half as much again per capita as the rest of Africa, but by 1979, Zambia's spending was one-sixth less. This was due, at least in part, to the impact of the economic setbacks.

Table 5.4 Expenditure on Education per Capita in Zambia and Developing Countries, 1975-85

Year	*Zambia*		*All developing countries (US$)*	*Developing countries in Africa (US$)*
	Kwacha	*US$*		
1975	20.0	30.8	19	18
1976	22.9	25.5	22	21
1977	21.7	25.6	24	24
1978	20.5	25.9	27	27
1979	20.9	25.5	31	30
1980	22.6	28.2	n.a.	n.a.
1981	25.8	34.9	n.a.	n.a.
1982	35.1	37.7	n.a.	n.a.
1983	36.2	28.9	n.a.	n.a.
1984	38.8	21.7	n.a.	n.a.
1985	43.6	16.1	n.a.	n.a.

n.a. = not available

Note: Capital expenditure included.

Source: GRZ *Financial Reports* (1975-85); Coombs (1985, appendix table 5.2).

The improvement that began to show in the early 1980s was reversed after 1982 with the continuing deterioration of the economy and efforts to correct the distorted foreign exchange rate that had prevailed earlier.

The general picture that emerges is of efforts to maintain and increase the level of educational spending during a decade of financial hardship, efforts that met with mixed success. The competing claims of other budgetary areas for limited resources did not result in any significant or maintained diversion of resources away from education. Instead, the government took steps to ensure that education's share was not allowed to decline too dramatically. These efforts succeeded to the extent that real spending on education increased 5 percent between 1977 and 1985, but the impact of this was counteracted by a 44 percent increase in enrollment during the same period.

Expenditure by Level of Education

Within the education sector, approximately two-thirds of the expenditure goes to primary and secondary schools, one-sixth to the university and bursary payments, and the remaining one-sixth to teacher and technical education, sundry support departments, and the costs of administering the education system. Since 1975, shifts have occurred in the subsectors that account for the greater part of educational spending (table 5.5). This is most noticeable at the level of the university and bursaries for students studying at the university or abroad. These two areas taken together doubled their share of the recurrent educational expenditure from slightly over 9 percent in 1975 to over 18 percent in 1985. This increase has taken place at the expense of almost all other subsectors. The proportions spent on primary, secondary, teacher, and technical education in 1980-85 were all lower than those in the period 1975-80. Primary education suffered a 3.5 percent drop in its share of educational resources; 9.3 percent was cut from secondary education; teacher education lost 8.5 percent; while the greatest proportional loss, 19.5 percent, was sustained by technical education. The university, however, increased its share of educational expenditure by 28 percent, and the share devoted to bursaries almost trebled. A similar pattern emerges when considering the recurrent expenditure at each level as a function of the GDP.

We have already noted that real expenditure on education increased 5 percent between 1977 and 1985. This enabled real expenditure at the primary level to increase from K44.93 million in 1977 to K48.69 million in 1985, but in the secondary, teacher training and technical education subsectors, some decline was evident. There was an almost steady rise in real terms in the amount spent each year on the university and on bursaries. Real expenditure on the sundry service departments (curriculum development, psychological services, examinations, educational broadcasting, and so on) and on ministry central and regional headquarters increased substantially (over 39 percent) between 1977 and 1985. Most of this increase was necessitated by expansions in the activities and range of support services provided by the various departments. Although a second education ministry was established in 1982, it did not occasion any increase in expenditure at the central level.

Unit Costs

The various changes in expenditure proportions and amounts must be viewed against the background of increasing enrollment. These increased at all levels

Table 5.5 Recurrent Educational Expenditure by Level, 1975-85

Subcategory	*Primary*	*Secondary*	*Teacher training*	*Technical education*	*University*	*Bursaries*	*Other*	*Total*
				Actual expenditure in millions of kwacha				
1975	34.16	16.75	2.13	6.69	5.89	0.95	8.84	75.41
1976	44.71	20.96	2.42	7.69	8.64	0.80	8.92	94.14
1977	44.93	21.69	2.65	7.42	9.00	0.99	8.77	95.45
1978	47.16	22.16	3.06	7.57	9.60	1.56	8.56	99.67
1979	50.16	24.06	3.41	8.16	11.28	2.04	10.01	109.12
1980	54.53	26.98	3.73	8.76	12.90	2.36	10.66	119.92
1981	63.01	29.06	4.33	10.53	19.71	6.39	12.45	145.48
1982	89.18	40.21	5.47	13.06	27.26	6.21	15.13	196.52
1983	97.32	42.02	5.26	12.76	22.47	9.72	19.03	208.58
1984	101.43	47.36	6.75	13.02	27.81	10.02	22.94	229.33
1985	119.55	51.83	5.84	15.49	34.84	14.88	29.98	272.04
				Percentage distribution				
1975	45.30	22.21	2.83	8.87	7.81	1.26	11.72	
1976	47.48	22.26	2.57	8.17	9.18	0.85	9.48	
1977	47.07	22.73	2.77	7.78	9.43	1.04	9.19	
1978	47.32	22.23	3.07	7.60	9.63	1.56	8.58	
1979	45.97	22.05	3.12	7.47	10.34	1.87	9.17	
1980	45.47	22.50	3.11	7.31	10.76	1.97	8.89	
1981	43.31	19.98	2.98	7.24	13.55	4.39	8.56	
1982	45.38	20.46	2.78	6.65	13.87	3.16	7.70	
1983	46.66	20.15	2.52	6.12	10.77	4.66	9.12	
1984	44.23	20.65	2.94	5.68	12.13	4.37	10.00	
1985	43.89	19.03	2.14	5.69	12.79	5.46	11.00	
Means								
1975-80	46.43	22.33	2.93	7.80	9.65	1.46	9.39	
1980-85	44.79	20.26	2.68	6.28	12.37	4.23	9.40	

Note: Percentages may not add up to 100 due to rounding.
Source: GRZ *Financial Reports* (1975-85).

except in technical education, where they fell somewhat. The increase in primary school enrollment far outstripped the slight increase in funds expended, with the result that unit costs at the primary level have fallen sharply in real terms. In 1977, the government spent K44.93 million on meeting the educational needs of 936,817 children; in 1985, it spent K48.69 million (at 1977 prices) on 1,348,639 children. The 8.4 percent increase in real expenditure was overwhelmed by the 44.0 percent increase in enrollment. In consequence, unit costs at the primary level fell in real terms from K47.96 in 1977 to K36.11 in 1985, a drop of 24.7 percent (table 5.6).

The decrease at the secondary level was even more severe. In 1977, the government spent K21.69 million on secondary education for 83,887 pupils. In 1985, it spent K21.11 million (at 1977 prices) for 131,502 pupils. Thus, unit costs fell from K258.61 in 1977 to K160.53 in 1985, a decline of 37.9 percent. These figures include transfer payments made on behalf of boarders who constituted more than half of the secondary school enrollment throughout most of the period. On removing the costs of boarding, unit costs for strictly academic activities fell by over 50 percent, from K209.41 in 1977 to K104.20 in 1985.

This halving of real unit costs at the secondary level must be interpreted carefully, bearing in mind the changing composition of the secondary school teaching staff. Two significant changes, with implications for unit costs, have occurred in the staffing of secondary schools since the mid-1970s. First, the proportion of expatriate staff has declined steadily, from 2,228 (70 percent) in 1975 to 888 (18 percent) in 1984. In 1975, at least two-thirds of the expatriate teachers were on regular contract appointments, fully supported by local funds (the remainder were supported by various donor agencies). By 1984 this proportion had fallen to about 50 percent. The need to pay end-of-contract gratuities, as well as travel and education expenses, made the expatriate teacher much more costly than a comparably qualified and experienced local person. Second, the proportion of graduate teachers decreased while the proportion holding a diploma increased. As salaries are based on qualifications, diploma holders are cheaper to hire than graduates. In addition, most of the teachers are relatively young, and therefore at relatively low points on their salary scales.

Since salaries constitute approximately 60 percent of the government expenditure at the secondary level, the use of less costly teachers allows the authorities to accomplish more with the same or even fewer resources. Some experts advocate adopting a deliberate policy to this end, especially at the primary level where the proportion of resources devoted to salaries is so high, but this is not always possible and at times it is not pedagogically desirable (Eicher 1984). Zambia's experience at the secondary level illustrates the impact the adoption of such a measure could have, although what occurred in Zambia was not the outcome of a deliberate policy decision, but an unforeseen outcome of the process of Zambianization.

The most dramatic shift in the size of the unit cost has been at the university, where it has increased substantially in real terms (table 5.6). In 1977, the university had a full-time student population of 3,351 and an allocation of K9.0 million for its operating costs, giving an operational unit cost of K2,686. To this we must add the student bursary awards of K0.99 million paid by the government. Thus, the total unit cost in 1977 was K2,982, or 7.4 times the per capita GNP. By 1985 this figure had grown to K4,211 (at 1977 prices) or 15.9 times the per capita GNP, and was made up of an operating grant of K14.19 million and bursary awards of K4.14 million for 4,352 students. This was an increase of over 41 percent during a period

Table 5.6 Costs per Student by Education Level, 1977-85
(in constant 1977 kwacha)

Education level	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Primary schools	47.96	44.17	40.82	38.14	38.59	46.22	40.09	35.97	36.11
Secondary schools including boarding	258.61	224.98	212.57	207.86	193.24	222.94	179.87	168.30	160.53
Secondary schools excluding boarding	209.41	181.62	164.72	161.16	150.36	170.82	138.62	129.00	104.20
Teacher training	700.23	705.07	627.49	611.61	634.57	826.97	601.23	648.22	463.74
Technical education	1,303.91	1,184.20	1,252.78	1,196.14	1,258.22	1,339.83	1,187.67	1,185.40	1,198.71
University including bursaries	2,981.62	2,855.66	2,863.62	2,905.90	4,315.43	4,916.24	3,943.29	3,681.18	4,210.68
University excluding bursaries	2,685.77	2,457.38	2,432.44	2,465.87	3,324.77	4,140.00	2,782.76	2,978.75	3,260.49

Source: GRZ *Financial Reports* (1977-1985), enrollment data.

when the unit costs for primary education fell by 25 percent and for secondary education (including boarding costs) by almost 38 percent.

Part of the large increase in unit costs for the university may be attributed to the commencement of university operations in the Copperbelt in 1978 and to the establishment of new programs (such as land surveying, veterinary medicine, and architecture) that, because of the small number of students involved, tend to be expensive. But note also that the figures shown are actually underestimates because they do not take account of the extensive development assistance programs that contribute heavily to the support of staff, the purchase of equipment, the provision of transport, and the other running costs of the university.

In 1977, the annual cost per university student was about 62 times that of a primary pupil, but by 1985 unit costs at the university were more than 116 times what they were in primary schools. At the secondary level, the average unit cost at the university was about 13 times that for secondary schools in 1977-80, but rose to 23 times for 1982-85. Clearly, the government allocated relatively more resources, and in growing proportions, to the university than to other levels of education and at the expense of the other levels. If the primary and secondary schools had received in 1985 the proportion of resources that they had received on average in 1977-80, they would have had an additional K6.5 million (at 1977 prices) at their disposal. Because of enrollment increases this would still not have been enough to prevent their unit costs slipping back, but the slippage would not have been quite so great. One of the challenges that now faces education economists in Zambia is how to rectify this imbalance.

Unit costs relative to GDP for Zambia and other countries and regions are shown in table 5.7. This table reveals that the ratio of unit costs to per capita GDP in Zambia is low at the primary level, much the same as the average for anglophone Africa at the secondary level, and high for university education. In other words, Zambia does not spend as much per student on primary education as many of its neighbors, but spends proportionately more than several of them on students in higher education.

Expenditure by Function

An analysis of educational spending reveals that at the primary level salaries absorb an everincreasing proportion, and an ever-diminishing proportion remains available for all other costs, especially for purchasing teaching materials and classroom supplies. The proportion spent on salaries rose from 84.4 percent in 1975 to 95.6 percent in 1985. At the same time, the proportion spent on teaching requisites fell from 9.8 percent of expenditures in 1975 to 1.7 percent in 1985. Actual expenditure on salaries and wages rose from K40.91 million in 1977 to K46.56 million in 1985, while expenditures on teaching materials fell from K2.21 million in 1977 to K0.63 million in 1985 (when enrollments were more than 40 percent higher).

The opposite situation prevailed at the secondary level. The proportion spent on salaries fell from 64.3 percent in 1975 to 61.1 percent in 1984. The drop in the salary component when the number of teachers was rising rapidly—from 3,202 in 1975 to 5,043 in 1984—was largely due to the changing composition of the teaching force as explained earlier. The increase in the expenditure on teaching materials was such that the real per capita expenditure for these items rose from K13.84 in 1977 to K14.20 in 1985. The protection of the allocation for teaching items at the secondary level in a time of financial adversity is a notable achievement, but when contrasted with the

Table 5.7 Ratio of Unit Costs of Education to per Capita GNP in Selected Countries and Regions

Country/Region	*Primary schools*	*Secondary schools*	*Higher education*
Zambia (1983)	0.14	0.50	14.0
Zambia (1984)	0.13	0.48	13.6
Botswana (1979)	0.20	1.03	6.5
Kenya (1980)	0.14	0.52	9.9
Malawi (1981)	0.06	1.08	15.9
Tanzania (1981)	0.12	2.94	30.9
East Africa	0.16	0.85	10.4
Sub-Saharan Africa			
Anglophone	0.18	0.50	9.20
Francophone	0.29	1.43	8.04
All developing countries	0.14	0.41	3.70
OECD countries	0.22	0.24	0.49

Sources: Table 5.5; Wolff (1984, annex I, tables 5 and 18); CSO (1986); Mingat and Tan (1986, table 3).

disastrous decline at the primary level, it bears out the vulnerability of the weaker sectors in a period of financial hardship. There may be a second aspect to this. In Zambia, responsibility for preparing the budget for primary education rests with regional offices that answer to the office of the prime minister. However, responsibility for the budget at the secondary level rests with the Ministry of Education's central headquarters. We can hypothesize that centrally prepared budgets, with advocates on the spot to plead for their causes, will suffer less in times of economic difficulty than those that are prepared at the local level.

The considerable variation in locally determined budgets for primary education is revealed in table 5.8, which shows expenditures by region. This does not follow the expected pattern of larger allocations to urban as opposed to rural regions, but instances occur where regions with fewer pupils have received allocations several times larger than regions with many pupils.

The regional expenditures per pupil demonstrate the uneveness of resource allocations between regions and from year to year. The line-of-rail regions—Copperbelt, Central, Lusaka, and Southern—do not come out as the most favored despite their generally higher proportion of trained teachers. In some years the highest per capita allocation of resources was in rural regions, such as Luapula, although for each of the years shown the lowest allocation was always in another heavily rural region, the Northern. This region also had the smallest allocation for the purchase of teaching materials in four of the five years for which data are available.

Table 5.8 Primary School per Capita Expenditures by Region, 1981-85
(constant 1977 kwacha)

Region	*1981*	*1982*	*1983*	*1984*	*1985*
			All educational costs		
Lusaka	38.13	48.47	43.85	37.12	33.63
Copperbelt	39.22	46.75	41.20	36.62	40.15
Central	36.95	46.59	39.59	36.54	35.26
Northern	33.88	41.17	36.00	32.34	28.93
Western	40.94	50.09	42.11	37.71	37.63
Eastern	35.36	41.99	36.31	32.42	33.71
Luapula	50.28	49.29	41.17	40.68	38.15
North-Western	39.57	47.75	41.10	35.09	33.00
Southern	37.90	46.74	40.18	36.40	40.28
Zambia	38.59	46.22	40.09	35.97	36.11
			Student requisites		
Lusaka	1.00	0.94	0.77	0.47	0.19
Copperbelt	0.63	1.52	0.65	0.75	0.76
Central	1.11	1.25	0.86	0.56	0.32
Northern	0.79	0.89	0.47	0.35	0.16
Western	1.33	2.37	0.99	0.93	0.79
Eastern	1.01	1.35	0.77	0.59	0.58
Luapula	1.47	2.53	0.92	1.06	0.75
North-Western	0.45	3.01	1.89	1.38	0.95
Southern	0.97	1.34	0.70	1.38	1.22
Zambia	0.93	1.53	0.79	0.79	0.63

Sources: GRZ *Financial Reports* (1981-85); Ministry of General Education and Culture enrollment data.

No pattern is apparent in table 5.8 except the particularly severe drop in funds for teaching materials experienced in Lusaka, Northern, and Central regions. Clearly, when budgetary submissions are prepared they do not adhere to any norms or standards. In their absence, much is left to the resourcefulness of local education representatives and the vigor with which they can present their submissions.

The analysis of unit costs provides valuable information when policymakers try to determine whether they can pass any part of the costs of education on to parents or communities. For example, parents may be unwilling to shoulder the costs of teachers' salaries, while being quite willing to assume other education-related costs. In a survey conducted for the Educational Reform Implementation Project, only 20 percent of parents stated that they would be willing to assume

responsibility for teachers' salaries, but more than 50 percent were willing to take on other educational costs (Kelly and others 1986, table 33). However, as already discussed, the bulk of government expenditure on education is on salaries; thus, if communities were to assume responsibility only for the nonsalary components of current education expenses, the government would save little. The tendency for salaries to rise rapidly in current terms while the costs of other items are likely to rise more slowly or even decline, might also deter parents from participating in bearing salary costs. Parents might also feel that they were being called upon to subsidize teachers, who are relatively well off, when they would prefer to use their resources to benefit their children more directly and tangibly.

Capital Expenditure

The level of capital investment in education has shown a sharp decline, with real spending in 1985 being only about one-tenth of that in 1975 (table 5.3). There was a general downward slide in the level of spending until an all-time low was reached in 1981; after that some recovery occurred, but this has not been maintained in real terms. Education's share in the government's overall investment program fell from 7.4 percent during 1975-79 to 6.8 percent during 1981-85. This occurred at a time when total public investment was falling steadily in relation to the GDP; hence capital investment in education declined substantially as a proportion of the GDP: in 1975-79 it was 0.76 percent, but in 1981-85 it was only 0.35 percent.

In general, investment in education since 1975 was lower than planned. Initially this was due not to a shortage of funds, as the government's *Annual Report* for 1975 frankly acknowledges, but to the lack of capacity to use the funds available. However, once the recession took hold, the funds to meet planned investment targets were not available. During the period of the Third National Development Plan (1979-83) actual expenditure was only some 40 percent of the planned total.

This sharp drop in educational investment occurred at a time when enrollments were increasing rapidly. During the period 1975-77 an increase of 78,626 in primary school enrollment was made possible by an investment of K7.8 million (at 1975 prices). During the subsequent five years, 1978-82, the enrollment grew by a further 184,952, but the investment fell to K4.6 million, while more recently in 1983-85 an enrollment increase of 226,920 was sustained by capital expenditure of no more than K0.3 million. In other words, the investment at the primary level fell from K99 per additional place in 1975-77 to K1.3 in 1983-85; a drop of more than 98 percent. Because of the time lag between the commitment of capital trends and full enrollments in the classrooms to which they give rise, some of the additional pupils may have had adequate classroom space and furnishings; some may also have been housed by community and self-help projects. Large numbers were also accommodated by making maximum use of classroom space. Where warranted by enrollments, classrooms were used to house three shifts of grade 1 to 4 pupils—in the morning, across the middle of the day, and in the afternoon—and two shifts of grade 5 to 7 pupils. But these strategies have not prevented severe overcrowding from occurring in many urban schools where class enrollments of 60 to 80 are often found.

Capital expenditure at the secondary level also fell, though not to the same extent as at the primary level: the unit capital cost of providing for the additional enrollments was approximately K850 in 1975-77 and K190 in 1983-85. But at this level also enrollments were made to grow without any corresponding growth in

Table 5.9 Capital Expenditure on Education, 1975-85
(kwacha millions)

Year	*Current prices*	*1975 prices*
1975	22.60	22.60
1976	21.74	16.37
1977	17.62	10.50
1978	10.13	4.66
1979	6.44	2.51
1980	8.34	2.92
1981	6.05	1.93
1982	15.69	4.35
1983	16.40	3.67
1984	19.85	3.09
1985	20.79	2.26

Note: Deflated by wholesale price index of goods for fixed capital formation (CSO 1986, table 46).

Source: GRZ *Financial Reports* (1975-85).

classroom space, a fact reflected in the increase in size of the average secondary class, which grew from 37 in 1975 to 44 in 1985.

The picture of declining investment in education is gloomier when we note that what is termed capital expenditure includes not only development activities, but all foreign aid that is directed toward education. Some of this is clearly investment-related and intended for the provision of school buildings and plant, furniture, equipment, and capital goods. But much of the foreign aid has a large component of technical assistance that covers personnel, training, and sometimes project operating costs. Available records do not permit disaggregating actual expenditure into amounts spent on capital works, technical assistance, and operating costs. The best we can do is to identify (from 1980 onward) the local and foreign components of the capital estimates at the level of budgetary approval, that is, before expenses are incurred. The picture this gives is of development aid accounting for approximately 50 percent of the capital budget. The importance of foreign aid is further increased because actual funds made available are always less than the approved estimates. The expenditure incurred between 1980 and 1985 averaged 85 percent of the approved amounts, with most of the shortfall due to constraints on local resources. Resources from abroad always remained available as committed.

The secondary sector accounted for the largest share, more than 35 percent of total capital expenditure from 1975 to 1985 (table 5.10), while teacher training accounted for the least expenditure. The "other" category refers to expenditures on support departments, the needs of the education ministry's headquarters, and teaching materials. The increasing proportion accounted for by this "other" category is due to the increasing amount of foreign aid that the ministry headquarters administers directly, mostly for the supply of teaching materials.

Table 5.10 Distribution of Capital Expenditure over Educational Subsectors, 1975-85 *(percent)*

Subsector	*1975-77*	*1978-82*	*1983-85*	*1975-85*
Primary schools	15.8	28.0	3.7	15.1
Secondary schools	30.7	17.2	55.4	35.4
Teacher training	6.3	6.4	1.6	4.7
Technical education	21.4	10.6	2.6	11.9
University	16.6	16.7	6.5	13.1
Other	9.2	21.1	30.2	19.8

Source: GRZ *Financial Reports* (1975-85).

The major capital developments during 1975-85 included constructing 13 new primary schools in Lusaka and additional primary classrooms and some new schools in the regions; introducing a national teachers' housing program; providing water, electricity, and sewage systems for schools in rural and urban areas; repairing rural primary schools; replacing schools in rural areas that had been provided on a self-help basis and that were no longer usable; constructing 20 secondary schools in rural areas and additions to 56 existing schools; rehabilitating 69 government schools; and supplying desks and equipment to primary schools. The rapid rise in the cost of building materials meant that several projects were underfinanced and hence could not be completed, for example, the Lusaka Primary Schools Project, where only 13 of the 20 planned schools were built. Progress was slow on other projects and several were completed much behind schedule. These delays led to increased project costs and hence adversely affected work on other projects.

Education's Investment Needs

We have already noted the low level of fixed capital formation in Zambia. The entire economy is consumption-oriented, with about 80 percent of resources in 1980-84 being devoted to consumption and only 15 percent to investment. The picture for education is similar. Education is heavily consumption-oriented, with only a small fraction of the total resources left for investment purposes. In 1975-80, capital expenditure within the education sector accounted for 12.8 percent of all public spending on education. This expenditure fell to 6.4 percent in 1981-85.

Clearly, Zambia requires a more substantial level of investment to enable the education system to function efficiently. Many schools have been allowed to deteriorate to the extent that major capital expenditure is now required to rehabilitate them. Schools that have been maintained satisfactorily require regular investments lest they too deteriorate, while those that have already been rehabilitated require investments that will protect them from lapsing into their former state of decrepitude. The extension of primary education to all eligible children will require considerable investment to build new schools, expand teacher training facilities, and provide school furniture and teaching equipment.

It is difficult to see how all that needs doing can be accomplished if the present low level of investment continues, and if an order of priorities is not established for

the various programs and projects. However, the Third National Development Plan (TNDP) rejected the need to set priorities:

> Programmes and projects to be undertaken during the TNDP assume that all priority areas indicated in the "Educational Reforms" are of equal value and that any reductions or curtailments should be on the basis of certain items which might be deleted or slowed down from particular categories rather than on the basis of eliminating whole categories (GRZ 1979, p. 355).

When investment funds are so very limited, the above approach is unlikely to be suitable. The establishment of priorities clearly requires much thought and wide consultation, but the following are good candidates for high priority consideration:

- the development of low-cost, functional classrooms and other school buildings designed to meet the needs of a given district or set of districts using the human and material resources available within these districts;
- the establishment of a maintenance capacity with sufficient funds and expertise to attend both to the rehabilitation and the ongoing maintenance needs of educational institutions at all levels;
- the development of productive capacity for all necessary school materials (desks, books, writing materials, equipment, science apparatus);
- the physical expansion and development of the primary sector and the expansion and improvement of teacher training colleges.

New secondary schools, technical education institutions, and major university developments are not included since, given the present state of educational provision and of the economy, they do not warrant priority consideration. However, the list of priorities above would not preclude them from receiving some capital assistance to enable them to use their existing resources more effectively and to meet their needs for equipment and teaching materials. Institutions at all levels would, of course, be included in the provisions for institutional rehabilitation and maintenance. Likewise, institutions at all levels would profit from the development of local capacity to produce teaching materials and supplies.

6

Financing Education: Some Critical Issues

Apart from the general difficulty of providing enough resources for the educational system, the following are some of the most critical issues related to the financing of education.

- the burden of everincreasing salaries for the growing numbers of teachers;
- the increasing amount absorbed by transfer payments;
- the decreasing amount available for teaching requisites;
- the virtual disappearance of funds to maintain educational institutions;
- the structural imbalance in the financing of the system.

The issues above interact closely. Policy measures can be adopted that will control some of them or lessen their impact, while others are less amenable to policy interventions. More farsighted and disciplined management of resources when these were more abundant might have controlled the development of some of the problems, but given Zambia's political and social climate, containing all of them would have been impossible. This chapter will review these problems to determine where the declining resource base had its most severe impact and where steps can be taken, even at this advanced stage, to lessen that impact.

Teachers' Salaries

As already pointed out, teachers' salaries constitute the largest single component of expenditure at all levels of education. The government could adopt three strategies, singly or in combination, to reduce, or at least control, this item of expenditure. It could decide to

- pay teachers less,
- employ fewer teachers,
- employ less costly teachers.

Pay Teachers Less

Although teachers' salaries have grown at a very high rate in current terms, and in general consume an increasingly large part of the available resources, they have not been able to keep pace with inflation. Hence teachers, like their colleagues

in virtually every part of the economy, have experienced a decline in salaries in real terms because of the lack of funds. The increases awarded were made possible only by withdrawing resources from other activities and creating money through deficit financing.

As teachers are public servants, any body established to examine the pay structure of the teaching service must do this in the context of a general examination of pay awards for all government employees. The dominant factor in determining the appropriate salary scale for any government employee has been, in almost all cases, the formal educational qualification possessed. However, this policy has constrained the development of teachers' salaries. Even though these have tended to be marginally higher than those paid to comparably qualified individuals in other areas of government service, commissions established to review public salaries have always endeavored to retain certain relativities between the various cadres and to tailor increases in one sector to those awarded in another. Hence, even though teachers constitute a distinct and quite powerful subgroup of public employees, the government's policy ensured that their salaries increased or were restrained along a common front established for all its employees.

Thus, even if it had so wished, the government could not have enforced a strategy aimed at paying teachers less unless it was part of a wider strategy to pay all public servants less and to impose much stricter controls on the growth of salaries in the parastatal sector, especially in the mining industry. However, the economy had got too much out of hand for any such control to be possible. President Kaunda admitted as much in May 1987 when, referring to the imposition of temporary wage freezes in the context of measures introduced to resuscitate the economy, he stated that "the sluggish growth of wages and real incomes as a result of the policy of wage restraint only led to mounting social and political tensions and a drastic fall in the living standards of our people" (Kaunda 1987, p. 7).

By 1985, teachers' real salaries had fallen to about half their 1975 value. The political and social tensions President Kaunda spoke about would not have allowed them to fall much lower. Pedagogic considerations—the need to motivate teachers and to prevent them having to supplement their incomes by undertaking economic activities outside the classroom—also speak in favor of not allowing teachers' salaries to decline too much. Hence any strategy that proposed containing the growing impact of teachers' salaries on the education budget by paying them less would have been doomed to failure.

Employ Fewer Teachers

A second strategy that would lessen the burden of teachers' salaries would be to employ fewer teachers. This can be accomplished by (a) adjusting the system to make more efficient use of teachers; (b) modifying the system so that fewer teachers are needed; and (c) controlling the development of the system and the employment of teachers more purposefully.

Adjustments within the system have proved the most popular approach in Zambia. These adjustments have consisted essentially of making the maximum use of double session teaching where a teacher has complete responsibility for teaching one lower primary class (grade 1 to 4) early in the day and a second class later. More informally, they have consisted of enlarging classes. Without the combination of multiple session teaching and large classes, Zambia could not have achieved the current high levels of enrollment.

Although these practices have enabled enrollment of a nominal 90 percent of primary school-age children, they are giving rise to grave dissatisfaction. Gross overcrowding occurs in urban classrooms, with more than 100 children reported in some classes. In 1986, the national average class size was 41, but it was 54 in Lusaka and 51 in Kitwe.

In principle, the length of the teaching day is not affected by the number of sessions a teacher teaches or the number of shifts a classroom is made to accommodate. All children at the grade 1 to 4 level are supposed to receive three and a half hours of instruction for five days each week, and those at the grade 5 to 7 level five and one-third hours. But the logistics of using classrooms for two or three shifts during daylight hours require some reduction in the number of hours of instruction that children actually receive, while teachers who teach double sessions are left with no time to organize extracurricular activities. In general, multiple session teaching is an unsatisfactory expedient that has led to considerable tardiness and absenteeism on the part of both pupils and teachers. More than two decades have passed since the Radford report called for its abolition (UNESCO 1964), but instead of being abolished, it is being extended to bring more children into the schools. Studies are required on how it can be organized more effectively. Possibly alternate day teaching could replace the present practice of morning sessions for one group and afternoon sessions for another. The research evidence on the impact of double session teaching on student performance is inconclusive (Fuller 1985); nevertheless, the poorest performance in the grade 7 examinations is found consistently in the region that has the longest history and widest use of double session teaching.

The cost-effectiveness considerations that lead to the widespread use of multiple session teaching have not governed the deployment of teachers or salary arrangements. Teachers are appointed unevenly, with higher teacher to student ratios in some regions and in certain schools. This arises partly from political and social pressures, and partly from the absence of clearcut guidelines on staffing norms and from a policy that guarantees employment to all members of the Teaching Service, even if they choose to live in a place where all teaching posts are already filled. This policy leads to considerable overstaffing in many schools, while others remain inadequately staffed. Urban areas are the most overstaffed, and female teachers are most frequently appointed in excess of need. Allied to this problem is the absence of norms for the use of teachers. Some teach for only a few hours per day or week, while others teach for as many as 34 hours per week.

More sharply defined policies are needed that will determine whether or not teachers should be guaranteed employment in areas where schools are already fully staffed and will set down the minimum number of hours of teaching required. However, such policies must be backed up by the will to implement them and the management capacity to do so. Rumors abound that illustrate the current lack of management capacity. People say that salaries are being drawn on behalf of teachers who have quit teaching or even died. The extent of such malpractices is not known, but management controls are insufficient to ensure that salaries are paid only to those who actually teach in schools.

A final adjustment that has been made in Zambia to make more efficient use of the stock of teachers is the introduction of multigrade teaching, where one or two teachers provide all the instruction in a primary school, from grades 1 through 7. This system, introduced in 1985, has enabled some incomplete schools to be extended to the upper primary level. This system is suitable for areas where the population is small and scattered and where the school enrollment is low. It has

proved satisfactory and will be extended to some 150 primary schools. However, as only 5 percent of primary schools will qualify to become multigrade schools, the cost savings are small.

The government has considered approaches that would involve modifying the education system so that it could reach more students but still use almost the same level of resources, but these have not all found favor. One such modification (Ministry of Education 1976a) was that schools should operate on a rotating system. One group of students would attend school for three months while another group undertook guided study at home. They would then switch, and keep switching year round. However, the proposal drew so much public opposition that it never got to the stage of serious planning.

A second modification would be to place greater reliance on methods of distance teaching. A variation of this approach is used at the grade 8 level through the establishment of supervised study groups, that is, class size groups of students who have failed to secure entry to secondary schools and who study specially prepared materials under the supervision of a qualified adult (frequently a teacher's wife), but who receive no formal teaching. About 5 percent of grade 7 school-leavers find their way into such groups. Although the system was established in 1972, its effectiveness has not yet been evaluated. But no form of distance education exists for primary level children, and in any case, distance teaching may be less suitable for children in the lower primary grades. In the upper primary grades distance teaching might well turn out to be no cheaper than conventional teaching methods, and given the public's reaction to the rotating system, any system of primary education that does not assure conventional face-to-face teaching is likely to be rejected.

More purposeful control of the development of the education system and of the employment of teachers does, however, remain a possibility. For decades the government has permitted, even encouraged, capital development without considering the implications for recurrent expenditure. Oxenham (1984) recounts how as a junior government administrator in Zambia before independence, he was able to assure villagers that if they put up a classroom and a house for the teacher, the District Education Authority would provide the teacher. This practice continues today. Communities are encouraged to participate in self-help activities and are assured that once the capital provisions have been made, the government will take on the running costs, including teachers' salaries. But the government does not keep track of the growth of these recurrent costs, evaluate their impact on other needs, or assess the level of resources that will be required and whether these will be forthcoming. The outcome is uneven development.

This problem is currently most severe at the grade 8 level, where the social and political pressure to expand educational provision is very great. In rural areas where primary facilities are already adequate, the demand is for pressing ahead with more grade 8 openings. These are sanctioned if the community provides the necessary structures. Once established they are staffed by taking the best teachers out of the primary schools, but they are provided with a minimum of furniture, equipment, and supplies. Apprehension is growing that by comparison with regularly established secondary schools, these "basic education schools" may be second-rate establishments in which adolescent children do little more than mature physically before being exposed to the world of adult life and work. Yet the proliferation of these schools siphons off the best teachers from the primary schools and resources from the secondary schools.

This type of development is not new: 60 years ago bush schools of very low quality and with virtually no resources proliferated alongside the maintained school system (Snelson 1974). Ironically, these bush schools also developed at a time of severe economic difficulty when the collapse of copper prices threw the country into disarray. But the draconian measures applied then to lessen the impact on recurrent expenditure are not being applied now. Instead, growth is allowed to go ahead in an uncontrolled and unplanned way. If unchecked, the policy of uncontrolled development of basic schools may result in commitments outstripping available resources.

Some realignment is also needed in the hiring practices for teachers. Currently, all students who successfully complete a teacher education program are assured of employment as teachers. This policy was in order when the system was expanding rapidly. It remains a suitable policy for trainees from primary teacher training colleges, since there is still a shortfall in the number of trained teachers and the growth of the child population will require continued expansion at the primary level. But the slower development of secondary school facilities and the reduced numbers of teachers leaving the profession combine to make this policy inappropriate at the secondary level. It has already led to overstaffing and wasted resources.

Employ Less Costly Teachers

A final strategy that would reduce the impact of teachers' salaries would be to employ less costly teachers. This has already happened, more by default than by design, at the secondary level. The employment of untrained teachers in primary schools has also reduced the salary bill. However, Zambia's policy is to replace these teachers with better educated and better qualified individuals.

The evidence about the relationship between pupil achievement and the length of the teacher's own schooling is conflicting (Fuller 1985), but there is reasonably strong evidence, from both industrialized and developing countries, that the teacher's level of verbal competence promotes the level of pupil performance. If such competence were developed by a longer period of secondary education, requiring all candidates for teacher training to complete the full secondary cycle would be reasonable. This is the decision that has been made in Zambia, partly in the instinctive belief that better educated candidates will make better teachers (and reports from the training colleges bear out that this is likely to be so), and partly in an effort to absorb some of the potentially unemployed secondary school-leavers. However, the government does not seem to have considered the impact of this decision on long-term financial commitments when the more highly educated teachers are paid up to 17 percent more than their less educated but equally well-qualified colleagues. So far as qualifications are concerned, the evidence shows that teacher training contributes to an improvement in pupil performance (Fuller 1985). Hence, the financial implications aside, the Zambian effort to ensure that all its teachers are trained appears to be justified.

Conclusion

What has emerged in the preceding pages is that pressures in Zambia were so strong that they worked against paying teachers less, employing fewer teachers, or employing less costly teachers. Educational developments cannot be divorced from the society in which they occur, and Zambian society was not prepared to tolerate

more than superficial adjustments to its education system. These adjustments were too slight to make any real impact on the proportion of resources devoted to salaries. Society appears to have accepted this without reflecting on the consequences. In addition, decisions were taken and situations tolerated without adequate information on their likely impact. One example of this was the failure to evaluate the recurrent cost implications of capital developments. Another was the determination to raise teachers' educational and professional skills without first determining whether this would improve pupils' achievements, and if so, whether it would be cost-effective. Finally, Zambia lacks a good information and research network that would inform, guide, and support rational policy formulation and decisionmaking. In particular, there is no system for ongoing review of staffing needs, thus there is no basis on which to assess likely staff needs in the future.

Transfer Payments

The total expenditure on student subsidies of all forms, or transfer payments, has risen rapidly since 1977 and has more than doubled in real terms, both absolutely and in relation to the GDP (table 6.1). Transfers account for a substantial share of the total education budget: they amount to approximately a quarter of what is spent on primary schools and a half of what is spent on secondary schools. In the past, the greatest share of the transfers has been for the secondary schools and the university. Clearly, the government was prepared to increase the amount devoted to transfer payments, even if this meant withdrawing resources from other areas. But the government's willingness to subsidize the personal needs of students was not accompanied by a clear recognition of the equity and efficiency implications of this transfer of resources.

Table 6.1 Transfer Payments, 1977-85

Category	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Total transfer payments (kwacha million)	7.31	7.32	8.20	8.24	11.11	11.91	11.78	11.65	16.14
Transfers —as percentage of GDP	0.37	0.37	0.40	0.41	0.56	0.67	0.65	0.61	0.83
—as percentage of recurrent educational expenditure	7.66	8.13	9.26	9.43	11.61	10.43	11.47	11.36	14.54
—as percentage of recurrent primary expenditure	16.27	17.18	20.14	20.56	26.81	22.98	24.59	25.68	33.13
—as percentage of recurrent secondary expenditure	33.70	36.55	41.98	41.92	58.12	50.96	56.95	55.00	76.47
—at primary level as percentage of expenditure at primary level	0.40	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
—at secondary level as percentage of expenditure at secondary level	18.50	19.30	22.50	22.50	22.20	23.40	22.60	23 40	35.10
—at university as percentage of expenditure at university level	9.90	13.90	15.10	15.10	23.00	15.80	29.40	19.10	25.50

Note: All figures are based on constant 1977 prices.

Source: GRZ *Financial Reports* (1977-85), other tables in this paper.

The expenditure per secondary school boarder in 1984 was much the same, in constant terms, as it had been in 1977, but the 1984 expenditure per university

student was more than two and a half times that in 1977. In other words, most of the increase in transfers occurred at the university level, where a very powerful group exerted strong pressure. This group consisted of students whose disruptive behavior led to closures of the university for lengthy periods in 1976, 1982, 1984, and 1986. In addition to actual closures, work at the university was frequently disrupted by student agitation.

In 1982 the government appointed a commission to examine affairs at the university. The commission found that the root cause of much of the unrest lay in political and ideological differences between vocal elements of the students and government, but admitted that personal allowances, catering services, and hostel facilities were also involved (Nyirenda 1986).

The government appears to have given little consideration to the equity implications of using public resources to pay for student welfare needs. Bursaries had initially been introduced in the name of equity: nobody was to be denied access to education because he or she could not pay for it. The government assumed that if equality of opportunity was available at the level of entry to the education system, it should be a feature throughout the system. It did not recognize that home background had a significant effect on scholastic performance and hence on whether students went on to higher education (Kapambwe 1980). Evidence presented in chapter 14 points to the emergence in Zambia of a self-perpetuating educated class. Since education is strongly correlated with socioeconomic status, the better-off segments of society are proportionately better represented in secondary and higher education than those less well off. Zambia is not alone in this. Mingat and Tan (1986) have shown that in anglophone Africa, individuals from white-collar homes may receive five times as much of the educational resources as their farmer colleagues. No figures are available for Zambia, but the evidence supports the authors' statement that "the white-collar group is the most successful in appropriating public education resources for themselves" (Mingat and Tan 1986, p. 269). This inequity increases when educational subsidies are made possible by reducing the amounts available for primary education, the level at which the poor participate on a more equal footing with the rich.

None of this appears to have been appreciated during the period under review, until in 1985, the government suddenly announced that boarding fees would be reintroduced in secondary schools the following year. The ministerial statement about the decision drew attention not only to the worsening financial situation, but also to the inequity in using public resources to pay for all boarding costs. The government took longer to take up the issue of bursaries for university students, but its consideration of this matter was publicized through what appear to have been calculated leaks to the press during 1986. At the end of 1986, the government officially recognized the problem in the annual plan for 1987 (GRZ 1986). There, for the first time, official recognition of the imbalance in the financing of primary and tertiary education was noted, and the government stated that fees would be introduced at the university.

> The volume of subsidy appropriated by university students relative to other categories is very striking. The students receive free tuition and boarding fees, book allowance, subsistence and transport allowance. These are a minority of students within the education system and should not therefore be grossly privileged at the expense of primary school pupils. This is both inequitable and inefficient ...
>
> ...the 1987 Annual Plan and budget will entail the following measures:

(a) a study to be initiated by the University Council to establish ways and means of transferring university costs for boarding and other non-academic expenses to the beneficiaries;

(b) an introduction of fees for university students during the second half of the 1987 annual plan and budget (GRZ 1986, para. 35, 71).

This reordering of expenditure priorities could restore some of the resources taken from primary education. Mingat and Tan (1985) have shown that a 10 percent reduction in student subsides could increase the budgets for primary education in a number of African countries, including Zambia, by an average of 2 percent. In 1985 terms this would have more than doubled the meager provision for teaching materials. Of course, primary education would not benefit unless there was a firm determination to direct toward the primary schools the funds saved at the higher levels. In a time of general financial hardship the danger is that savings will be absorbed by general budgetary requirements, even outside education, and will not be passed on to other areas within the sector.

The Availability of Textbooks and Teaching Materials

We have already noted the disastrous decline in the official allocation for teaching materials at the primary school level. Moreover, the 1985 allocation of K0.63 per pupil was virtually worthless when compared to the cost of educational supplies: enough to buy a pencil and one or two exercise books, but not enough to buy a textbook. In the absence of resources, schools must rely on parents, but apart from the cost, which may be prohibitive for many parents, the necessary items cannot always be found. In remote rural areas, no retail outlets exist from which parents can purchase stationery or other school supplies, and even in urban centers, books and stationery are available only sporadically.

In the absence of data on annual provisions of textbooks and writing materials, which would permit examining the effect of reduced funds and the impact of various aid programs that have sought to supplement local resources, a study into the current situation at some levels in primary and secondary schools was conducted for this report. At the primary level, information was gathered from a random sample of primary schools throughout the country on the following:

- enrollments;
- the number of prescribed textbooks in English and mathematics available at three critical points, grades 1, 4, and 7;
- the availability of teachers' handbooks in English and mathematics;
- the availability of writing implements and exercise books;
- the schools' opinion on the current supply situation compared with the situation five years ago.

Most schools had the prescribed teachers' handbook or guide for the primary school course (table 6.2). The teachers' answer book in mathematics for grade 7 was in short supply, but this book is considered more of a useful supplement than an essential aid.

Table 6.2 Availability of Textbooks in Primary Schools, 1987

Grade	*Teachers' Handbook* *English*	*Mathematics*
Grade 1		
No. of schools having	190	189
No. of schools not having	6	7
Grade 4		
No. of schools having	189	None
No. of schools not having	0	prescribed
Grade 7		
No. of schools having	146	75[a]
No. of schools not having	15	86[a]

Zambia Primary Course Prescribed Pupils' Textbooks

	Schools with one or more textbooks		*Schools with no textbooks*	
Grade	*English*	*Mathematics*	*English*	*Mathematics*
Grade 1				
No. of schools	69	43	127	153
No. of pupils	4,374	2,697	6,523	8,200
No. of textbooks	5,686	2,757	0	0
Grade 4				
No. of schools	148	160	41	29
No. of pupils	7,900	8,811	1,634	723
No. of textbooks	5,014	3,463	0	0
Grade 7				
No. of schools	150	143	11	18
No. of pupils	8,186	7,891	439	734
No. of textbooks	5,313	2,847	0	0

a. Teachers' answer book.

Source: Studies by author.

The position regarding pupils' textbooks stood in stark contrast. In grade 1, 66 percent of the schools did not have a single English textbook, while nearly 80 percent did not have any mathematics books (table 6.2). Those schools that did have textbooks for grade 1 had more books than pupils. Books were distributed more uniformly between schools at grades 4 and 7, although more than 20 percent of the

schools did not have an English reader for grade 4. In the schools that did have books, there were on average three pupils for every two English books, and five for every two mathematics books, though in several schools the situation was far worse than the average.

As far as writing materials are concerned, a significant number of the schools surveyed reported a shortage of pencils and exercise books (table 6.3). Equally serious, only 61 percent of the schools reported that teachers usually had enough chalk for classroom use.

Table 6.3 Availability of Writing Materials in Primary Schools, 1987

Nearly every pupil has a pencil or other writing instrument:				
Grade 1	Yes	122	schools	(65.2%)
	No	65	schools	(34.8%)
Grade 4	Yes	132	schools	(70.6%)
	No	55	schools	(29.4%)
Grade 7	Yes	127	schools	(80.4%)
	No	31	schools	(19.6%)

		English	*Mathematics*
Every pupil has an exercise book:			
Grade 1	Yes	123 schools (65.8%)	132 schools (70.6%)
	No	64 schools (34.2%)	55 schools (29.4%)
Grade 4	Yes	139 schools (74.3%)	146 schools (78.1%)
	No	48 schools (25.7%)	41 schools (21.9%)
Grade 7	Yes	135 schools (85.4%)	137 schools (86.7%)
	No	23 schools (15.6%)	21 schools (13.3%)

Teachers usually have enough chalk for classroom use:			
	Yes	111	schools (60.7%)
	No	72	schools (39.3%)

Source: Studies by author.

Finally, when asked to compare the supply situation today with what it had been five years ago, most heads of both primary and secondary schools agreed that the position was worse today (table 6.4). Heads' views varied more when it came to the chalk situation: almost a quarter of them thought that the supply had improved.

Table 6.4 Changes Perceived by School Heads in the Availability of Instructional Materials Over Time

Number of primary school heads interviewed: 187
Number of secondary school heads interviewed: 72

Compared with the situation five years ago the current situation is:

Item	*Better*		*Worse*		*The same*	
Textbooks						
Primary heads	19	(10.2%)	159	(85.0%)	9	(4.8%)
Secondary heads	3	(4.2%)	63	(87.5%)	6	(8.3%)
Pupils' writing materials						
Primary heads	22	(11.8%)	157	(84.0%)	8	(4.3%)
Secondary heads	4	(5.6%)	59	(81.9%)	9	(12.5%)
Chalk						
Primary heads	41	(21.9%)	100	(53.5%)	46	(24.6%)
Secondary heads	9	(12.5%)	24	(33.3%)	39	(54.2%)

Source: Studies by author.

At the secondary level, information was solicited from all government and aided schools, but of the 190 schools contacted, only 72 submitted complete replies. The information on textbooks and writing materials was requested for grade 8. Textbooks were in most abundant supply for mathematics—approximately one book for every pupil—but the position appeared grave for English, where three pupils had to share a book (table 6.5). There were even fewer science books—just 12 for each class of 42 pupils.

Almost 85 percent of the schools affirmed that their pupils had the necessary number of exercise books for English, mathematics, science, and geography, while 83 percent of the pupils had pencils, 58 percent had rulers, and 28 percent had mathematical instruments (table 6.6). The chalk situation was better than in the primary schools, though 19 percent of the schools stated that teachers usually did not have enough chalk for classroom use.

The study clearly reveals that the supply of teaching materials in schools is in a critical state. Some schools have none of the necessary textbooks, and many of the schools that do have textbooks do not have enough to go around. Writing materials are available, but a significant number of pupils at both the primary and secondary level lack them. Most heads think that the situation today is worse than it was five years ago. Note that the heads gave this opinion in May 1987, when a significant

Table 6.5 Textbook Availability in Grade 8 Classes, 1987

Number of schools:	72
Number of grade 8 classes:	337
Grade 8 enrollment:	14,044
Average class size:	42

	Textbooks Available		
Subject	*No. owned by the school*	*No. owned by pupils*	*Total*
English	4,414	36	4,450
Mathematics	13,398	121	13,519
Science	3,825	221	4,046
Geography	6,688	239	6,927

	Average number of textbooks per class	*Average number of pupils per textbook*
English	13.2	3.2
Mathematics	40.1	1.0
Science	12.0	3.5
Geography	20.6	2.0

	Other books (not textbooks) available	
	No. owned by the school	*No. owned by pupils*
English	1,675	433
Mathematics	1,742	276
Science	853	144
Geography	2,148	266

Source: Studies by author.

number of schools had already experienced the inflow of resources made possible by assistance from the Swedish International Development Authority (SIDA) and the Finnish International Development Agency (FINNIDA). The situation does not seem to have changed greatly from that described at the end of 1983 by a Royal Norwegian Development Authority (NORAD) team that visited primary schools in the Mbala district:

> In many classrooms there are no desks or chairs. In such cases the children are seated on the floor in a row around the walls of the room. Text-books are lacking, teaching materials practically non-existent (Coombe and Lauvas 1984, pp. 134-5).

Table 6.6 Availability of Writing Materials in Grade 8, 1987

Number of schools:	72
Number of grade 8 classes:	337
Grade 8 enrollment	14,044

Item	*No. having this item*	*Percentage having this item*
Pencil	11,684	83.2
Ruler	8,151	58.0
Mathematical instruments	3,895	27.7
Every pupil has an exercise book:		
	Yes	*No*
For English	60 schools	12 schools
For mathematics	62 schools	10 schools
For science	61 schools	11 schools
For geography	62 schools	10 schools
Teachers usually have enough chalk for classroom use:		
	Yes: 58 schools (80.6%)	
	No: 14 schools (19.4%)	

Source: Studies by author.

The Kenneth Kaunda Foundation produces most of the instructional materials for the primary schools. In the past, the foundation operated through two subsidiaries, the National Educational Company of Zambia, which manufactured the materials, and the National Educational Distribution Company of Zambia, which distributed and sold them. But since January 1986 these companies have been replaced by manufacturing and marketing divisions within the foundation.

During 1975, the National Educational Company of Zambia produced only enough books for a book to pupil ratio of 0.6. However, this is a good figure compared to those in the years that followed: in 1976, no books were produced, and figures remained extremely low until 1982, when the situation improved slightly. The extent of the improvement can be judged from the average annual production figures: the average gross annual production was 197,000 books in 1975-78, 148,000 in 1979-81, and 468,000 in 1982-84. This is another example of the U-shaped pattern already noted in other areas of educational provision: a deterioration in the years immediately after the economic decline set in, followed in the early 1980s by an improvement that was steadily maintained.

The improvement in production figures occurred prior to the intervention by FINNIDA, which did not get underway until 1985. But the improvement did not meet the needs, as underscored by the scale of the FINNIDA rescue program, which originally set as its target the reprinting of 4.69 million primary school textbooks, later reduced to 2.0 million (FINNIDA 1984). The shortfall in textbooks affected every primary grade and all teaching subjects, especially English.

One of the reasons why the production of school materials fell far behind the needs was the small allocation of funds for this purpose. During 1980-85, the bills for primary school materials, chalk, exercise books, needlework items, and some secondary school supplies purchased from the Kenneth Kaunda Foundation amounted to K22.46 million, however, the Ministry of Education only paid K16.90 million to the foundation. The total certified expenditure on student requisites during this period was K12.23 million at the primary level, K12.98 million at the secondary level, and K3.38 million at the teacher training college level. If all of this had been used to pay for items from the foundation, there would have been more than enough to meet all the bills that were presented. However, some of the money was used to purchase materials from other suppliers, for example, those providing science equipment, chemicals, and stationery. But even if the total expenditure had been channeled to the foundation, it would have enabled production to be raised by no more than 20 percent. The schools would have fared somewhat better, but because of the rapidly increasing enrollments they would still have remained very short of textbooks and other instructional materials.

The current response to the lack of school materials and to the difficulty in obtaining them even when funds are available is to resort to aid agencies for assistance. Noticing that educational materials constituted the scarcest resource throughout the education and training system, the report of the National Technical Cooperation Assessment and Programming Mission to Zambia advocated some concentration of aid in this direction (UNDP 1986, pp. xxxiii, 144-5). The government has also made known its intention of attaching a high priority to the development of teaching materials and improving their supply:

> In accordance with the educational reform and the Fourth National Development Plan the overall objective of the (education) sector is to improve the quality of education and to increase access to it through:
>
> (i) an increased production, supply and distribution of educational material, the development of a new curriculum to meet the needs of the nation and b conducting inservice education directed towards the new curriculum (GR 1986, para. 45).

The positive contribution that an adequate supply of teaching materials can make to student performance, especially in rural schools and among students from low-income families, has been well documented. The author's study of resources in Zambian schools found a positive correlation between failure in English and lack of textbooks. Thus, any effort to improve the supply of textbooks and writing materials will bring positive benefits in terms of pupil performance. Zambia's neglect of these items in the face of more vocal and powerful demands for salary increases or for student bursaries has had a negative effect on the schools and on the morale of teachers. It is hoped that the new awareness of the importance of these items will lead to an overall improvement in the quality of education.

School Maintenance

The proportion of funds allocated for school maintenance has been declining steadily at all levels and is unevenly distributed across regions. This is one of the reasons why so many schools have fallen into a bad state of repair, although there are a few notable exceptions, especially among the aided secondary schools.

Another reason is that neither school authorities nor the Ministry of Education were directly responsible for maintenance. This task was entrusted to the

Department of Public Works, which was some steps removed from the scene of operations. One of the positive reactions to increased awareness of the way schools have been deteriorating was the transfer of overall responsibility for school maintenance to the Ministry of General Education and Culture, while responsibility at the institutional level was entrusted to school administrators. Another reaction to the crisis in school maintenance has been to focus capital and technical assistance aid, largely from the World Bank and NORAD, on the rehabilitation of secondary schools.

Another reaction is one that is not unexpected in times of financial difficulty: to look elsewhere for the inputs needed to maintain schools. In this instance, this is the immediate community the school serves, and in particular the parent teacher association. The good state of repair that characterizes some of the schools is due in large measure to the funds generated by parent teacher associations and to the labor and services they have provided. An interesting point in this context is the way the weaknesses of overcentralized control are exposed by financial problems, and how the remedy for these weaknesses lies in decentralization.

Notwithstanding the state of physical decay into which many schools have fallen in recent years, educational services continue to be provided. Lessons and evening studies continue in classrooms exposed to the elements, and often with inadequate lighting. Laboratories are in a terrible state of disrepair, with the gas, water, and electric systems needing complete replacement and overhaul in most cases (Imenda and Chibesakunda 1986), but an increasing number of students take science subjects, and performance in some of these subjects has begun to improve at the senior secondary level.

The poor facilities do not deter prospective students. All told, attendance rates are high. Notwithstanding the poverty of the schools and their bad state of repair, parents continue to make great sacrifices to ensure that their children receive a school education. This speaks of a certain robustness in education, which maintains its appeal and performs its functions, however inflexibly and unsatisfactorily, no matter how adverse the physical conditions.

Imbalances in the Financing of Education

Enough has been said to show that there are serious structural imbalances in the financing of education, and that these became more pronounced during the years of economic difficulty. These imbalances are at two principal levels: in the allocation of funds between educational subsectors and in the allocation of funds between functions. Briefly, too much is devoted to the refined needs of too few at the higher level and too little to the general needs of too many at the lower level. In addition, too much goes to personnel and to student subsidies and too little to purposes that are central to education and that cannot be pursued without the injection of resources.

Educational funds are not used according to the best economic considerations, because so large a proportion goes to the subsector that promises a large return to the individual, but only a relatively small proportion goes to the subsector that promises the largest return to society. Neither are they used in an equitable way because too large a share goes to areas where the rich are overrepresented and the poor are underrepresented. Finally, they are not used in an efficient way because only a small fraction is used for inputs that lead to higher levels of student

achievement, while a large fraction is used for such noneducational functions as the subsidy of personal needs.

These educational distortions have not come about by design, but by default. There was no deliberate decision to cut back allocations at the primary level in favor of the university or bursaries; no policy that stated that teachers' salaries were to be allowed to consume so much of the budget; no conscious determination that so little was to be devoted to teaching materials. All of these undesirable consequences occurred by way of unconscious drift, a drift that was virtually uncontrollable in a period of economic crisis.

Moreover, regardless of their concern about the imbalances, the education and finance ministries did not begin with a blank slate, but had to face existing commitments. Salary payments and bursary or boarding costs were regarded as inescapable; there could be no withdrawing from such commitments in midstream. Hence, the ministries were left with very little scope in the form of uncommitted funds to initiate change or improvements in essential financial arrangements. Moreover, the commitments were so exigent that even when funds were insufficient, salaries and boarding could muster resources, either by exceeding authorized budgetary limits or by having supplementary estimates presented in Parliament on their behalf. Classic examples of this occurred in 1982 and 1985, when sums in excess of 10 percent of the authorized budget were spent in meeting the salary costs of teachers. There is no record of anything comparable being allowed in order to provide the materials without which these teachers cannot operate effectively.

Regrettably, the position is that at the time of budgetary submissions, ministries may make a case for retaining a serving officer in the reasonable certainty that the necessary funds will be forthcoming. But when it becomes a question of seeking the funds that will keep that officer effectively and properly employed, there is every likelihood that they will not be made available. A Zambian secondary school headmaster summed up the situation thus: "Trying to teach nowadays is like trying to plough a field without a hoe." His words echoed those of Coombs: "A great many teachers (have been) forced to teach with one arm tied behind them, like a farmer without a hoe or plow" (Coombs 1985, p. 123).

Another aspect of the same matter is that within the public sector as a whole, there is a constant preoccupation with keeping the system going, with no time left to reflect on the implications of keeping everything moving at so unsatisfactory a level. Instead, the sector must rely on external sources for sporadic, *ad hoc* reviews of the system, and for an analysis of what the problems are and where the remedies might lie. One of the major negative impacts of the economic decline has been the way its daily effects so preoccupied decisionmakers that they had little time left for critical analysis of the purpose and operations of the system. This being so, the motivation and the capacity to generate the information and conduct the analyses and synthesis of information needed for policy formulation were lacking. Thus, the educational reform process that had begun late in 1974, and that had been carried along on the crest of earlier economic prosperity and on the expectation that the economic setbacks of 1975 and 1976 would be shortlived, lost much of its vitality after 1977. This was not because of a shortage of educational experts but was due to the fact that these experts were kept so busy in reacting to the day-to-day pressures and shortages that they did not have the time to conduct a continuous ongoing evaluation of the structure, content, management, and financing of the education system. It is one of the signs of educational recovery that such thinking is now going on. If the economic crisis boxed education into a corner from which it could

be freed only by careful self-examination, hard thinking, and courageous decisions, then it has had at least one positive outcome: it is forcing policymakers to establish a clear order of priorities, to appreciate the implications of these priorities, and to see to their translation into practice.

7

Official Development Assistance for Education

Zambia relies heavily on the flow of external aid in the form of loans, grants, technical assistance (or technical cooperation), and commodity support. The aid dependency ratio (volume of aid as a percentage of the GDP) has risen substantially from 10.2 percent in 1977 to 24.9 percent in 1985. This dramatic increase arose from an increase in the total amount of aid during a period when the GDP was virtually stagnant. In relation to the population, the flow of aid has been the equivalent of some US$70 per capita for the years 1980 to 1985, or 12 percent of the average per capita GDP. Over 23 percent of the aid received by Zambia was in the form of technical cooperation during 1980-85. The amount of technical cooperation almost trebled between 1976 and 1979, but apart from an isolated peak in 1982, its value has fallen off, even in current terms, since 1980. This drop represents a return to the real levels of support received by Zambia in the mid-1970s (UNDP 1986).

Aid to Education

Almost all aid to the education sector is in the form of technical assistance, although the World Bank has also provided capital assistance of US$83 million through five loans to education, beginning in 1969. The amount of technical assistance for education has increased since 1976-78, although as a percentage of the donors' total technical assistance to Zambia, it has decreased (table 7.1).

Table 7.1 shows the principal sources of tech. ical assistance for education. Other bilateral donors of importance in the education field include Belgium, Canada, Denmark, France, Ireland, Japan, and the USSR. Multilateral donors include the EEC, the World Bank, the UNDP, and various other members of the United Nations system. The multilateral donors have increased aid to education, while the bilaterals have generally reduced the level of aid.

As might be expected with technical assistance, most of the aid flow for education tends to be used on personnel, principally for the university, secondary schools, technical institutions, and teachers colleges (table 7.2). In some years, however, grants received under certain bilateral arrangements, notably from Sweden and Japan, for specific building projects raised the proportion for construction and building.

Table 7.1 Technical Assistance for Education, 1976-84

	In US$ '000s			*As percentage of donor's total technical assistance to Zambia*		
Donor	*1976-78*	*1979-81*	*1982-84*	*1976-78*	*1979-81*	*1982-84*
Finland	1,530	2,654	2,144	22	15	14
Federal Republic of Germany	141	0	n.a.	4	0	n.a.
Netherlands	1,493	0	46	18	0	1
Norway	5,489	1,182	14,784	59	6	31
Sweden	4,083	4,092	10,281	15	9	18
United Kingdom	5,167	27,698	15,179	37	44	64
United States	1,000	0	0	100	0	0
Other bilateral donors	4,129	12,557	4,999	23	27	8
Total	23,482	48,194	47,403	26	19	21
UNDP	96	94	0	1	1	0
Other U.N. organizations	25	1,138	567	...	7	5
Other multilateral donors	502	1,305	2,125	5	6	26
Total	623	2,537	2,692	2	5	9
Total technical assistance	24,105	50,731	50,095			

n.a. = not available

... = less than 1 percent

Source: UNDP (1986, table A.10).

In recent years, technical assistance has shifted toward the provision of materials and equipment. In 1977, such items were included only under the rubric of support for technical cooperation staff, but merited no independent mention of their own. By 1979, some donors were making specific provision for educational materials without relation to staff provision. The number of donors doing so and the amounts involved increased substantially up to 1984, but declined in 1985, when equipment was once again associated much more strongly with the provision of staff. Nevertheless, since 1982, well over a quarter of technical cooperation disbursements included a component for the supply of educational equipment and materials.

Although there are annual fluctuations in the educational subsectors that receive technical assistance, the major recipients are the university and the secondary schools (table 7.2). The position of the secondary schools would be clearer if the sources had provided figures for United Kingdom aid in 1977 and 1983, since a very large proportion of this aid is in the form of secondary school teachers (for instance, in 1979 three-quarters of the disbursement of US$6.5 million was for this purpose). The support for technical education shows a marked decline, while aid for primary education has increased, although this latter is somewhat masked because of the lack of data for 1982 and 1985. The university has always had the largest number of donors, with almost all the bilateral agencies contributing in some way to its support.

Table 7.2 Technical Assistance to Education in Zambia by Function and Subsector, Selected Years
(percent)

Function	*1977*	*1979*	*1980*	*1982*	*1983*	*1984*	*1985*
Staffing	41.9	75.6	73.8	65.9	11.4	28.5	59.5
Staffing & Equipment	18.3	14.1	22.9	22.1	17.6	14.9	23.5
Equipment	0	0.7	0.6	7.6	11.7	14.2	2.5
Training	0.3	6.0	2.4	2.6	3.1	4.8	4.8
Research	0	0	0.3	0.4	0.2	0.1	0
Construction and building	38.7	2.8	0.1	1.4	56.0	37.5	9.7
Other	0.8	0.7	0	0	0	0	0
Subsector	*1977*	*1979*	*1980*	*1982*	*1983*	*1984*	*1985*
University	27.1	14.2	22.1	22.0	67.9	56.7	23.5
Technical education	31.1	10.7	12.7	22.8	3.1	2.7	8.7
Teacher training	9.1	5.2	3.9	19.9	4.8	5.2	9.9
Secondary schools	7.5	48.6	45.8	19.3	2.3	8.4	30.9
Primary schools	0	0	8.3	0	11.0	18.4	0.3
Special education	0.1	0.4	0.4	3.7	2.6	2.6	1.9
Project Unit	20.3	2.8	0	0	4.2	0	9.3
Headquarters	4.8	18.1	6.8	12.3	4.1	6.0	15.5

Notes: In the top panel, the source material did not always split staffing and equipment into separate items, hence the three rows covering these items. Data were not available for 1978 and 1981. The Project Unit in the second panel is the Zambia Educational Projects Implementation Unit discussed later in the chapter.

Source: UNDP *Annual Report on Development Cooperation with Zambia* (annual issues, 1977, 1979, 1980, 1982-85).

Aid and the Establishment of Priorities

The evolution of the aid program for education in Zambia reflects both the historical circumstances attending the development of education in general and the country's economic circumstances. At the time of independence, trained manpower was in very short supply, and the formal education system was seriously deficient, especially at the secondary and tertiary levels (chapter 2). At the same time, however, financial resources were relatively abundant.

Hence, the first need for assistance from abroad was for personnel to staff the educational institutions and for training opportunities for Zambians in fields where local facilities were inadequate or nonexistent. This need was met in large measure by technical assistance, which helped to staff the secondary schools and the university and provided fellowships for study abroad. In the late 1960s, the stress shifted subtly to technical education, and this sector was developed during the early 1970s with the help of capital and technical assistance from abroad. At the

same time, the development of secondary schools and the growth of the university received attention, principally with the help of World Bank credits. The staffing of the university, of the secondary schools, and the teacher training colleges, as well as back-up services in various professional sectors of the Ministry of Education, continued to absorb a considerable amount of the aid available, but for a period much of it was also devoted to technical education.

With the drying up of local resources in the mid-1970s, the government had to rely more on external donors to finance capital projects in education. While some aid was forthcoming for this purpose, the major donors were more interested in the maintenance and rehabilitation of existing facilities than in the provision of new ones that the economy would be hard pressed to run and maintain. The tight financial position of recent years has led to increased requests to donor agencies to underwrite what are essentially the recurrent costs of the education system: partly through the provision of funded staff; partly through the provision of equipment, furnishings, materials, transport, and (most recently) security services to support the activities of such staff; and partly through the provision of similar items to support the activities of local personnel. As a result, the aid program to education today is more diverse than in the past, and at the same time it is more complex to administer because of the increasing number of donors and an increase in the number and type of components involved.

This diversification of aid creates two major problems: how to establish priorities for technical cooperation undertakings, and how to coordinate and manage the total aid program for education. One of the Ministry of Education's most important and difficult tasks is establishing priorities and then taking the appropriate action. Two influences, both a result of the financial crisis, have contributed to the difficulty of this task. First, the ministry has not been able to maintain a strong planning and research unit that can analyze the situation in Zambia and produce imaginative proposals. The problem is not a lack of local manpower capable of undertaking such tasks, but a lack of finances that has not allowed the ministry to preserve and develop its own research and investigative capacities. In this, education contrasts unfavorably with agriculture, which has a well-developed research wing. Thus, the ministry is often able to do little more than react to donors' proposals. It does not have the capacity to scrutinize these proposals adequately or to come up with well-researched projects of its own. According to King:

> So long as the local evaluation of education and education aid is reactive to other people's analyses of the problems, the dialogue will continue to be about someone else's priorities for the country . . . there are few donors who would not welcome the strengthening of the recipient capacity to set priorities, or to argue powerfully for counterpriorities to those proposed by donors (King 1986, p. 133).

Second is the tendency, when virtually all available resources are tied to inescapable salary payments, to accord a higher priority than they deserve to proposals that seem likely to attract additional funds, particularly if these will support ongoing activities. This leads to the aberrant situation where a ministry espouses a donor's priorities as its priorities. In Zambia, as in other hard-pressed countries, items are entered in national development plans because the government believes that donors will consider them favorably and not because of their intrinsic merit. Also, offers of aid are rarely declined on the grounds that they do not accord with national priorities.

The Management of Aid to Education

The number of donors and aided projects has become so large that managing them strains the Ministry of Education's already limited resources. Different donors have their own information needs. Some may collect it themselves, others may seek it directly from the ministry, but in each case, the ministry, usually its planning section, will be pressured to provide data. The poor information base makes this a difficult and time consuming task.

Managing actual projects has its own problems. The number of projects has increased, but because of problems of communication, transport, supplies, and the general dearth of local resources, they have become more difficult to manage. The growth of economic and budgetary problems in the donor countries has, understandably, meant a greater emphasis on accountability for resources used, and hence on detailed project preparation, evaluation, and reporting. In consequence, managing aid activities requires more time, personnel, expertise, and back-up resources, and greater understanding of donor agencies' characteristics, educational philosophy, and requirements. All of this is difficult at any time, but almost impossible in a period of economic stringency, when the pressure is to reduce personnel and material resources, not to increase them.

Some progress has been made in that the Ministry of Higher Education and the university have each established separate offices to deal with aid matters. Within the Ministry of General Education and Culture, the Zambia Educational Projects Implementation Unit now manages and executes projects funded by the World Bank and the African Development Bank. This unit, which depends heavily on technical cooperation from Norway for its architectural, engineering, and professional staff, is also concerned with the rehabilitation and maintenance of the secondary schools. But it is the hard-pressed planning section within the Ministry of General Education and Culture that must coordinate, manage, and provide information for all the other aid projects. This is such a burden that the section has little capacity left to devote to educational planning.

The burden on the planning section would have been eased had the Zambian government established a single office to coordinate all forms of educational aid and to be responsible for dealing with all the donor agencies, meeting their information requirements, and conducting evaluations. The agencies too could have eased the burden by consolidating or coordinating their requirements, approaches, information needs, and reporting procedures. The Windsor Conference of 1984, which major bilateral and multilateral donor agencies attended, recognized the problem created for officials who are "called upon to produce virtually the same voluminous sets of information for different agencies, though in different formats and with different emphases," and believed that the case for proposing more harmonization of data requirements and standardization of documentation and reporting procedures was strong (ODA-ULIE 1986, p. 61).

The belief is emerging that external agencies could more usefully direct their aid resources away from traditional projects and toward broader program support that would strengthen a country's capacity on a wide front through developing its infrastructure and institutional capabilities (Coombs 1985, p. 308). However, the development of aid programs in Zambia in response to the economic crisis may be placing such burdens on the limited number of staff available that it is obstructing the emergence within the ministry of the capacity that is so desirable.

The Impact of Aid to Education

What has the input of aid resources accomplished for education in Zambia and for the people of the country? What has it failed to accomplish? Where, if anywhere, has it hindered the achievement of desirable goals? These questions can only be answered within a sufficiently long time framework and bearing in mind the difficulties of evaluating the impact of aid and other projects. In particular:

> There is still no satisfactory methodology for assessing the impact of aid on the economy of an entire country, or even an entire sector . . . (and) there is a need for ways of assessing the impact of forms of aid which do not yield a discrete, measurable return, especially technical cooperation (OECD 1985, p. 259).

What follows, therefore, is largely an impressionistic evaluation of the impact of development assistance on Zambia's education sector since independence.

Twenty years ago, Zambia had a tiny secondary school system, a handful of colleges that prepared low-level primary school teachers, a nascent university, no training facilities for secondary school teachers, and a very rudimentary technical training subsector. All these areas have been considerably developed in the years since, and Zambia has met its need for high-level manpower in many critical areas. In addition, much development has taken place in the design of curricula and teaching materials, in the administration and processing of examinations, and in the production of educational books and literature.

During a period of phenomenally rapid expansion, the secondary schools, for all their deficiencies, were reasonably well staffed, especially in the crucial areas of English, mathematics, and science. At the university, courses for training professionals were strongly supported even during the years of financial difficulty. Moreover, a highly desirable continuity was established in certain critically important areas where technical cooperation staff had been in place for many years. In addition, through the support of donors, many Zambians received training abroad in a variety of disciplines. Many of these Zambians have now, in the best traditions of aid relationships, replaced their former mentors or have taken over the responsibilities of expatriates. They are working in physical structures provided in every education sector by technical assistance and capital aid from abroad, and for many of their activities use equipment and apparatus provided by donor agencies. Personnel and students in schools and institutions throughout the country use supplies and materials that have come as part of technical cooperation arrangements. Education has reached out, more and more, to the rural poor, to shanty town dwellers, to girls, and to the handicapped.

It would not be true to say that none of this could have been accomplished in the absence of aid, but it would be equally incorrect not to recognize the significant contribution that aid has made to the realization of Zambia's aspirations to provide all its children with a good education. Zambia has not yet attained this ultimate goal, and the pressure of current financial problems makes it seem still very remote, but with the help of international donor agencies, Zambia has made progress. Writing of the altered climate of educational cooperation on a worldwide basis, Coombs spoke of the decline of the "animating spirit of hope, enthusiasm, adventure and friendship that had marked the earlier period" (1985, p. 287). It is not so in Zambia. The international cooperation in education has accomplished a great deal and appears set to accomplish even more.

Criticisms of Aid to Education

Ł criticisms may also be leveled at various aspects of aid, whether of a particular project or the very nature of the cooperative relationship. Criticisms of the latter variety (UNDP 1986, p. 40) fall into two categories: those that argue that technical assistance of itself promotes the dependency that it is meant to reduce, and those that argue that technical assistance is inherently ineffective. The criticisms of aid proffered to Zambia can be considered in terms of the dependency that it unintentionally fosters, the separation between aided projects and local structures, and the economic efficiency of projects.

Aid and Dependency in Education

Perhaps the most serious criticism that can be leveled against the technical assistance available to education in Zambia is that it has unwittingly reinforced the import mentality. Ironically the economy's import-dependent structure is mirrored in a strongly import-dominated approach to education. To be good, the implied argument goes, an educational input should have an element imported from abroad, whether that input is a teacher, a book, an item of equipment, a qualification, a plan of the school day, or a curriculum. This attitude had led to higher prestige for schools and departments with expatriate members of staff; to higher value being placed on foreign rather than local qualifications; to undue concern with international standards (which mean in effect the standards of the former colonial authorities); to heavy investment in education abroad while similar financial inputs or foreign exchange are not available to meet pressing needs at home; and to a continued hankering for the reintroduction of sixth form studies.

Technical cooperation may have hindered progress toward educational self-reliance in two areas (UNDP 1986): the relatively easy availability of expatriate teachers of mathematics and science may have hindered the development of programs for the upgrading of lower level Zambian teachers of these subjects, and the availability of overseas scholarships may have lessened the urgency to develop upgrading programs for mid-level technical personnel.

Another area is the sluggish development of postgraduate programs at the university. The university started operations at a very high level, with a postgraduate certificate in education that was originally awarded via a relationship with the University of London, but after a short time became the university's own award. After this program closed in 1972 a decline occurred in postgraduate work, to the extent that there were fewer postgraduate awards in the whole period 1975-87 than in the first five years of the university's existence. This decline was largely due to the easy access to postgraduate studies in universities in the aid-providing countries and to the departure of the cream of potential candidates to pursue these studies. Major efforts will be needed to remedy the effects of years of neglect of postgraduate work at the university, among them a clear government policy to support such studies locally rather than abroad. The university will need to channel more of its limited resources in this direction, possibly by tighter controls on the numbers of undergraduates in the humanities and social sciences. For their part, the donor agencies will need to recognize that their resources can be used better if they tie the training components to in-country programs in all but the most exceptional cases.

Equal determination will be needed for training at other levels. At the university, pressure would likely have been exerted to diversify programs in the School of Education away from the single-minded concentration on training secondary school teachers if access to a variety of programs abroad had not been so easy. Obviously everything could not have been provided in Lusaka, but a more diversified program aimed at catering to the varied needs of a multifaceted ministry could have been set in place. Returning to the earlier observation on the easy availability of expatriate mathematics and science teachers, this situation probably diverted attention from the sad fact that the university actually retrained—and continues to do so—a substantial number of science teachers in the humanities because they did not meet the formal entry requirements for science programs, including the B.Sc. with Education. It may be that such anomalies are only perceived with hindsight, but once perceived they should be remedied.

Separation of Aided Projects from Local Structures

A further area where projects, educational and other, may work against development is in their relative isolation from the harsh economic realities into which they are supposedly inserted.

> To ensure a high quality project . . . there is a temptation to insulate the aid project against failure by a series of coordinated inputs, including very close supervision, project-related training and often some kind of special status, through interministerial committees, incentives for participating schools and so on (King 1986, p. 124).

King's concern was that projects of this nature were doomed to collapse when external support was withdrawn or when they were translated into the wider context of educational endeavor. The concern here is that by becoming islands of perfection in a sea of mediocrity, such isolated projects do not have the developmental impact they are capable of, do not prove that they can address the real situation in the institution or country, promote a continued need for the inflow of aid, condition participants to believe that local structures and administration are irrelevant, and may generate resentment and hostility among colleagues not participating in the project.

The smooth integration of a project activity into the life of an institution is a slow and difficult process. This process may be made more difficult by the nature of specific projects, whose team managers' or leaders' loyalties may be divided between the institution where they are based, the agency that is providing the funding, and possibly their home institution. The special status of the project and its members; their privileged status and ease of access to scarce supplies, transport, accommodation, and services; and their direct access to high-level decisionmakers all combine to make the project a foreign body within the host. It then remains a matter of concern and uncertainty whether the host will reject this foreign body or be strengthened by assimilating it.

More clear-cut local involvement in the choice, design, and management of projects would help to solve some of these difficulties, as would a decision to place the project under local administrative control, with severely limited access either to senior local level administrators or to agency sources. In the final analysis, much depends on the quality of the staff themselves. If others perceive them to be well motivated, suitably qualified, competent, and somewhat more productive than their nonproject colleagues, their involvement will bring lasting returns.

Problems of a different kind attend the counterpart arrangement that is often an integral component of educational and other projects. (A counterpart arrangement is when a local person is designated to understudy a foreign technical cooperant with a view to assuming eventual responsibility for the cooperant's functions.) In their survey of technical cooperation personnel and their Zambian counterparts, Hopkins and Siamwiza (1987) concluded that the current expert-counterpart system is a viable method for the transfer of know-how and technology, but that it suffers from a lack of proper assessment of the training requirements of counterparts and the training abilities of experts. The transfer of skills and knowledge from visiting expert to local counterpart has always been viewed as an important component of the technical cooperation arrangement (OECD 1985, p. 189). Yet Hopkins and Siamwiza judged that this was actually the weakest element. The majority of expatriate respondents in their sample spent less than 10 percent of their time on any form of counterpart training, and a significantly large number did not attend to this at all.

There is probably less room in an actual classroom teaching situation than in other kinds of occupation for counterpart training. To a large extent technical cooperants or supplemented individuals are filling vacancies until suitably qualified and experienced local staff can replace them, and generally in the educational world, these replacements will need academic and professional qualifications through specialized preservice training. Hence, counterpart training or transfer of technology may have less place in educational aid than in other areas. Nevertheless, if more were expected of the experts than that they should merely fill vacant posts, then their local colleagues might be less aggrieved at the extreme differences in salaries. For this kind of institution building approach to be effective, all concerned must have clear and attainable expectations and progress toward meeting them must be monitored.

The Economic Efficiency of Aid

Only a very small percentage of the financial commitment in technical cooperation projects actually reaches Zambia. This is particularly true of education projects. Though writing in a somewhat different context, Coombs put the problem well: "The monetary value of educational assistance often looks substantially larger from the vantage point of the sending country and agency than from that of the recipient" (Coombs 1985, p. 291).

Foreign experts are extremely expensive. No firm figures are available for the current costs, but the UNDP (1985) *Report on Development Cooperation with Zambia* suggests that the cost of a fully-funded expert for an aid project at that time was US$40,000 to US$80,000 per year, while a supplemented post entailed a commitment of some US$25,000. We can look at these costs in various ways. One is their opportunity cost, the inputs these funds might have purchased if they had not been committed to this particular item of technical cooperation. The aid negotiation process may fail to examine sufficiently closely the possibility of putting funds to other uses. Some donors may not allow the possibility of tradeoffs, but even when they do not, the cost of experts should be clear to all parties.

From another perspective, aid may not give good value for money, since the large sums spent on technical cooperation could be used more cost-effectively within Zambia. The current ceiling for a professor's salary at the University of Zambia is K34,500 per year, or rather less than US$4,500. This is low by standards elsewhere and is insufficient to retain the services of some of the best Zambian

staff. It is also too low to attract good candidates from abroad, though some would come if the university could top up its salaries with more attractive inducements. A case could be made that aid resources would be used more effectively if some of them were placed directly into the government's hands to finance the recruitment of staff from abroad or to enable the country to retain its own staff. Likewise, fellowships abroad cost in the region of US$20-25 a day in living and maintenance costs, without counting academic fees and transportation costs. Since local costs would be about one-tenth of these, a strong case can be made for a greater proportion of aid funds to be used for in-country training.

Future Priorities for Aid to Education

This review is concerned principally with the past performance of Zambia's education sector. Nevertheless, concluding this chapter with some reflections on areas to which external aid could most usefully be targeted during the coming years seems appropriate. Five are singled out for attention: primary education, girls' education, mathematics and science, higher education, and the research and information base within the education ministries.

Aid for Primary Education

Most experts agree that primary education, or more broadly speaking, basic education in its widest sense, should have a very high priority in the education sector. Although there has been no official government reaction to the *Educational Reform Implementation Project's* recommendation (Kelly and others 1986) that all other educational objectives must remain subordinate to the quantitative and qualitative development of the primary schools, this recommendation has appeared in official government publications and has been used as a guiding principle at training seminars for senior education officials. The donor agencies generally also accept this priority, which has been given succinct expression by Sweden:

> The Swedish contribution within the Education Sector Support Programme should continue to be used for improving educational standards, particularly as regards primary education and the educational needs of the rural population (SIDA-GRZ 1983, p. 1).

Nevertheless, "most external agencies (have) steered clear of elementary education (because) they regarded it as a bottomless pit, best left to the developing countries to deal with on their own...and because these agencies and many leaders in developing countries believed that the greatest immediate need was to strengthen the supply of high-level manpower" (Coombs 1985, p. 289). The result is that external agencies are minimally involved in primary education, especially in the rural areas (King 1986, p. 125). However, these agencies are beginning to recognize that primary education should be given higher priority (Colclough, Lewin, and Oxenham 1985). This could be accelerated in Zambia if clear operational priorities existed for the way aid could be directed to this sector. The following areas deserve special attention:

- *The direct provision of educational materials and stimulation of local production,* with particular emphasis on the primary school and primary teacher training levels. The activities of FINNIDA, SIDA, the British Council, and the UNDP are steps in the right direction, but these moves need to be supplemented by initiatives from other agencies; local industry should be

involved, and local communities must systematically generate funds to contribute toward the cost of such materials. Such efforts must be coordinated and the extent of existing resources and the nature of the shortfalls must be thoroughly assessed (see UNDP 1986, p. 144).

- *Support for the training of more and better primary school teachers.* The production of more primary teachers would require capital investment to expand existing colleges and develop new ones. Improving the quality of the newly-trained teacher would require supporting the development of teaching materials; promoting the professional development of college staff; and helping the colleges to reorganize their teaching methodology and general curriculum so that they foster more flexible teaching methods designed to stimulate more self-reliant, investigative, and creative learning skills.
- *Efforts to boost the morale of teachers in the field*, principally by supporting their efforts at professional advancement, ensuring that they have what they need for the proper discharge of their teaching duties, and enabling ministry personnel to give them the supervisory, administrative, and financial support they require.
- *Strengthening the professional leadership and management abilities of primary school heads*, through local and national training programs, various opportunities for professional development, stimulation of professional interaction (for example, via a head teachers' newsletter), adequate supervision and support, and enhancement of career opportunities and of professional attitude to primary education as a career.
- *The reform of examinations, and thus of the curriculum*, so that teaching at the primary level will foster the necessary skills and knowledge that belong to this as a terminal level of formal education. External aid could help to redesign the content and method of examinations so that they assess the skills and knowledge that are likely to be useful to pupils who must terminate their education at the end of primary school; to establish a comprehensive feedback system that would provide schools with information on their strengths and weaknesses; and to develop attainment tests in various areas of the primary school curriculum (possibly through participation in the activities of the International Association for the Evaluation of Educational Achievement).

The purpose of much of the foregoing would be to enable schools to do what they are supposed to be doing better and to make what they are doing more worthwhile in terms of the primary school-leaver's subsequent life and activities. Developments of the kind proposed would directly affect the formal school system, but the government should also "consider the potential for developing new forms of education. These may involve new types of formal schooling in terms of their institutional structures, or other types better described as 'informal' for their lack of attributes of the formal mode of schooling" (Clarke and Kaluba 1987, p. 134).

Informal education is probably more likely to be a bottomless pit than primary schooling, but this is no reason for donor agencies to eschew it. Clarke and Kaluba (1987) speak about programs that emphasize meeting the felt educational needs of disadvantaged members of the community, such as primary school-leavers or the heads of female-headed households. Such programs might address areas such as farm management, household bookkeeping, income-generating skills, obtaining credit, cooperative organization, and so forth. Support to local efforts to devise or implement such programs would be well worthwhile and would fall within the priority accorded to basic education in its widest sense. Since such efforts

frequently originate with voluntary bodies and religious organizations, donor agencies should be prepared to channel some of their aid through such bodies. The June 1986 meeting between the Development Assistance Committee of the OECD and the nongovernmental organizations has paved the way for closer collaboration and involvement of this sort (OECD 1987, p. 21).

Aid for the Education of Girls

A second broad area that should be a priority for donor response is the education of girls and women. Girls are not participating in the education system, particularly at the higher levels, in the numbers they should; those who do participate are not performing as they should; and the general educational level of women is considerably below that of men. Positive interventions are needed to rectify this situation, but what form these interventions should take is not yet clear. External aid could help by supporting investigations to discover the real economic, social, and institutional factors that underlie the situation. The advancement of girls' education generally needs to be given more attention when designing educational projects.

Aid for Mathematics and Science Education

The aid community has responded to what is undoubtedly a crisis in mathematics and science education by a number of initiatives:

- the United Nations Financing System for Science and Technology for Development (UNFSSTD) by supporting the preuniversity science program and the upgrading program at the university for secondary school teachers;
- FINNIDA by helping to produce Zambian textbooks in mathematics and science;
- the EEC by providing special consultants in the Curriculum Development Centre and by instituting an ambitious program for upgrading science and mathematics teachers;
- the United Kingdom by distributing mathematics and science textbooks to senior secondary schools and by its policy of devoting an increasing proportion of its technical cooperation resources to providing secondary school teachers of mathematics and science;
- UNESCO by its project to establish a production center in Lusaka for science and mathematics equipment; the Canadian International Development Agency (CIDA) through its project to improve mathematics and science teaching in the primary schools.

All of these initiatives are welcome. However, the danger is that a somewhat piecemeal approach could result in a duplication of effort and in omitting some important areas. In addition, all the efforts except CIDA's are directed toward the secondary level where, in one sense, they are remedial. The difficulties with mathematics and science education have long roots and stretch back into primary schools, and thence into the teacher training colleges. Radical improvements are needed in the staffing of these colleges and in the methodologies that they follow if significant improvements are to be effected. External aid could well support studies on the impact of the current teaching methodology on children's learning of mathematics and science. Such studies could establish whether the language of

instruction is in any way related to the difficulty children have in assimilating mathematical concepts and following computational procedures. Aid could also provide more extensively for the staff development needs of the mathematics and science instructors in the teacher training colleges.

At the secondary level, programs such as that of the United Kingdom, which involve staff placement in secondary schools throughout the country, might consider adding a training function to such posts. This would require the incumbents to participate in workshops to improve the skills of lower level secondary school teachers of mathematics and science or of primary teachers from local schools. External assistance could also support feasibility studies into developing certain secondary schools in each region into specialized science education schools and might finance such a transformation. A study is also required into the need for a special college offering a one-year intensive program in mathematics and science for school-leavers who fail marginally to qualify for admission to science and technological programs at the tertiary level. The objective is to help Zambia raise its standards in science and mathematics education, and thereby achieve that bias toward science and technology education that the country has set out as one of the main aims of educational development for the decade 1985-95 (United National Independence Party 1985).

Aid for Higher Education

In higher education the needs are to rationalize the financing of the system, to enable it to develop its research functions, and to foster the development of postgraduate work. The aid community has considerable scope for promoting these aims by making maximum use of in-country training for its fellowship awards and by turning in the first instance to Zambian personnel for its research and consultancy needs. However, such activities would have to be coordinated so that the research bodies could integrate the agencies' needs into their own programs without generating a patchwork of *ad hoc* projects undertaken in response to external requests.

Rationalizing the financing of the higher education system implies transferring some of the costs to the users. It also implies that the institutions should be able to generate revenues through their own activities, thereby reducing their almost total dependence on the government. Such moves need careful study. There are lessons to be learned from institutions abroad that raise a large proportion of their own revenues, whether through fees or commercial activities. External assistance might help here by supporting study visits and facilitating feasibility studies.

Aid for the Development of a Research and Information Base

Good, comprehensive educational information is at a premium in Zambia. Despite the existence of an Educational Research Bureau at the university and of a Development and Planning Unit at the Ministry of General Education and Culture, information about the pedagogical, social, economic, and statistical aspects of the education system is sparse. Much of it is out of date, little is coordinated, and most is scattered among various bodies and agencies. Far-reaching decisions are taken on insufficient evidence, and sometimes research into a problem is undertaken after the decision has been made, partly to justify it.

Under these conditions, the groundwork cannot be laid for negotiating with the aid agencies or for developing constructive educational policies.

The problem is not the lack of personnel, but that in a time of financial difficulties, the education ministries' research, investigative, and information needs are considered somewhat of a luxury, or at best as needs that a number of uncoordinated units can respond to. This dissipation of functions leads to faulty decisionmaking, communication breakdowns and bottlenecks, and consequently to inefficiency. This situation also holds true for the university and its departments. External aid could help the planning units in the education ministries and at the university devise and maintain the data base required for day to day management and forward planning. The Swedish International Development Authority (SIDA) is already doing this to some extent at the Ministry of General Education and Culture, but assistance targeted more specifically toward the development of the institution's own "research and planning culture" (King 1986, p. 133) is still needed. Coombs emphasized this point:

> The prime candidate in the developing world of those things that promise high returns at little extra cost is improvement in statistical reporting and analytical systems, so that ministries of education and political leaders and the general public can actually know the nature and extent of existing inequalities and whether they are being ameliorated. This is also ... a feasible and productive matter in which external agencies can be of practical help (Coombs 1985, p. 223).

8

Nongovernment Resources for Financing Education

With the decline in resources available from the central government, recourse to other sources for the funds and personnel needed for all aspects of the education system has proved increasingly necessary. This takes various forms (figure 5.1):

- resorting to parents;
- asking communities to provide their own schools;
- introducing schemes whereby educational institutions can generate their own funds;
- encouraging entrepreneurs and others to develop private schools, especially at those levels that the government finds most expensive;
- appealing to voluntary agencies to participate more in the establishment and management of schools;
- turning increasingly to official development assistance for technical cooperation and general budgetary support (see chapter 7).

Zambia's recourse to these sources is not new. What is new is the extent of the reliance that is being placed on them and the way policy and administration have adapted to promote such increased reliance.

Parental Payments

Parents have always been required to pay an annual school fund fee of K1 for each child at the primary level and K2 at the secondary. This fund is intended to support some of the schools' extracurricular activities. Given the purchasing power of money and the availability of goods in 1966, when the rate was established, the fund was of some benefit to schools. Today, its purchasing power is so low and items are in such short supply that the fund's contribution is minimal. To compensate for the loss, parents are required to contribute to several other funds, for example, funds determined by the parent teacher association to meet maintenance or development costs, transport funds, and entertainment funds. Moreover, since the 1970s they have been required to pay examination fees for the school certificate examination.

In principle, free education includes the provision of the necessary learning materials. Today, because of the government's lack of funds, parents must themselves provide their children with textbooks, exercise books, and writing

implements. The necessary items are not always available in retail outlets, but even when they are available, the cost may be high compared to parents' incomes. A survey conducted in 1985 showed that the parents of primary school children were paying an average of K20 a year for learning materials and K12 for school funds while at the secondary level they were paying K54 for learning materials and K41 for school funds (Kelly and others 1986, table 32).

In 1985, per capita income was K737, but since 60 percent of the poorest have only 19 percent of the income (ILO/JASPA 1981), the per capita income of most households was considerably less than K250; their actual cash income may not have been more than a few kwacha a year. Hence, paying for school items is a considerable burden for most families, especially when they have to pay for more than one child. But school education is valued so highly that most parents are prepared to make great financial sacrifices by paying for essential learning materials. The government has welcomed this positive attitude of parents (Ministry of Education 1977), but it has not recognized that many families are so destitute that they cannot afford to purchase school items. Households in shanty townships and undeveloped rural areas are the worst affected, but apart from help from Sweden and Finland toward exercise books and textbooks nothing has been done to relieve them of this financial burden. The government's desire to hand over some educational costs to the consumer is legitimate, but the government must ensure that its decisions do not impose such a burden on the poorer members of society that they would respond by not sending their children to school.

The most substantial move toward transferring educational costs to the private sector was taken in 1986 with the reintroduction of boarding fees. The announcement of this decision was received with much concern and, in certain quarters, with open and at times violent hostility. At first the fee payable by secondary school boarders was set at K504 a year, but in response to public pressure, the government reduced this to K100 a term. The Ministry of Education established this fee as a flat rate for all schools in the country, irrespective of distance from source of supply or local availability of essential foodstuffs. Even at the relatively high level at which it was established, the fee was insufficient to cover all boarding costs so the government had to continue subsidizing boarding costs in secondary schools. In addition, the government established a bursary scheme for promising students whose families could not afford to pay the fees. Despite the opposition at the time of its announcement, the boarding fee decision has been implemented, apparently without inflicting hardship. The logical sequel to this move is the transfer of university students' bursary costs through a loan or similar scheme, a process that has already been put in motion.

Self-Help Activities

Local communities have always been required to make at least some contribution to the infrastructure for the most basic level of education. Their efforts supplemented government resources. But with the worsening economic situation, the government's contribution to self-help schemes began to decline, and ended with the adoption of the policy that: "Each self-help project should be the responsibility of the community, through to completion" (Ministry of Education 1977, p. 83). The Third National Development Plan incorporated the same idea when it stated that: "Self-help educational projects by communities will be encouraged and once initiated such projects will be executed to completion" (GRZ 1979, p. 343).

At first self-help provision was limited to the primary level, but restrictions on the development of additional facilities for secondary education, coupled with a desire to maximize the use of facilities and to provide nine years of basic education for all, changed this. At the beginning of the 1980s, self-help was used to convert unused boarding facilities at primary schools into classrooms for grades 8 and 9 and to construct additional classrooms for the same purpose. The result was that self-help basic education schools mushroomed, from a total of 7 in 1982 to 122 by early 1987.

At the time the government announces secondary selection results, it informs the public of the number of additional secondary places that have been created in each region on a self-help basis. This intensifies the pressure to undertake even more of these ventures. Some capital provision continues to be made for the improvement of primary schools, but the construction of additional facilities at the primary level is now more the responsibility of the local community than it was a decade ago.

Production Activities

When productive work was introduced into the curricula of all educational institutions 12 years ago, the government first proposed that the educational and economic objectives should be of equal importance. However, resounding public opposition expressed during the national debate on the educational reforms caused the government to reconsider and declare educational objectives to be paramount, but in the event, the economic objective of raising revenues has prevailed over the educational.

Almost every public utterance on this matter and every account that a school gives of its activities judges the success of production work by the volume of goods produced or amount of money made. However, taking account of the amount of teacher and pupil time that goes into production activities, the financial return is very small. Thus, as presently organized, production activities are a very inefficient way of raising revenues. There appears to be a growing awareness of this. At the same time, interest is growing in the institutions where production has been financially successful, while there is a groundswell of opinion that there is a need to integrate production into the school curriculum more harmoniously, and possibly even to organize the curriculum around production (Shanks 1983).

The first decade has clearly been one of trial and error, with too much reliance on participants' goodwill and not enough analysis of the pedagogic and organizational implications of including production in the curriculum, as well as insufficient definition of the inputs needed if production is to make a worthwhile financial contribution. Major changes will be needed to bring this about, but these may have to be so radical that they would require socially and educationally unacceptable transformations of all that goes on in schools. In the absence of such changes, educational institutions will flounder along, generously but blindly trying to implement directives. Faced with such a dilemma, the government should question the whole rationale for production as a curriculum activity and consider abandoning it entirely.

Private Schools

At the time of independence, private schools in Zambia fell into two categories: institutions catering for the needs of expatriate children and religious institutions

that provided primary and secondary education for future priests. But as finding places in public or aided schools became more difficult, and as concern began to increase about the standards in such schools, parents who could afford to do so began to enroll their children in private schools, most of which were of very high quality at that time.

During the educational reform discussions in 1975-76, there was a strong move on socialist grounds to control private schools more tightly, to restrict children's access, and to convert whatever remained of the private education system for Zambians into a system of schools run as cooperatives. The public's negative reaction led to the much more tolerant position that private schools would be permitted if they satisfied the requirements for registration and operated in accordance with the provisions of the law (Ministry of Education 1977). Encouraged by this attitude, the establishment of private schools grew rapidly. They also began to receive much attention in the media, which created the impression that the private school system was large and that it contained the potential for solving many of Zambia's educational ills.

In reality, private schools make only a small contribution to educational provision. The number of registered schools grew from 20 primary schools and 9 secondary schools in 1975 to 33 primary schools and 39 secondary schools in 1985 (table 8.1). In 1975, private schools accounted for just 0.6 percent of primary school enrollment and 2.0 percent of secondary enrollment. By 1984, their share was still 0.6 percent at the primary level, but at the secondary level, it had risen to 7.4 percent. Note that these figures are only for registered private schools. Several schools operate, especially at the secondary level, that for various reasons, often related to the inadequacy of facilities, have not been "registered."

We can make a number of observations about private education in Zambia.

- The number of private schools has increased since 1980.
- Private schools vary widely in quality, from first class to deplorable. However, private secondary schools have a smaller average size, a lower pupil to teacher ratio, and a larger proportion of graduate teachers than either government or aided schools.
- Private schools appear to be making their greatest contribution, in terms of numbers, at the secondary level. The government is under the greatest pressure to expand the transition from primary to secondary school. When it fails to do so acceptably, people turn to private schools. The entry to many of these schools, especially the smaller and more commercial establishments, does not depend on children's performance in the selection examination, but only on parents' ability to pay the fees. Within the secondary private schools, the proportion of girls is higher (at 43 percent) than in other secondary schools. Parents appear to be turning to private schools to obtain for their daughters the opportunities that are not available in the government or aided schools.
- Because they do not provide boarding facilities and depend for their survival on prompt cash payments, private schools are found only in thickly populated, economically healthy areas. Thus in urban areas, they draw off some pupils for which the government would otherwise have to provide an education, and in this way play a role in reducing the pressure for admission to government schools. Because of this reduced pressure poorer students in urban areas have a marginally better chance of being admitted to secondary schools. Critics do not always recognize that private schools make this indirect contribution to

Table 8.1 Number of Private Schools, 1975-85

Level	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Primary Schools											
Number	20	20	18	18	16	18	23	23	27	29	33
Enrollment											
Boys	2,529	2,793	2,575	2,533	2,086	2,659	3,276	3,319	3,929	3,695	3,945
Girls	3,115	3,376	3,077	3,025	2,557	3,161	3,756	3,982	4,400	4,066	4,212
Total	5,644	6,169	5,652	5,558	4,643	5,820	7,032	7,301	8,329	7,761	8,157
(Percentage of total enrollment	0.65	0.68	0.60	0.58	0.47	0.56	0.66	0.65	0.70	0.62	0.60)
Secondary Schools											
Number	9	10	9	12	11	13	18	27	39	36	39
Enrollment											
Boys	654	611	656	1,286	1,493	1,280	2,434	3,883	4,722	5,166	4,767
Girls	834	852	833	1,437	935	1,188	1,738	2,659	3,851	4,122	3,557
Total	1,488	1,463	1,489	2,723	2,428	2,968	4,172	6,542	8,573	9,288	8,314
(Percentage of total enrollment	2.04	1.86	1.78	3.06	2.65	3.14	4.22	6.24	7.45	7.38	6.32)
Secondary School Staff											
Graduates	65	69	67	68	70	83	122	145	216	231	n.a.
Nongraduates	36	33	39	68	41	67	63	118	176	180	n.a.
Total	101	102	106	136	111	150	185	263	392	411	n.a.
Pupil-teacher ratio (secondary)	14.7	14.3	14.0	20.0	21.9	19.8	22.6	24.9	21.9	22.6	n.a.
Average class size (secondary)	28.4	26.6	27.1	30.6	31.9	32.3	33.1	37.8	33.0	35.7	n.a.

n.a = not available

Sources: Education ministries (1975-81), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

achieving a more equitable distribution of resources.

- In 1985, private schools were charging an average of K200 per term for tuition alone. Only the more well-to-do parents could afford such a payment. This will always be a limiting factor on the expansion of private schools. It is also a factor that is affected by the state of the economy. In 1985 enrollment in private secondary schools was lower than in 1984. Possibly the galloping inflation that characterized the economy in 1985 meant that even comparatively wealthy urban families could no longer afford to send their children to private schools. If this is so, private schools may have reached the limits to which the economy will let them grow.

Grant-Aided Schools

The development of education in Zambia owes a great deal to the churches, which established most of the first primary schools, several of the early secondary schools, and a number of the teacher training institutions. The churches still own and manage schools, and in addition some church ministers are involved in educational provision through the education ministries, the university, and government schools and colleges. The churches do not continue to play their former large role in the management of primary schools, but contribute at this level through the four (of the ten nationwide) teacher training colleges they own and operate. At the secondary level, church schools account for approximately 16 percent of the enrollment, but because most of these schools serve the rural population they have an unusually high percentage of boarders: in 1984 more than 85 percent of the enrollment. The first girls' secondary schools in the country were church owned, and more than a quarter of the total enrollment of secondary school girls is still in grant-aided schools.

The aided schools are less of a financial burden on the government than other schools. They receive a grant-in-aid to cover certain operating costs, salary payments for approved teachers, and wage payments for some employees.

Most of the aided institutions have a high reputation for efficiency, discipline, and academic performance. Many of them are also known as centers where innovative ideas and techniques originate. A number have been particularly successful in the area of production work, especially in agriculture. They enjoy the benefits of low staff turnover, while their executives are experienced in managing institutions. All these factors combine to raise them to the status of prestigious institutions that are frequently the preferred choice of parents and pupils, as well as of teachers. However, admission to these schools is controlled, not by the agencies who own and operate them, but by the selection and allocation mechanisms that are operative for publicly-owned schools.

As with government schools, the aided schools do not charge any fees. They have been able, nevertheless, to preserve a high standard of maintenance, with buildings in a good state of repair and plant in working condition. They have also succeeded in maintaining reasonably good stocks of teaching materials and are comparatively well off for textbooks, library books, and science apparatus. Some of this is due to their willingness and ability to make private inputs from their collective resources, but much is due to better management practices, both in preserving their facilities and in caring for books, equipment, and movable goods.

The 1980s have seen increasing calls from highly-placed political figures to extend the churches' ownership and management of schools, partly because of their

efficiency and partly because they cost the government less. Although they have opened some additional institutions, manpower constraints have made embarking on a vigorous program of educational expansion difficult for the churches. They are also inhibited by uncertainty about the best way to respond to the needs of the urban and rural poor. Their direct contact with the poorer segments of the population and their awareness of the problems and needs of the poor have led many church bodies to support ventures in nonformal education, such as establishing quasi-institutions and training programs for primary school-leavers and others, running small cooperatives, and setting up small business enterprises. In the formal education sector, the churches' willingness to expand their involvement would probably be fostered if they had a greater role in pupil and teacher selection and in curriculum design.

Their own shortage of personnel and their uncertainty about the most appropriate fields for their endeavors mean that the churches are unlikely to take up much of the slack left by the government's inability to provide. Possibly they could establish a few new schools, but not many. However, the churches could make a significant contribution in two respects. The church schools have maintained the quality of educational provision even when finances were declining. First, a study in cooperation with the government to discover how they were able to do so when the situation in government schools was quite the reverse would be useful. Second, if freed from the tight government control of the curriculum, some of the church schools might be able to use their knowledge of people's needs, especially the rural people, and their experience in education to devise a curriculum that would be more relevant to their pupils' real needs than the current inherited model.

Increased Privatization and Policy Adjustments

The need to turn increasingly to the private sector for financial support for the education system has necessitated some adjustments in policy and administration. The scope for such adjustments is not large, but they exist. Thus, the Ministry of Education (1977, p. 86) categorically stated that tuition and boarding fees would not be introduced in primary and secondary schools, but this policy had to be modified with the reintroduction of boarding fees. The Ministry of Education (1977, p. 85) also stated that parental contributions were not to replace government provision as the aim was to supplement what government was providing, not to reduce government provision. However, the complete absence of provision for teaching materials for primary schools from the 1986 estimates implies that government provision has now been replaced by parental contributions. Other adjustments include the expansion of self-help activities into secondary education, and greater emphasis on the economic value of production work in schools, In additior the establishment of private schools is no longer just cautiously allowed, but warmly welcomed.

Apart from the reintroduction of boarding fees, each of these adjustments is small in itself, but taken collectively, they are indicative of the way the education system is responding to the rundown in government funds. Some of the steps can be welcomed and justified on grounds other than the stringency that dictated them, but they all illustrate an inability to maintain the level of public funding required by the education system. They also suggest mild desperation. The private sector, which in more plentiful times the government regarded with some suspicion or bare tolerance, is now viewed as an ally, and in many respects as the only hope for the future. It is expected to stave off a financial catastrophe in education and to

absorb the vast output of partially educated young people and put them to profitable work. This readjustment to dependence on private inputs demonstrates the truth of the observation that: "Educational decison-making in any country is, in the final analysis and inescapably, a political process of give and take" (Coombs 1985, p. 177).

However, the possibilities the private sector offers are limited. As already observed, the drop in enrollment in private schools in 1985 may be indicative of the way the economic climate that year affected well-off parents who in better circumstances could afford to send their children to such schools. The real poverty in which most Zambians are living places tight limits on what parents may be expected to contribute toward their children's education. Such contributions cannot come close to the full economic cost. Without a substantial reorganization and possibly a radical transformation of schools, production work will not make any significant contribution. Religious bodies, philanthropic organizations, and other NGOs can all make worthwhile contributions, but they cannot assume responsibility for a very heavy additional share of educational costs. Aid sources from abroad can be tapped more systematically, but they too are limited in the amount they can spend and on how they can spend it. A sobering thought, but one deserving recognition, is that the options for educational financing may be running out.

Some options, however, have not been exhaustively explored, for example:

- to involve local government in raising funds, at least for the primary level;
- to involve large commercial and industrial organizations in the provision of education, as the copper industry is already doing;
- to reduce costs through better management of the existing system, for instance, by seeing to it that poor communications and careless office procedures do not result in teachers remaining on the payroll long after they have left the system.

The government must recognize that there is a definite limit to what the private sector can do to support the education system. Zambia may be approaching that limit. It is therefore all the more necessary to investigate other alternatives.

9

Educational Provision at the Primary and Secondary Levels

When evaluating the impact of economic fluctuations on the education that a country provides for its citizens, one must take account of the entire range of educational provision. This includes the formal structures of schools, colleges, and universities; the variety of less highly stratified educational and training opportunities provided by the state, commercial enterprises, international organizations, charitable bodies, communities, and individuals; and the all important, though virtually amorphous opportunities for education that occur in the home, on the street, though the media, and so on. However, this book is concerned mostly with the highly formalized education system that comprises primary and secondary schools and the university. No express consideration is given to technical education and vocational training, not because they are of little importance, but because they are of such importance that they deserve a separate study. The same is true for the whole area of nonformal education. Accordingly, this section will concern itself with some quantitative aspects of school provision in Zambia during 1975-85. It will then consider some qualitative features of such provision and before turning to curriculum, examination, and staffing issues.

The Expansion of Primary School Enrollments

The period 1975-85 was characterized by substantial quantitative expansion at the primary and secondary levels. The total primary school enrollment, which stood at 872,392 in 1975 had risen by 1985 to 1,348,689, an increase of more than 50 percent (table 9.1). The gross enrollment ratio for the whole country, which had been 90.0 percent in 1975, now stands at 95.5 percent. This latter increase has occurred despite an increase of more than 45 percent in the school-age population. The gross enrollment ratio fell off for a few years after 1976, but has been increasing steadily since 1981. This growth in enrollments was made possible by physical developments, increasing class size, more systematic use of double session teaching, and the introduction where possible of triple sessions for the lower primary cycle.

The effect of triple session teaching can be seen most strikingly in the admission rates to grade 1: in 1984 there were sufficient places throughout the country for 92.4 percent of the estimated seven-year-old population, but in 1985 the

Table 9.1 Primary School Enrollments, 1970-86

Year	*Boys*	*Girls*	*Total*
1970	385,676	308,994	694,670
1971	402,331	327,470	729,801
1972	428,693	349,180	777,873
1973	445,009	365,225	810,234
1974	470,191	388,000	858,191
1975	467,008	396,384	873,392
1976	492,899	414,968	907,867
1977	504,669	432,148	936,817
1978	516,358	448,117	964,475
1979	531,354	465,243	996,597
1980	554,503	487,435	1,041,938
1981	568,039	505,275	1,073,314
1982	593,674	528,095	1,121,769
1983	631,973	562,097	1,194,070
1984	666,347	594,263	1,260,610
1985	713,032	635,657	1,348,689
1986	761,171	680,962	1,442,133

Sources: Ministry of General Education and Culture (1986) and unpublished data.

number enrolled in grade 1 exceeded the number of seven-year-olds by over 16,000, giving an apparent admission rate of 107.1 percent. The application of this strategy in the Copperbelt alone raised the apparent admission rate from 77.0 percent in 1984 to 97.2 percent in 1985.

The growth in the gross enrollment rate has not been accompanied by a similar growth in the net rate, that is, in the proportion of children in school who are actually of the proper school-going age. Although great reliance cannot be placed on age-related data in statistical returns from primary schools, there is sufficient consistency to give some indication of the trends. Thus, it appears that the net enrollment ratio has been stagnant since 1975 at about 78 percent, that is, only some 78 percent of the children in primary schools lie within the correct age limits for primary school attendance. The stagnation appears to be due to the continued pressure on the education system from the large backlog of children who could not find places in the past. On their entry to school, such children occupy grade 1 places and consequently deny them to seven-year-olds. This is seen clearly from the age-specific enrollment rates: only about one-third of the pupils admitted to grade 1 in 1983, and for several years previously, were seven years old. Application of census figures to enrollment data shows, in fact, that out of a total grade 1 enrollment of 169,038 in 1980, 9,613 pupils were below the age of seven and 91,029 (or 53.9 percent) were over the legal age of seven or eight. The ministry's data show that the proportion of age-appropriate children has been declining across the years. In Lusaka and the Copperbelt only about 25 percent of the seven-year-olds have been

finding their way into school in recent years, compared with over 30 percent a decade earlier. However, in the rural areas, a much higher proportion of seven-year-olds are in school and the proportions are generally increasing, though slowly. Hence the overall decline in the age-specific enrollment rate is largely an urban phenomenon, confined for the most part to Lusaka and the Copperbelt. It is clearly related to the large population increase being experienced by these two areas and to their lack of physical capacity to deal with all school-aged children.

However, not all seven-year-old pupils are in grade 1; some were admitted to school below the age of seven, and may now be in grade 2 or even grade 3. The number of such children is captured in the participation rate, which compares the total number of seven-year-old children in school, regardless of grade, with the number in the population. In 1975, according to data from the Ministry of General Education and Culture, 49.7 percent of all seven-year-olds were in school. This proportion fell quite steadily to 37.8 percent in 1981 and 1982, and then rose slightly to 38.4 percent in 1983. More recent data are not yet available to indicate whether this recovery has been maintained.

In the 1970s there were more seven-year-old children in classes other than grade 1 than in the 1980s. Across the period 1975-78 the average number of seven-year-olds in grade 2 and above was 11,027, whereas it was 7,681 across 1980-83. This shows that in the more recent years fewer very young children were being enrolled in schools. Probably the pressure of the increasing population of children of the correct school-going age and the backlog of those already overage but not yet in school combined to reduce the admission chances of underage children. Possibly financial problems also deterred parents from sending children to school at too early an age.

The Growth Rate of Primary School Enrollments

The growth pattern of primary school enrollments deserves comment (table 9.2). First, across the decade the growth rate at all levels was considerably larger than the population growth rate. This was true not only at the national level, but also at the level of each educational region. The highest overall rate of primary growth occurred in Lusaka, with an annual average increase of 7.2 percent for grades 1 to 7 and of 7.0 percent for grade 1. But the North-Western and Central regions also experienced very high growth rates, as did the Copperbelt for grade 1. Clearly these massive enrollment growth rates cannot be maintained. Apart from the resources they would consume, they would soon outstrip the prospective school population. However, they are needed currently because of the backlog that exists, especially in the large urban centers of Lusaka and the Copperbelt.

Second, during 1975-80 the rate of growth was considerably slower than during the previous five years (table 9.2). Then the growth rates began to increase again so that the period 1980-85 saw astonishingly high annual rates of growth in grades 1, 5, and 7 and across grades 1 to 7. The average annual growth rate for grade 1 enrollment was 3.5 percent for 1970-75, 2.9 percent in 1975-80, and 7.9 percent in 1980-85. A similar pattern is displayed by the enrollments across grades 1 to 7; however, for grades 5 and 7 the 1980-85 rate, though higher than that during 1975-80, was lower than that for 1970-75. This was because the decline in the growth of the grade 1 enrollment rate during 1975-80 was still working its way through the system in 1980-85. Note also that in most cases the growth of the enrollment rates for girls outstripped those for boys. To some extent this reflects the smaller base for girls, but this is not the entire explanation. Since places offered at the primary level

Table 9.2 Enrollment Growth Rates, Primary Schools, 1970-85
(average annual rate)

Grade	*1970-75*	*1975-80*	*1980-85*
Grade 1			
Boys	3.17	2.61	7.93
Girls	3.74	3.12	7.82
Both sexes	3.45	2.87	7.87
Grade 5			
Boys	6.57	3.91	6.10
Girls	7.91	5.66	6.89
Both sexes	7.14	4.69	6.47
Grade 7			
Boys	7.50	4.47	7.05
Girls	10.90	6.72	8.53
Both sexes	8.72	5.35	7.66
Grades 1-7			
Boys	4.86	3.10	6.54
Girls	6.04	4.22	6.91
Both sexes	5.39	3.62	6.71

Sources: Education ministries (1970, 1975, 1980), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

do not discriminate between the sexes, the figures illustrate people's de... to ensure that a larger proportion of girls receives an education.

When enrollment data are analyzed by region, they follow the same U-shaped curve for growth in enrollment rates during 1970-85 as described in the previous paragraph. This shows that in the years immediately after the financial decline set in the rate of expansion at the primary level slowed down perceptibly, but that this was followed by considerable acceleration. Thus, one of the immediate impacts of the financial difficulties appears to have been considerable uncertainty and even disarray that manifested themselves in a more sluggish growth rate. This was followed by greater optimism and a greater determination to make up for lost time. This reaction says something about the robustness and resilience of the education system. Heyneman (1983) noted something similar in Uganda, where the education system survived in the face of the most adverse financial, social, and political conditions.

The Expansion of Secondary Schools

Much the same pattern is found at the secondary as at the primary level, except that because the initial base at the secondary level was small, when expressed in percentage terms increases appear very large. Thus, the total enrollment increased by 80 percent, from 73,049 in 1975 to 131,502 in 1985 (table 9.3). The

Table 9.3 Secondary School Enrollments, 1970-86

Year	*Boys*	*Girls*	*Total*
1970	35,205	17,267	52,472
1971	37,518	18,487	56,005
1972	39,943	20,108	60,051
1973	40,348	21,006	61,354
1974	43,564	22,200	65,764
1975	47,983	25,066	73,049
1976	51,871	26,934	78,805
1977	55,498	28,389	83,887
1978	58,737	30,243	88,980
1979	60,200	31,595	91,795
1980	61,351	33,244	94,595
1981	63,996	34,866	98,862
1982	67,622	37,237	104,859
1983	73,586	41,502	115,088
1984	80,339	45,472	125,811
1985	83,407	48,095	131,502
1986	95,112	55,286	150,398

Sources: Ministry of General Education and Culture (1986) and unpublished data.

increase at junior and senior levels was much the same, but because of their smaller initial numbers, the proportionate increase for girls was larger.

The picture of growth rates at the secondary level is in many respects similar to that observed in the primary schools (table 9.4). In terms of total secondary enrollment, the average annual rate of growth reached 6.8 percent in 1970-75, slowed down to 5.3 percent in 1975-80, and increased again in 1980-85 to 6.8 percent. Growth at the point of admission to secondary followed the same U-shaped pattern of high in 1970-75, low in 1975-80, and high in 1980-85. Since the grade 8 growth rates from 1970 to 1980 were lower than those for grade 7, and the base for the latter was initially larger than for grade 8, it was inevitable that there should be a decline in the transition rate from grade 7 to grade 8. However, the massive growth rate of 14.6 percent observed for grade 8 in the period 1980-85 shows that determined efforts were being made to arrest the backward slide in transition rates that had set in during the previous five years.

Developments in grade 12 were quite contrary to those in all other educational levels during the period under review. The growth rate continued to increase during 1975-80, but then began to decline. Two reasons explain this. First, the increases effected at the junior secondary level in 1970-75 were still having their effect at the senior level some years later. Second, the stress on the development of new facilities and the increase of enrollments at the senior level declined in the 1980s because of resource constraints and the growing realization that training

Table 9.4 Enrollment Growth Rates, Secondary Schools, 1970-85
(average annual rate)

Grade	*1970-75*	*1975-80*	*1980-85*
Grade 8			
Boys	7.56	2.54	14.26
Girls	6.56	2.77	13.82
Both sexes	7.18	2.63	14.09
Grade 12			
Boys	5.48	7.08	3.48
Girls	7.25	10.21	7.91
Both sexes	5.91	7.81	4.80
Grades 8-12 (average)			
Boys	6.39	5.04	6.33
Girls	7.74	5.81	7.67
Both sexes	6.84	5.31	6.81

Sources: Education ministries (1970, 1975, 1980), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

opportunities for grade 12 school-leavers were stagnating while job opportunities were declining.

Secondary School Boarders

Developments at the secondary level differed from those in primary schools, especially with regard to boarders. The proportion of boarders has always been high, until 1984 accounting for more than half of all secondary school pupils. In some regions, most of the pupils were boarders. However, the recent emphasis on reducing costs by providing day facilities has reduced the proportion though not the actual number of boarders. Two strategies have made this possible: concentrating most of the new developments on the provision of places for day pupils and converting existing boarding schools into day schools, with the former boarding facilities being used to provide additional places for day pupils. Another development was that from May 1986, parents became responsible for the costs of boarding, although the fees only covered about one-third of the actual costs. The balance was subsidized from public funds.

Toward the end of the year, the Ministry of General Education and Culture conducted a survey to assess the impact of the new measures. The survey found that a number of pupils had transferred from boarding to day schools nearer to their homes, but that of a total of approximately 26,000 boarders in the 44 schools surveyed, only about 600 had been obliged to discontinue their secondary education because of an inability to pay the fees. However, whether pupils will continue to attend secondary boarding schools as freely as they did in the past remains to be seen, and in particular, what is the effect on two groups, rural pupils who must depend heavily on boarding accommodation, and pupils who already have a sibling attending

school as a boarder. The government has established a bursary scheme to assist the neediest 10 percent of boarders, but criticisms have already been leveled against its cumbersomeness and its inability to respond rapidly to cases of genuine need. There are also signs that the bursary scheme does not reach out to many who stand in need of it because they do not know about the scheme. This lack of information about benefits available within a social services sector tends to be characteristic of rural poverty and remoteness. It brings out the need for the education ministry to show special care in explaining these matters to the rural poor.

Basic Education Schools

To hasten the day when the goal of nine years of universal basic education will be achieved, communities have been encouraged to add on to primary schools the physical structures needed to enable pupils to continue into grades 8 and 9. Primary schools that have been topped up in this way are referred to as basic education schools. Until 1982, only 7 such schools had been established, but during 1983-87, the number increased to 122. These schools now provide 292 grade 8 classes and 219 grade 9 classes. They account for almost one-fifth of the total junior secondary provision in the country.

The rush to establish basic schools has been so headlong that a number of issues connected with these schools have not been explored. In the wider perspective, there is a danger that both the government and communities will use the limited resources at their disposal to add grades 8 and 9 to a primary school rather than for two more urgent tasks: adding grades 5 to 7 to the many schools that currently end at grade 4, and ensuring that all primary schools have enough teaching materials to do their job properly. More narrowly, basic schools present a number of unique problems. Although the general idea is that ultimately all primary schools would go from grade 1 to grade 9, the government has not taken any steps to provide the new schools with the curricula or the materials required. The Curriculum Development Centre has developed curricula for the full nine years, but these have not been issued to the schools. Instead teaching in the upper grades of basic schools is based on the curriculum of the present junior secondary cycle.

In addition, the relationship to existing and new junior secondary schools has not been worked out. The lack of resources means that the government cannot, in this century, make substantial progress along the road to universal basic education lasting for nine years. This being so, it must decide where the new grade 8 and 9 classes really belong: are they the top classes in primary schools, the bottom classes in secondary schools, or entities on their own?

Another problem is that the basic education schools really are quite basic. No science teaching facilities exist (Imenda and Chibesakunda 1986), and there is none of the relatively rich variety of resources that pupils encounter in regular secondary schools. By all accounts, furnishings, equipment, and teaching materials are in short supply and do not exist even in the limited quantities found in secondary schools. Many of the basic schools are staffed by drawing the best teachers out of the primary schools, but these teachers are not given any adequate training for teaching at the post-primary level. Most of the basic schools are small establishments. Of the 123 in existence at the beginning of 1987, 37 had only one grade 8 class, 48 had two, and 38 had three or more. This means that many of these schools will face difficulties in offering a broad curriculum and in being properly staffed. They will therefore encounter grave difficulties in meeting the objective laid down for them (Ministry of Education 1977, p. 8): to provide general education,

including some practical skills, together with a sound foundation for further full-time or part-time education.

Progression within the School System

Once pupils have gained admission to primary school, they will complete secondary school, provided they succeed in negotiating three transitional points: the transition from grade 4 to grade 5, the transition from primary school to secondary school, and the transition within the secondary system from junior to senior. The public tends to focus on the transition from primary to secondary school, but a more tragic termination of formal education that occurs for many pupils on completion of grade 4 scarcely attracts any attention, very likely because it tends to occur in rural rather than urban areas.

The Transition from Grade 4 to Grade 5

Few people realize that grade 4 pupils in many rural schools must take an examination to determine who will proceed to grade 5. The district education officer sets and administers the examination and selects a panel of examiners to mark the papers. The education officer, in conjunction with the heads of admitting schools, makes the actual selection. The reason for this pruning is that many of the rural schools are incomplete and do not go beyond grade 4, thus there are fewer grade 5 places than grade 4 places. In 1984-85, the shortfall was 511 classes, which was nevertheless an improvement over 1974-75, when the shortfall was 841 classes. But it still meant that nationwide, for every 100 grade 4 classes, only 88 grade 5 classes existed. This shortfall occurred almost exclusively in rural areas.

At the national level, the progression rate from grade 4 to grade 5 rose from 77.7 percent in 1974-75 to 92.9 percent in 1984-85 (table 9.5). Each year the proportion of boys proceeding to grade 5 exceeds the proportion of girls at the national level, although there are isolated examples at the regional level where the proportion of girls is higher. The number of pupils who do not succeed in moving on grade 5 has fallen from 27,358 in 1975-76 to 13,769 in 1985-86, equally divided by sex. On average, about 14 percent of those who do not proceed to grade 5 will repeat a lower grade, usually grade 4, in the hope that they will succeed next time. Some who do not succeed in making the transition in the rural areas migrate to the towns where progression to grade 5 is automatic.

The plight of those who terminate school after only four years of primary education is touched on elsewhere in this report, but in general we can expect these pupils to relapse into illiteracy. Sufficient groundwork would not have been laid during their schooldays to serve as the basis for permanent literacy. Moreover, the society in which they are immersed is not fully literate, and furthermore, does not make extensive use of printed materials. Moreover, the incentives to use such materials as may be available are low in rural areas.

Although the absolute number of pupils who are affected is small, and in relative terms constitutes only about 1 percent of the total primary school enrollment in a given year, their needs deserve special consideration. Because they come from scattered populations, responding to these needs may be comparatively expensive. A current attempt to do so is by means of multigrade schools (where enrollment by age groups is so small that all the children are amalgamated into one or just a few classes), since this system allows the creation of a big enough audience to justify the allocation of teachers. But multigrade schools will not reach all grade 4 leavers. In

Table 9.5 Progression Rates from Grade 4 to Grade 5, 1974/75 to 1984/85
(number in grade 5 as a percentage of the number in the preceding year's grade 4)

Area	*1974/75*	*1975/76*	*1976/77*	*1977/78*	*1978/79*	*1979/80*	*1980/81*	*1981/82*	*1982/83*	*1983/84*	*1984/85*
Whole country											
Boys	80.0	82.4	82.6	82.7	83.9	87.3	87.2	89.5	92.4	92.5	95.1
Girls	74.9	78.4	79.5	79.9	79.9	83.6	84.9	87.3	89.1	89.6	91.6
Both sexes	77.7	80.6	81.1	81.4	82.7	85.6	86.1	88.5	90.9	91.1	92.9
Regions											
Lusaka	98.0	104.2	98.6	100.9	102.6	102.3	100.6	103.6	103.8	105.0	107.0
Copperbelt	98.0	97.5	99.6	98.0	100.4	103.4	100.5	101.7	103.9	103.2	101.5
Central	83.0	81.8	84.4	85.3	85.2	90.0	89.3	90.4	95.8	92.1	97.2
Northern	62.2	66.8	67.0	68.4	70.6	74.5	75.5	77.6	80.5	81.3	84.1
Western	76.2	76.3	77.6	75.7	78.5	78.3	79.2	81.5	81.7	80.9	84.6
Eastern	60.8	65.7	63.8	64.0	64.6	66.0	71.1	74.0	77.3	79.1	80.6
Luapula	61.7	64.2	64.9	66.9	69.0	77.4	76.4	81.5	84.1	86.9	86.9
North-Western	71.6	69.6	69.4	71.6	70.7	73.3	77.3	85.8	89.2	92.3	93.1
Southern	79.6	82.7	85.6	85.7	84.0	85.5	87.1	87.5	88.6	92.0	91.4

Sources: Education ministries (1974-81), *Educational Statistics;* Ministry of General Education and Culture unpublished data.

Table 9.6 Transition Rates from Primary to Secondary School, 1974/75 to 1984/85
(number in grade 8 as a percentage of the number in the preceding year's grade 7)

Area	*1974/75*	*1975/76*	*1976/77*	*1977/78*	*1978/79*	*1979/80*	*1980/81*	*1981/82*	*1982/83*	*1983/84*	*1984/85*
Whole country											
Boys	22.9	22.8	22.5	22.7	21.4	21.1	21.1	22.0	23.6	25.1	31.5
Girls	22.8	21.1	21.0	20.2	18.5	18.7	18.8	19.1	20.6	21.1	27.4
Both sexes	22.9	22.2	21.9	21.7	20.2	20.1	20.2	20.8	22.3	23.4	29.7
Regions											
Lusaka	24.9	24.9	25.2	25.8	23.6	22.4	21.6	23.4	25.0	24.7	26.3
Copperbelt	27.2	26.0	26.2	25.5	22.3	22.2	22.5	22.8	24.1	27.8	38.8
Central	18.8	21.8	20.9	21.2	19.4	19.9	21.7	19.8	17.7	22.2	25.6
Northern	22.2	21.6	20.6	19.2	19.4	19.3	17.6	20.2	20.5	20.3	31.0
Western	17.8	16.8	16.2	16.1	16.3	17.3	16.9	17.2	18.9	20.8	23.5
Eastern	22.2	18.8	17.9	17.5	15.6	15.7	16.6	18.6	22.3	20.8	24.0
Luapula	19.2	22.0	23.7	23.4	23.8	26.1	24.1	24.2	22.8	25 4	27.4
North-Western	22.4	17.9	18.2	19.9	19.8	16.6	19.8	25.2	26.8	23.3	32.5
Southern	22.2	21.9	20.9	20.9	19.1	18.6	18.5	16.8	21.8	20.3	26.3

Sources: Education ministries (1974-81), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

1983, 641 schools terminated at grade 4 but the multigrade system will be introduced at only some 150 schools. The other incomplete schools have too large an enrollment to justify this approach. It is unfortunate that social and political pressures, coupled with the dynamism of communities, cannot be mobilized to meeting this very pressing need for additional grade 5 to 7 facilities in the way they are being rallied to expand the number of grade 8 and 9 places.

Transition from Primary to Secondary School

Although the number of pupils taking the secondary selection examination has risen steadily and rapidly with the growth in grade 7 enrollment, the proportion that can find a place in secondary school has managed to keep pace, or even improve slightly. In 1974-75, 22.9 percent of primary school students went on to secondary school, and by 1984-85 this figure reached 29.7 percent (table 9.6). However, some decline in the proportion, though not in the absolute numbers, began in 1976-77 and continued until 1979-80 when the lowest transition rate since independence, 20.1 percent, was recorded. After that the transition rate began to rise again when the impact of the new basic education schools began to be felt. Thus the grade 7 to 8 transition rate also follows the U-curve pattern of decline in the years immediately after the recession set in, followed by upward growth. The size of the transition rate received a large, but temporary, boost in 1984-85, when the reorganization of the secondary school pattern from three to two years of junior secondary and from two to three years of senior made it possible, for one year only, to admit an exceptionally large number of students to grade 8. In absolute terms, 48,232 pupils were enrolled in grade 8 in 1985 compared with 19,254 in 1974.

At the national level, the transition rate for boys is higher than that for girls, though there are instances at the regional level where a higher proportion of girls than boys proceeds to grade 8. The higher rate for boys is partly attributable to the greater availability of boarding places for boys, and partly because boys obtain consistently higher scores than girls in the secondary selection examination. The tendency of boys to outperform girls, not only in the secondary selection examination but in all public examinations in Zambia, is so well marked that there is reason to suspect that examinations may be biased in favor of boys. Clearly this is an important issue that deserves further investigation.

The proportion of grade 7 pupils who enter secondary school is higher in some regions than in others. Lusaka and the Copperbelt are particularly well favored in this way, but the higher transition rates for these regions in recent years is due very largely to the high proportions of boys who proceed to grade 8. Girls from these regions tend to have low rates of progress.

Social and historical factors have affected the location and development of secondary schools, but urbanization appears to have been a prominent influence. The serious disadvantages that the Copperbelt and Lusaka suffer in regard to provision at the primary level have not carried over to the secondary level. As with all regions in Zambia, these two centers do not have enough facilities for all children of secondary school age, but they have proportionately more than any of the others, above all, more than the rural regions. The advantage of the Copperbelt is likely to increase as it is one of the areas where there has been the most extensive development of self-help basic schools (by contrast, these are least developed in Lusaka; instead, the capital is served by a large number of new private schools). The imbalance being created by the rapid expansion of secondary facilities in the Copperbelt is likely to keep the public demand for the expansion of secondary

education at such a pitch that attention and resources will be diverted away from the need for quantitative expansion at the primary level and qualitative improvements at all levels.

Transition from Junior to Senior Secondary School

Secondary education in Zambia is made up of two cycles, junior and senior, with transition being based on performance in the Junior Secondary School Leaving Examination (JSSLE). Up to 1971, the junior cycle lasted two years and the senior three years, with the transition occurring at the end of grade 9. In 1972, the junior secondary program was extended to three years and the senior reduced to two years. This arrangement, with the transition being made at the end of grade 10, continued until 1984. Another change was made in 1985, with a return to the earlier pattern of two years for junior secondary and three for senior. This is the current arrangement, with the JSSLE and transition from junior to senior secondary level taking place on completion of grade 9.

The government's policy was to establish enough senior secondary places to allow approximately 50 percent of those completing junior secondary to continue into senior. It could not sustain this policy, however, because provision of places at the junior level grew at a faster rate than at the senior: enrollments in the final year of the junior cycle were 107 percent larger in 1984 than they had been in 1974, but the increase in enrollment in the first year of the senior cycle during the same period was only 78 percent. Because of this, the transition rate from junior to senior secondary school fell from 53.7 percent in 1975 to 46.8 percent in 1984 (table 9.7).

Table 9.7 Transition Rates from Junior Secondary to Senior Secondary School, 1974/75 to 1983/84
(number in grade 11 as a percentage of the number in the preceding year's grade 10)

Year	*Boys*	*Girls*	*Both sexes*
1974/75	58.3	45.3	53.7
1975/76	56.8	42.5	51.9
1976/77	55.3	37.8	49.2
1977/78	56.1	42.1	51.2
1978/79	53.5	41.7	49.4
1979/80	50.6	46.2	49.1
1980/81	53.6	39.8	48.7
1981/82	52.7	45.2	50.1
1982/83	50.4	42.9	49.8
1983/84	49.8	41.9	46.8

Sources: Education ministries (1974-81), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

The transition rate was maintained at approximately 50 percent for as long as it was because new senior school places, many of them created with World Bank assistance, were coming on stream. However, very few new senior secondary

classes have been started since 1985, because the government does not consider this to be the most important area for new developments. A higher priority for the government is to use capital funds and aid from abroad to enable the largest possible numbers to find places in primary and junior secondary schools. The outcome has been a rapid increase at the junior secondary level, largely because of the growth of basic education schools, but very little increase in the numbers beginning the senior secondary cycle. As a result, the transition rate from junior to senior secondary fell sharply to 38.2 percent in 1985, the first year when under the new arrangements transition occurred on completion of grade 9. This decline is likely to continue, although the number going into senior secondary will remain fairly stable at about 13,500.

The bias against girls that appears at so many points in the education system also manifests itself at the transition from junior to senior secondary school. The proportion of girls who proceed to senior secondary has been consistently lower than that of boys, at times by as many as 17 points (table 9.7). There is some tendency for the difference between the rates to become smaller; nevertheless, while 8,908 places could be found in grade 11 in 1984 for the 17,894 boys who completed grade 10 in 1983, only 4,563 places could be found for 10,892 girls. Girls suffer this discrimination even though there are a number of schools for girls only, and coeducational boarding schools reserve hostels for girls. The effect of the lower transition rate for girls is that there are twice as many boys as girls at the senior secondary level, whereas at the junior level there are approximately three boys for every two girls.

The Education of Girls

A positive development during the period 1975-85 has been the increasing proportion of girls in the education system. The number of girls participating is always less than the number of boys, but when the numbers begin to equal each other, this may be taken as a sign of real progress. The enrollment figures show that the proportion of girls has increased throughout the primary and secondary systems (table 9.8). Despite this improvement, all is not yet as it should be, since the proportion of girls should be slightly higher than that of boys to reflect the general population.

This improvement is also borne out by the fact that between 1975 and 1983, the percentage of 7-to 14-year-old girls not in school showed a marked decrease from 31.4 to 26.3 percent, at a time when the proportion for boys increased slightly from 20.2 to 20.5 percent. The decrease for girls was most marked in rural regions. This suggests that families in the rural areas made special efforts to improve the participation of 7-to 14-year-old girls in school.

The improvement in the overall participation of girls in primary education occurred at a time when there was a large increase in the absolute numbers attending primary school. It also occurred during a decade of severe economic setbacks that saw real incomes falling at an alarming rate. More recently, there have been years when drought conditions wiped out the potential income, and even the food supplies, of many rural families. The most vulnerable groups were hit the hardest: subsistence farmers, female-headed households, and the urban unemployed. One might expect that in such circumstances the proportion of girls in school would decline, since their labor at home might free other members of the family for more productive economic activities, their nonparticipation in school would free up the money needed to support the education of boys, and their early

Table 9.8 Proportion of Girls in School Enrollment, 1975-85
(number of girls as percentage of total enrollment)

Grade	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Primary schools											
Grade 1	48.7	49.0	48.9	49.3	49.4	49.3	49.3	49.2	49.3	49.3	49.2
Grade 5	44.0	44.8	45.6	45.5/	45.9	46.1	46.6	47.0	46.6	47.0	47.1
Grade 7	38.0	38.3	39.4	40.5	40.7	40.6	41.5	41.6	41.7	42.0	41.8
Grades 1-7	45.4	45.7	46.1	46.5	46.7	46.8	47.1	47.1	47.1	45.6	47.1
Secondary schools											
Grade 8	37.6	36.0	36.7	36.7	37.1	37.8	37.8	38.1	38.3	37.5	38.7
Grade 12	25.2	27.9	26.7	25.9	27.9	28.0	31.2	28.4	31.4	33.3	32.4
Grades 8-12	34.3	34.2	33.8	34.0	34.4	35.1	35.3	35.3	36.0	36.1	36.6

Sources: Education ministries (1975-81), *Educational Statistics;* Ministry of General Education and Culture unpublished data.

marriage would relieve the family of some financial responsibility. That the reverse happened is a manifestation of people's belief in the value of education and of their awareness of the importance of educating girls to achieve progress.

Coombs (1985) points out that the lowest participation rates for girls are usually found in countries in which the overall participation rates are low. This implies that as the overall enrollment rate increases, the proportion of girls will likewise increase. This is more or less what is happening in Zambia. Coombs also observes that "wherever significant female disparities exist, they are always greatest in higher education" (1985, p. 226). In Zambia this is seen even at lower levels; the proportion of girls falls steadily between one grade and the next. It is even more pronounced at the secondary level, where girls comprise only slightly more than one-third of the enrollment, and is worst of all at the university, where there are four male students for each female.

The improvements in the proportion of girls attending school are occurring slowly and laboriously, but may be hastened indirectly by Zambia's financial problems, which have brought a growing realization that women have an economic role to play as producers of food, key members of the informal sector, and heads of households. However, specific policies, backed up by implementable measures, are still needed to accompany this developing awareness. No national plan has ever pointed to the high priority that girls' education should receive. Yet the achievement of universal education is closely linked to the improvement of educational opportunities for girls and women and to the widening of opportunities for girls to break into areas of study that have traditionally been male preserves. Whether the Zambian government has really grasped this point, or given enough thought to the steps needed to ensure more equal participation by girls, is not yet clear.

Geographic Disparities

As already pointed out, educational provision varies from region to region in a

number of aspects. Most of the disparities between regions are not extreme and are gradually disappearing, but they still exist in the following areas:

- admissions, enrollments, promotion rates, and examination performance;
- allocation of funds for teaching materials, maintenance, and other essentials;
- number of trained teachers and the proportion of female teachers.

In two cases, however, the difference between regions is marked: at the level of admission to grade 1, where the rural areas have a clear advantage over urban areas, and of transition to grade 5, where the advantage lies with the urban areas.

Most of the differences are slowly disappearing because of the increased provision of facilities in all areas and at all levels, and in some instance as a result of deliberate policy measures, as with the increased provision of grade 5 places in rural areas. However, much of the disparity is vanishing as the unplanned outcome of other measures, such as efforts to make the curriculum more relevant and to foster more widespread parent participation in school development. Although with fewer financial constraints some of the disparities might have disappeared more quickly, there is no evidence to suggest that they have been worsened or unduly prolonged because of the economic recession.

Policy measures can control, reduce, and eventually eliminate some geographic disparities, such as the lack of sufficient grade 1 places in urban areas or the distribution of trained teachers. But other inequalities are due to society's attitudes and are less amenable to policy interventions. For example, parents largely control the age at which children begin school, their actual attendance, and their decision to drop out of school.

A number of apparently geographic disparities are actually tied up with other forms of inequality and linked to other inequalities in society. Thus, the inequality of access to grade 1 is closely related to the inequality between rich and poor in urban areas and the inability of the urban poor to press for adequate educational facilities for their children. The inadequate provision of grade 5 places in the rural areas is connected with Zambia's historical development and its partition into two economic entities, the line-of-rail and the rest of the country.

There is some danger that new forms of geographic disparity are beginning to emerge. Two in particular are important. First, the development in the form of basic education schools of what may be a substandard form of secondary school and type of education in the areas where the poorer sectors of the population live. Second, secondary and tertiary education may become the province of pupils from better off homes, mostly urban, whose parents have had some form of higher education.

To eliminate existing disparities and head off new ones, whether based on sex or geographic or socioeconomic factors, the government should take more determined action based on better information. Policymakers in the education ministries need to show more dynamism in addressing issues that involve disparities, but to this end they must be better informed about such issues. An extensive information base and good analytic capacity are both needed for providing decisionmakers with timely advice based on a constantly updated review of the state of the education system. Unfortunately, Zambia's information generating and processing capabilities have deteriorated during the last ten years, partly because of the country's economic difficulties. Thus, a strategy for the control and elimination of disparities will require the establishment of a good research and information base within the education ministries, at the university, or elsewhere.

Repetition and Efficiency

Pupils are allowed to repeat a grade if they are young enough, if their repeating will not prevent the access of a nonrepeater, and if the school head judges that they will profit by repeating. Because of automatic promotion to the next class at the end of grades 1, 2, 3, 5, and 6, only a small proportion of pupils repeats these grades. The repetition rate in grades 1, 2, 3, and 5 is approximately 0.3 percent and has not changed substantially since the mid-1970s (table 9.9). The rate is somewhat higher in grade 6, where most of the repeaters are pupils who have already completed the primary cycle. They repeat grade 6 either because there is no room for them to repeat in grade 7, or because they are considered to have a better chance of eventual success in the secondary selection examination if they repeat grade 6.

Table 9.9 Repetition Rates, 1975-83
(number of repeaters as a percentage of the preceding year's enrollment)

Grade	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*
Grade 1	0.47	0.32	0.26	0.29	0.29	0.24	0.24	0.27	0.33
Grade 4	3.43	2.70	2.40	2.40	2.39	2.41	2.14	1.87	1.73
Grade 6	1.35	1.11	0.87	0.87	1.26	1.43	1.12	0.92	1.09
Grade 7	8.89	8.24	5.80	3.93	7.13	9.49	6.44	5.31	7.91
Grades 1-7	2.09	1.80	1.36	1.18	1.63	1.94	1.51	1.29	1.63
Grade 10[a]	n.a.	n.a.	n.a.	4.64	4.74	4.01	3.68	4.53	5.79

n.a. = not available

a. In 1975-83 students took the junior secondary school leaving examination at the end of grade 10.

Sources: Education ministries (1975-1981), *Educational Statistics*; Ministry of General Education and Culture unpublished data.

The highest rates of repetition occur in grades 4 and 7. In response to the social demand for more secondary education, the proportion of grade 7 repeaters has been rising somewhat, from 6.6 percent in 1975-78 to 7.2 percent in 1979-83, although due to underestimation by the schools, the current rate is probably closer to 10 percent.

The actual number who repeat a year, at all points of the primary system, is now about 20,000. This clearly represents a considerable waste of resources. It is also inequitable when significant numbers of children have no access to schooling or cannot remain in the system for more than four years. The number who repeat grade 7 exceeds the number who cannot proceed from grade 4 to grade 5; hence, in purely numerical terms, the problem of the grade 4 to 5 bottleneck could be solved by devoting to it the resources that are used for grade 7 repeaters. Repeaters, especially at the grade 7 level, also increase the already large size of classes, even though school heads are not supposed to allow repetition in classes that are already full. This is especially true of urban schools, where the repetition rates in grade 7 tend to be higher than in rural areas.

No data are collected on the number of pupils who voluntarily leave the system or are withdrawn. Estimates cannot be obtained from enrollment data because of data inconsistencies between years. The greatest anomaly is that as it progresses through the system, a cohort often grows in a way that cannot be explained by repetition data. One reason is the practice of allowing new pupils to enroll or voluntary drop-outs from earlier years to reenter the system after enrollment data have been returned to the ministry.

Given the high social value placed on education, the number of voluntary drop-outs is probably very small, but this matter deserves investigation, especially in schools that serve vulnerable population groups, in high density urban areas, and among certain rural communities. Some years ago, a survey found that participation in the shanty town areas of Lusaka was some 50 percent, while in the low-density, prosperous areas of the city it was over 90 percent (ILO/JASPA 1977). Reports from the Eastern region also speak of low school participation rates, with children being withdrawn from school for social and cultural reasons.

The absence of information on drop-outs at points other than on completion of grades 4 and 7 and the discrepancies in the information available mean that constructing cohort analyses that would give a clear picture of the flow of pupils through the system is impossible. However, applying Wolff's (1984, p. 15) formula to the data that are available, we can calculate the number of school years required to produce a grade 7 graduate. The 1975-78 cohort, who began grade 1 in 1969-72, took 8.1 school years to graduate from grade 7, while the 1980-83 cohort, who entered primary school in 1974-77, took 7.4 years. This latter figure is lower than any of those Wolff quotes for countries in East Africa. It shows that the internal efficiency of Zambia's primary education system, as measured in this way, is quite high and is becoming higher.

The pressure to repeat grade 7 will remain, however, so long as the following conditions endure:

- the learning conditions and quality of provision in primary schools remain low;
- the curriculum taught in primary schools bears little relationship to life outside school;
- the evaluation of what pupils have accomplished in primary school is based on a formal examination that emphasizes the ritual, mechanical learning of irrelevant material;
- the principal objective of primary school is perceived as preparing pupils for admission to secondary;
- the number of grade 8 places is too small to absorb all grade 7 leavers.

The first three conditions can be altered by imaginative policies directed toward curriculum and examination reform and with the enlightened and determined use of limited resources. Changing the fourth requires an ongoing exercise aimed at educating not only the general public, but also political and even education leaders, but this exercise will fail unless steps are taken to change the first three conditions at the same time. Resources do not exist to alter substantially the shortfall in grade 8 provision. Whether they will prove adequate in the long term, 20 or more years hence, cannot be answered at this juncture.

10

The Quality of Education

The previous chapters considered how the allocation of public funds for education changed with the onset of the economic recession in 1975, the adjustments made in raising resources from nongovernmental and foreign sources, and the way expansions and quantitative developments took place at the primary and secondary levels. But what about the kind of education that was being offered? Did it undergo any changes in objectives, structure, or content during the years following the recession? Did the activities of some of the main support areas for what goes on in the schools change? What issues occupied educators during this period? What was the quality of educational provision like? This chapter will provide a broad overview of the kind of education provided in the schools. It will then review the quality of the teaching and learning situation.

The Education Provided

On April 29, 1975, the Ministry of Education convened a group of educators, mostly from within the ministry and from the university, to consider the need to reform Zambian education. They agreed on 22 points (Ministry of Education 1975), of which they considered the following to be the most important:

- The system encourages young people to seek white collar employment to the exclusion of jobs requiring manual and technical skills.
- The system responds to society's reward system, thus encouraging social stratification based on educational attainment and income. By concentrating on individual achievement, the education system is unable to inculcate commitment to the development of the community and nation.
- The system is geared mainly to the passing of examinations without transmitting knowledge relevant to pupils' daily lives.
- The curriculum is too bookish and theoretical, with too little attention to practical skills.
- The system has relied too heavily on foreign cultural influences and has deprived itself to a great extent of Zambian culture and values.

Despite the great efforts that have gone into the educational reform exercise since 1975, little real progress has been made in changing the nature and thrust of the education being provided in schools. Concerns similar to those expressed at the 1975

meeting were reiterated a decade later:

> In so far as there have been minimal curricular changes over the past 25 years, the education system is hardly any more relevant to the current needs of Zambia than it was in pre-independence days. It still prepares a few individuals through a mainly academic programme for a limited number of existing salaried employment opportunities, leaving a majority of school-leavers with none of the pre-requisite skills to participate in the local economy and no hope that their meagre qualifications will earn them a place in a rapidly contracting labour market. The curriculum itself is knowledge-based and provides few opportunities for independent thought or the development of adaptability. It is by default rather than design that the unemployed school-leaver is forced to use survival skills to consolidate his place in the socio-economic structure of the nation (Kelly and others 1986, pp. 82-3).

However, this severe critique must be tempered by the recognition that educational reform is a slow, step by step process. The curriculum is developing gradually toward the incorporation of more practical and productive activitie Although these now form part of the curriculum at the primary and seconda levels, they have not yet been fully integrated into it, but have been tacked on as additional subjects or extra activities. They still remain low priority areas, as illustrated by their omission from the process of selection for entry to both junior and senior secondary school.

Although concern about the school-leaver problem is mounting, no serious attempt has been made to orientate the curriculum toward developing the skills that could be relevant to entrepreneurship or to self-employment, but policymakers are giving more thought to the need for such development, and this itself is a sign of progress. Moreover, the Self-Help Action Plan for Education (Ministry of Higher Education and Ministry of General Education and Culture 1985; Ministry of Higher Education 1987a) is helping to concentrate action so that curricula will respond to the needs of the communities being served by the primary and, to a smaller extent, secondary schools. However, education in Zambia has a long way to go before it becomes less bookish, before examinations cease to dominate the whole teaching process, before schools foster pride in Zambia's cultural heritage, before education is brought into close contact with the world of work, and before the monopoly of formal education is broken in favor of a more liberal sharing of resources with nonformal approaches to educational provision (see Ministry of Education 1977, p. v).

The relationship between the economic decline and the efforts to define and operationalize the objectives of education is complex. At one level, the reduced level of resources may have suppressed the process of innovation. The shock caused by the widespread decline of resources appears to have induced a lager mentality, with real curriculum development being replaced by a holding operation that aimed at the redefinition and cautious development of existing structures, processes, and content, but which drew back from anything more ambitious. The demoralization many felt due to "the rise and fall of the (education) reform movement" (Clarke 1979) reinforced this retreat behind the barriers of familiar endeavors. At another level the financial reductions, which should have crippled educational activity and suppressed quantitative expansion but did not do so, served to stimulate much thought about the direction education should be taking. Educational analysts, in Zambia and in the aid agencies, turned their attention with increasing frequency to the effectiveness with which limited resources were being used, the justice of allocating so large a proportion of them to meeting the educational needs of a

limited few, and the action needed to offer a more worthwhile and relevant education to participants within the limits of available funds.

In an ironic way, the economic decline served as the leaven that gave rise to concern about the quality and relevance of education. That concern is still working its way out in ideas, proposals, and plans and has not yet had time to have an impact on the education provided in the schools. Thus, despite all the hardships it entailed, the economic decline may have stimulated efforts to transform education in Zambia into a more potent instrument of individual and national development.

School Quality in Zambia

Evaluating educational quality is very difficult because there is no agreed measure of school quality. A considerable service has been done by Fuller (1985), who points to the need to consider school inputs, school and classroom management practices, and student performance as components of the quality of a school. His comprehensive survey of findings from developing countries breaks down features of education systems into three categories: those found to be related to student achievement in an impressively large number of investigations; those found to be related to student achievement but with the evidence coming from relatively few studies; and those where the research evidence about a relationship to achievement is mixed. The following pages examine Fuller's findings where they are relevant to Zambia to determine whether, based on his findings, educational provision in recent years has improved or deteriorated.

Category I: Factors Consistently and Frequently Related to Student Achievement

The first category of factors are those found to be consistently and frequently related to student achievement. Consistent is interpreted as meaning in more than half the cases reported, and frequent as meaning in more than five analyses.

- *There is a positive relationship between school expenditures per pupil and achievement* (effect found in 6 out of 11 analyses). Zambia's action during the years of crisis has been to reduce per capita spending at both the primary and secondary levels.
- *The greater availability and use of instructional materials raises the quality of learning activities and boosts student achievement* (effect found in 14 out of 22 analyses). In Zambia, the availability of textbooks has declined steadily, the availability of writing materials is not assured, and most school administrators agree that the situation is worse now than in the past.
- *The presence and active use of a school library boosts reading achievement* (effect found in 15 out of 18 analyses). Libraries are almost nonexistent in Zambian primary schools. At the secondary level, almost 70 percent of the schools had libraries in 1979, three-quarters of these being purpose built with seating for 40 to 50 users. School libraries had an average of one to three thousand books, or approximately three times as many books as students, but many of the books were outdated. Schools recognized their indebtedness for books to donors such as the British Council or the United States Information Service, but remained conscious of the inadequacy of their stock, especially of graded fiction, African fiction, and science, mathematics, and civics books (Rigg 1980). (Rigg used the term graded fiction for children's versions of

standard books, where the narrative develops within a well-controlled vocabulary and simple grammatical constructions are used. They are graded because different levels of difficulty are available.)

- *The teachers' years of postsecondary instruction and teacher training will boost teaching skills and lead to higher student achievement* (effect found in 21 out of 30 analyses). Since 1975, the proportion of trained teachers in Zambian primary schools has risen from 79.6 to 82.3 percent and in secondary schools from 86.6 to 97.3 percent.
- *More hours or days of instruction will increase achievement* (effect found in 11 out of 13 analyses). In 1963, the length of the weekly instructional program for primary schools was 1,000 minutes for grades 1 and 2, 1,300 minutes for grades 3 and 4, and 1,700 minutes for grades 5-8. Thus for the entire eight-year cycle, the average instructional time was 1,425 minutes per week, or 1,386 per week if adjusted to a seven-year cycle (UNESCO 1964). In 1984, grades 1-4 had 1,050 minutes of classroom teaching each week, and grades 5-7 had 1,600 minutes (Examinations Council 1984). Hence for the full primary cycle the average was 1,286 minutes of teaching per week. Thus, since 1963 the time actually devoted to teaching has dropped almost 10 percent at the lower primary level and over 6 percent at the upper primary level (not taking into account the reduction of the primary cycle from eight to seven years). There has also been a reduction at the secondary level: up to 1970, the weekly instructional program averaged 1,600 minutes (40 teaching periods of 40 minutes each). In 1984, when physical education and production work were excluded, it ranged between 1,360 minutes (34 periods) and 1,440 (36 periods) of actual classroom teaching.
- *Teachers with more highly educated parents will possess greater language proficiency and increase achievement* (effect found in 7 out of 10 analyses). Candidates for admission to primary teacher training colleges in Zambia must now have a full School Certificate. Since the children of parents who themselves had had secondary or higher education are considerably overrepresented in secondary schools, an increase in the proportion of teachers with more highly educated parents is likely.

Category II: Factors Consistently Related to Student Achievement

The second category of factors are those found to have a consistent relationship with achievement, that is, the effect is observed in at least half the analyses, but the number of analyses is small, five or fewer.

- *The provision of desks will increase the opportunities to read and write, raising student achievement* (effect found in 3 out of 3 analyses). Many primary schools in Zambia lack furniture and fittings. A SIDA-funded program has been supplying desks to primary schools for several years, but many more are needed.
- *Radio and other instructional media efficiently raise student achievement* (effect found in 3 out of 3 analyses). Zambia has an educational broadcasting service that presents over 900 educational radio programs annually. However, the maintenance of radios and the supply of batteries continue to pose problems.

- *Better physical facilities motivate students to learn* (effect found in 2 out of 2 analyses). "The information we have received from observation, discussion and reading leaves us in no doubt that most primary and secondary schools in Zambia are in a state of physical decay" (Coombe and Lauvas 1984, p. 73).
- *Malnutrition will lower school achievement* (effect found in 5 out of 5 analyses). "In a study of 3,699 primary school students and dropouts in Egypt, health status was one of the strongest predictors of academic achievement" (Fuller 1985, p. 43). In Zambia "there has been a general deterioration of the nutrition situation with corresponding increases in morbidity and mortality in both rural and urban areas" (UNICEF 1986, p. 58).
- *In-service teacher training programs will raise the quality of instruction, leading to higher student achievement* (effect found in 4 out of 5 analyses). One in-service college in Zambia trains primary school teachers, while another trains those that will work with handicapped children. In-service training is provided for secondary teachers in several subject areas, and short courses are available at the national, regional, and district levels to meet special training needs. A more informal school-based system of in-service training is provided through resource centers and resource teachers and is now being extended.
- *Teachers with greater verbal skills increase the quality of student and teacher interactions, thereby increasing achievement* (effect found in 2 out of 2 analyses). The only relevant action taken by Zambia has been to require candidates for teacher training to have an ordinary-level pass in English language.
- *The assignment and evaluation of homework will boost learning* (effect found in 5 out of 7 analyses). No accurate information about the practice of assigning homework in Zambia exists, but given the shortage of writing materials, the lack of suitable study facilities in most pupils' homes, and the lack of school facilities for private study homework is probably not extensively assigned.
- *Teachers who expect high achievement receive stronger commitment and better performance from their pupils* (effect found in 3 out of 3 analyses). This factor has not been investigated in Zambia. However, most experts believe that girls' relatively low performance is partly due to the low levels of expectation of teachers and society.
- *The more hours teachers spend in preparing for class, the greater the quality of instruction and the higher the achievement* (effect found in 4 out of 5 analyses). Again, concrete evidence is lacking for Zambia. However, the Radford report (UNESCO 1964) recommended that teachers should not teach two sessions a day since the eight-hour teaching day this entailed left no time for private study or lesson preparation. While precise figures are not available, available data suggest that more than half the primary teachers teach two sessions a day, that is, they spend a minimum of seven hours each day in actual teaching contact with pupils. Clearly this leaves them little time to prepare their lessons and instructional materials.
- *Student boarding will raise student motivation and achievement* (effect found in 3 out of 4 analyses). The process of eliminating boarding is already underway in Zambia's urban areas. New rural secondary schools will continue to provide boarding facilities because of the low population density,

but the basic education schools do not accommodate boarders. The proportion of boarders in secondary schools has declined from 56.9 percent in 1979 to 48.3 percent in 1985.

Category III: Factors that May or May Not Influence Student Achievement

Fuller found mixed evidence about the relationship of other factors to student achievement: some studies confirmed a relationship, but an almost equal number failed to do so. The principal factors of this nature, with relevant Zambian developments, are briefly outlined here. These factors are important as some are regularly raised in considerations of educational quality, despite the lack of a consistent relationship to achievement.

- *Higher overall expenditures* (raised achievement in 2 analyses out of 5). Zambia has reduced its expenditures on education.
- *School size beyond a critical threshold* (reduced achievement in 4 analyses out of 9). Many Zambians have expressed dissatisfaction with the size of schools. Several primary schools have enrollments well in excess of 1,500 pupils, with those in grades 1 to 4 following a triple shift timetable and those in grades 5 to 7 a double shift. Some secondary schools also enroll more than 1,000 pupils, but here the teaching is always on a single shift basis. Almost all secondary schools in the rural areas are boarding schools, a substantial number of which accommodate 900 or more boarders. The Ministry of Education has considered the need to subdivide large schools into units of 600 or fewer pupils, but so far it has taken no concrete steps to this end.
- *More years of formal schooling of teachers* (raised achievement in 10 analyses out of 28). Zambia has raised the formal admission requirement for primary teacher training from completion of junior secondary school to completion of senior secondary school.
- *More experienced teachers* (improved student performance in 10 analyses out of 23). Teachers reaching the pensionable age in Zambia are required to retire.
- *Longer formal training of school heads* (boosted achievement in 3 analyses out of 6). There are in-service programs of one term's duration for primary school heads, and the government is considering the establishment of longer programs.
- *Class size, within normal range* (had no effect on achievement in 16 out of 21 analyses). The normal size in Fuller's analysis appears to lie in the range 15 to 50. The official norm for Zambia is 40 in primary and junior secondary classes and 35 in senior secondary. But primary school classes of 60 to 80 pupils being taught together in a classroom designed and furnished for 40 are quite common in urban areas, while junior secondary classes of 50 to 55 pupils are frequently encountered.
- *The presence and use of science laboratories* (had no effect in 7 out of 11 analyses). Kelly and others (1986, p. 345) recommended that science be taught in multipurpose rooms using special portable science equipment.
- *Higher teachers' salaries* (had no effect in 9 out of 13 analyses).
- *Teachers' greater punctuality* (had no effect in 2 out of 2 analyses).

- *More active teaching and learning interactions in the classroom* (had no effect in 3 out of 3 analyses).
- *More than one class shift per day* (had no effect in 2 out of 3 analyses). Double session teaching has been a feature of school provision in Zambia since before independence. Although the practice is regularly decried, if some form of primary education is to be made available to all children of eligible age, it must be maintained and even extended.
- *Repeating a grade* (had no effect in 4 out of 5 analyses). If this were confirmed for Zambia, it might help to reduce the pressure to allow repetitions in grade 7.

The foregoing analysis shows that Zambia's primary schools display very few of the characteristics that promote student achievement. The government is spending very much less per pupil than in the past. Schools do not have adequate stocks of writing materials or textbooks. There are no school libraries worth talking about. The amount of actual teaching time has been curtailed. Many of the pupils suffer from malnutrition and hunger. They attend schools that are in a serious state of disrepair and learn in classrooms that have not enough desks or furnishings. They are taught by teachers whose verbal proficiency may be superior to that of an earlier generation of teachers, but who are so heavily loaded with teaching duties that they have no time left to prepare classes or to mark homework. Thus the quality of education in the primary schools is low and, on the evidence, the situation continues to deteriorate. The Zambian government faces a daunting task in trying to reverse this trend. It will succeed in doing so only if it recognizes the situation for what it really is, a major crisis that threatens to undermine all that the schools are trying to achieve.

The evidence that has been presented shows that the position is not much better at the secondary level, where there has been deterioration in a number of factors that promote student achievement. Notable among these have been a reduction in school expenditures per pupil, a failure to provide adequate instructional materials and textbooks, a decrease in the number of hours of instruction, and an inability to furnish and maintain facilities properly. Thus, secondary school quality also appears to be low and to have deteriorated since 1975, though the effect may not be as serious as at the primary level.

11

Curriculum Issues

This chapter examines some specific curriculum issues that have attracted attention since 1975, with the exception of production and practical subjects, which have already been discussed. The term curriculum refers to the body of knowledge, skills, attitudes, and values that a school's education system communicates through its teaching, organization, and ethos. This body of knowledge is made concrete as specific disciplines. The syllabus refers to the content within the specific disciplines, that is, the content taught within the bounds of single subjects.

Curriculum Development

The Examinations Council has the sole statutory authority to "formulate syllabuses for examinations" (GRZ 1983). However, the Curriculum Development Centre (CDC) is responsible for developing curricula for all primary and secondary schools, preschools, and preservice primary teacher training programs. The staff of the CDC rose from 30 professionals supported by eight administrative and secretarial staff in 1975, to 46 professionals and 11 support staff in 1985.

In addition to developing curricula, the CDC staff are responsible for producing, evaluating, and revising course materials; and for providing orientation and induction courses for teachers, school inspectors, college lecturers, and educational administrators. In the years immediately following the publication of the proposals for educational reform (Ministry of Education 1977), the CDC devoted much of its time to analyzing the report and reorganizing itself so as to conform more closely to its recommendations. One of these was that the CDC involve educators in the field more closely in the process of developing curricula/syllabuses and teaching materials. In consequence, the CDC allocates much of its resources and time to workshops and other training activities for teachers, inspectors, and education officers in such areas as resource material production, practical subjects, music, environmental science, and home economics.

All syllabuses developed by the CDC are passed to the Examinations Council for approval. Once adopted by the council they are, in principle, passed to the Ministry of Education for use in the schools. However, the council has taken no such action on a large number of syllabuses that it approved. This was partly because several years passed between the formal establishment of the Examinations Council as a statutory body in 1983 and its full assumption of responsibilities. Only since the

beginning of 1987 has the council been sufficiently organized to undertake these.

The lack of action on approved syllabuses was also due to the inadequacy of funds for the dissemination of the materials. The CDC has had long experience of this restriction on its work and noted that "some materials for Zambian Languages, Social Studies and English which had been submitted (to the printers)...as far back as 1976 had not yet been printed" (CDC 1982, p. 35). The CDC also had regular experience of other financial problems: insufficient funds for the travel expenses of staff and for running workshops and lack of suitable transport. As with other parts of the public sector, staff had been maintained in post and their numbers increased, but the government did not supply the necessary funds to enable these highly paid individuals to do their jobs. As a result, they were almost completely desk bound and were unable to promote the frequent and steady interaction with field personnel that is essential for the effective production of curricular materials.

One outcome of this restriction of CDC staff to Lusaka is that the curriculum development process remains highly centralized. This makes it difficult for the CDC to develop variations in curricular materials so that they respond to the different local needs, not only of the rural areas, but also of the deprived communities in the urban shanty towns. Instead, in the mistaken belief that equality implies uniformity, the same syllabuses and teacher materials, often biased toward the middle and upper income urban sector, are used throughout the country. Zambia will require vision and courage to promote the development and use of a more localized curriculum and syllabuses. The lack of finances does not in itself prevent this, but the form of operations that financial restrictions have helped to entrench in the CDC render its occurrence somewhat unlikely.

The Language of Instruction

In 1963, the Radford report recommended that despite difficulties, "a policy decision be made to introduce English as a universal medium of instruction from the beginning of schooling" (UNESCO 1964, p. 25). This was implemented in 1966. In 1976, the Ministry of Education (1976a) proposed a return to the earlier practice whereby a local language had been the medium of instruction during the first years of primary school. Few people opposed this proposal; nevertheless, it was rejected in the final policy statement, which affirmed that "the present policy, whereby English is a medium of instruction from Grade 1, should continue" (Ministry of Education 1977, p. 33). This same statement also acknowledged that "learning is best done in the mother tongue" (p. 32), but for a variety of political and administrative reasons the government decided to retain English as the official medium of instruction, while allowing teachers some latitude to explain concepts in a local language.

The language issue is a difficult one in Zambia, which in colonial days even led to bloodshed at times (Shana 1980). The large number of local languages is said by many in society to preclude the adoption of any one of them as a national language, even though Bemba is the mother tongue of more than 36 percent of the population (CSO 1985b, p. 8) and more than half the people speak it. By contrast, only some 25 percent of the population speak English, and then only under restricted circumstances (Ohanessian and Kashoki 1978). English is not the language most people use for regular communication or social discourse. Formal business dealings may be conducted in English, but it is nevertheless a second language for most people.

Those primary school pupils who do not proceed to the secondary level have limited use for their hard-won competency in English on leaving school. They may treasure what they have learned in the hope of being able to use it eventually in their work, but they will have little occasion to use it in the course of everyday life. However, mastery of English is advantageous to those who continue their formal education or who find employment in the wage sector or as domestic servants. In this sense, the heavy insistence on the use of English in primary school means that the curriculum is heavily biased toward those who stay in school or find wage employment. "The decision to use English has created social and economic inequalities, promoted elitism and made it convenient for political leaders to postpone questions about crucial language policies" (Chishimba 1980, p. 154).

At the same time the stress on learning English and on using it as a medium of instruction implies a denigration of local languages, which some of the educated and political elites in Zambia consider to be insufficiently developed "in terms of functionality, richness of vocabulary and social integration" (Ministry of Education 1977, p. 33) to serve as suitable vehicles for conveying educational and scientific concepts. The status of the local languages is further debased by the general tendency to identify fluency in English with education. Even the primary school-leavers like to show that they are educated and hence "different" by using English (Hoppers 1980b, p. 733).

Studies have borne out that the policy of using English as the instructional medium has impaired learning in Zambia. Students' development of communication, reading, and basic arithmetic skills have all been adversely affected (Sharma 1973; McAdam 1973; Africa 1980). Although the evidence from some other parts of the world on the scholastic effects of learning in a second language are somewhat ambiguous (Dutcher 1982), that the educational development of almost a generation of Zambia's children has been slowed down by the English language policy seems clear.

English as a medium of instruction fails, therefore, on three counts:

- *pedagogically*—it is unlikely to support good learning especially in the critical early primary grades;
- *socially*—it orientates the entire school process in a direction that only a small percentage of pupils will follow;
- *culturally*—it undercuts the local languages and the values they embody.

Teachers in the field are, however, more realistic than some of the policies they have to implement, especially when their own language limitations compound the problems posed by policy measures. Consequently, they have interpreted the authorization to explain difficult concepts in one of the Zambian languages very broadly. This is especially true in grades 1 through 4. A more enlightened view in the Ministry of General Education and Culture tolerates the use in these grades of any language, not necessarily one of the official seven, understood by the majority of the enrollees. This attitude is further reinforced by a change in the policy governing teachers' postings. Until recently, the policy was to post teachers to areas other than their home district. The intention was that this would promote national unity and deter the development of a narrow tribalism or of local pressures that might interfere with teachers performing their duties. The policy was changed for the following reasons:

- unity concerns are less pressing now than they were earlier in Zambia's history;

- teachers are likely to be better motivated if they can stay in their home district;
- teachers are more likely to provide their own houses if they do not have to relocate. This change means that teachers will probably be familiar with the local language, which removes one of the reasons for using English as the main teaching language.

The steps now being taken both officially and unofficially suggest that the steam has gone out of the movement supporting English as the medium of instruction. However, a formal repudiation of the policy may not materialize for some time because of the resources that have been invested in using English for instruction, particularly for the production of instructional materials. The resources to produce comparable materials in the official local languages do not exist. Thus, for several years to come, the situation in the primary schools is likely to be that a local language is used as the medium of verbal instruction, but with heavy reliance on English language materials, when available.

Political Education

An issue that attracted much attention during the decade under review was the proposal to introduce political education into the curricula of all educational institutions (Ministry of Education 1976a). The ideology to be embraced would be Zambian humanism, but the strong socialist tone of the draft statement on educational reform led to fears that the proposed reforms were designed to foster a left-wing socialist mentality and state. At the same time, the public interpreted the proposal's failure to refer to religious values as meaning that religious education would be scrapped. In response to these concerns the final document was modified to eliminate the socialist tone, and political education was retained to promote "an understanding of Zambian humanism, Zambian political institutions and their functions; social studies; cultural and economic development" (Ministry of Education 1977, p. 17). The document also referred to spiritual and moral education, which should "be concerned with the importance of appreciating spiritual, religious and moral values" (Ministry of Education 1977, p. 17). These provisions appeared to satisfy the public.

To translate the proposals on the introduction of political education into practice, the CDC prepared suitable syllabuses and submitted them to both the Ministry of Education and the ruling United National Independence Party (UNIP). No reaction was received from either. Instead, UNIP took active steps of its own. The party sent several individuals to Eastern bloc countries for training in political education and on their return had them posted to primary and secondary teacher training institutions. Here they taught a compulsory course using a syllabus prepared by party ideologues that was biased toward scientific socialism (dialectical Marxist-Leninism).

At the same time political leaders made increasingly frequent references to scientific socialism and stated that they intended to introduce its teaching in all educational institutions. This drew a sharp reaction from the churches, which categorically rejected both the philosophy of scientific socialism and the proposal to give it prominence in the school curriculum (Christian Churches 1979). The resulting controversy culminated in 1982, when President Kaunda invited church leaders to a seminar on humanism and development. In his address, the president assured church leaders that scientific socialism would not replace religious

education, and that no decision had been made to adopt a Marxist ideology for the state (Kaunda 1982). The reaction of his audience was a spirited and unanimous endorsement of the Zambian form of humanism and an equally spirited and unanimous rejection of scientific socialism, both as an ideology and as a school subject.

The church leaders informed their members of the seminar's outcome and reiterated their opposition to the direction political thinking was taking (Christian Churches 1982; United Church of Zambia 1982). The debate continued for some time, but ended later in the year when President Kaunda, recognizing the divisiveness it was arousing, banned all further discussion of the subject. However, since then the political education course has continued in teacher training institutions, where it appears to be accepted more in a spirit of patient tolerance than of alarm. The political education syllabus is not mentioned in CDC reports, but a syllabus on moral and spiritual education has been approved and has been introduced throughout the school system with a full range of specially prepared and available texts.

Population Education

Despite the way in which population growth has outstripped economic growth, leading to a sharp decline in real incomes and in the standard of living, Zambia does not have a population policy. However, in recent years the government has realized that to achieve social and economic development, the population growth rate must be slowed down. One way of achieving this is by developing public awareness of the relationship between the size of the population and (a) the availability of resources, and (b) the quality of life. The government did not focus on this issue until the 1980s, but by 1985, the authorities decreed that population education should form part of the curriculum of schools and colleges.

The introduction of this area of learning is still getting underway. The intention is to teach population not as a separate discipline, but within the framework of three conventional subjects: social studies, science, and home economics. Instructional materials have been prepared for use on a pilot basis, resource staff have been identified, and professional staff have been trained. The program's objective is primarily to heighten awareness about the dimensions of the problem and acceptable methods to control it.

Mathematics and Science Education

Possibly the single greatest area of concern within the school curriculum is mathematics and science. Later chapters will cover the dismal performance in these areas in public examinations and the shortage of qualified teachers, while the response of the aid agencies has already been noted. While the evidence that student performance was worse in 1985 than in 1975 is not clear, at least by 1985 the authorities had acknowledged that this was a special problem requiring a special solution. As with population, *Educational Reform* (Ministry of Education 1977) made no specific mention of this issue. The report dealt in depth with technical education and vocational training, but without any indication that the authors were aware of the fundamental problem of grave weaknesses in the learning (and teaching) of mathematics and science at the primary and secondary levels.

Any hopes of improving performance as the school system expanded were dashed by the rundown of material inputs, the growth of many classes to

unmanageable size, the increasing lack of qualified personnel, and some uncertainty about the most appropriate syllabus. A recent decision requires all students to study mathematics, and two syllabuses are available: one for ordinary students and one for weak students. For science, the shortage of supplies and materials has become so acute that a special written paper has been designed to replace the practical examination at school certificate level. The result is that students may pass their science examinations successfully, but without ever having had the opportunity to handle, possibly even to see, normal pieces of apparatus or to develop laboratory skills. This situation has deteriorated considerably during the years of economic difficulty.

However, as noted when considering the interventions supported by technical assistance, the fundamental problem is not the deterioration that occurred during the period of economic difficulty. The difficulties with mathematics and science existed when the economy was booming. Hence the real question is not about any backsliding since 1975. It is why the general level of performance in mathematics and science has always been so low. Unless the fundamental problems are addressed, any improvements will be merely cosmetic and transient.

It is not easy to know where to start, but one course of action and two lines of inquiry suggest themselves. The action is to give high priority to mathematics and science education. A beginning has been made along these lines with the establishment in 1982 of the Ministry of Higher Education and its mandate to develop mathematics and science education in the secondary schools. But this is not enough. The problem may originate long before secondary school, and this approach would not affect all those children that never go on to secondary school. Much more comprehensive action is needed to improve mathematics and science education across the board.

The lines of inquiry that the education authorities might profitably follow up are both in the field of primary education and have been suggested already in the section about foreign aid. First, how has learning mathematical and scientific concepts in a foreign language affected children's grasp, development, and use of these subjects? Second, how effective is the training primary school teachers receive to teach mathematical and scientific concepts, techniques, and procedures in a language that is not their own to a pupil who has difficulty in handling the language of communication? Investigations of this kind might be addressed in the first instance to the teaching and learning of mathematics, which is the more basic classroom subject. Every primary school teacher must be able to teach the fundamentals of mathematics, and every child must be helped to learn and understand these fundamentals. Progress in learning science depends greatly on prior progress in acquiring some competence in simple mathematics. Hence the desirability of recognizing how serious is the mathematics learning problem in Zambian primary schools and of a determined commitment to apply skilled manpower, domestic resources, and technical assistance from abroad to its solution.

12

Evaluating Educational Performance

The first public examinations in Zambia were held in 1928. since that year examinations have assumed increasing importance. Today they dominate the whole field of education. This chapter will consider three aspects of examinations in Zambia during the period 1975-85: the examination reforms considered or initiated; changes in administering and managing examinations; and examination performance. The latter will be used as a proxy for educational achievement and will provide some information on how the shortages of finances and materials have affected the academic performance of schools and pupils.

Examination Reforms, 1975 to 1985

As part of the educational reform exercise in the mid-1970s, the Ministry of Education issued a critique of examinations (Sharma 1975). The critique outlined the system's shortcomings and proposed improvements. Much of this document was subsequently included in the draft statement on educational reform (Ministry of Education 1976a). Essentially the proposals were as follows:

- that the certification and selection functions of examinations be separated, thereby enabling examinations to support rather than subvert educational objectives;
- that a measure of continuous assessment, which would count toward the overall evaluation of a student, be introduced quickly in all educational institutions;
- that selection for successive levels of education be based not only on academic performance, but also on commitment to humanism;
- that a system of guidance be established whereby "educational institutions would accept a collective responsibility for the welfare of each of their members as students, members of families and members of the community" (Ministry of Education 1976a, p. 71);
- that performance in the education system be stimulated by the introduction of "emulation," an organized method of group competition that spurs participants on to greater effort and achievement for the collective good

During the subsequent national debate, the public expressed anxiety about certain elements of these proposals, much of it based on misinterpretation of the original document. But another factor was undoubtedly the way the document proposed speedy implementation without careful analysis of the implications and costs. The public rejected the proposal that selection for higher levels of education should depend in any way on political attitudes or known commitment to humanism, and stressed that care was needed in the introduction and practice of any system of continuous assessment. The public also expressed doubt about the applicability of emulation as an assessment device. However, aside from these misgivings, the public's reaction to the critique of examinations and the proposals for reform was generally favorable.

The final reform document (Ministry of Education 1977) did not, however, preserve all the proposals in a clear-cut manner. It defended the need for a single examination that would be used to certify past achievement and to select for the next educational level. It also described at some length the problems associated with continuous assessment, and warned that this technique should not be introduced indiscriminately in the terminal certification and assessment examinations. It did not, however, completely rule out school-based assessment, and even called for it in practical subjects and in determining borderline cases. The document discussed at some length the use of examinations for evaluation and for the educational guidance of students. It clearly envisaged some system of feedback that would enable the learning situation to benefit and change in response to findings from examinations. But so much of the final document was devoted to clearing up misconceptions and allaying misgivings that it concerned itself with no more than the general principles of educational assessment and some bland expressions of how these could be translated into practice.

Virtually no further reflection on the need for fundamental examination reform took place until the Education Reform Implementation Project report was submitted in July 1986 (Kelly and others 1986, chapter 22). The report's proposals were based on two premises: that examinations would continue at the end of grades 7, 9, and 12; and that the administrative, allocative function of examinations would be clearly subordinated to their educational functions. The latter were described in terms of examinations promoting skills and knowledge relevant to the real needs of the candidates for whom that level of school would be terminal, testing whether they had attained agreed competency levels in certain basic areas, and providing feedback to schools that would reveal those aspects of the teaching-learning situation most in need of special attention.

The proposals were clearly influenced by Somerset's (1982) work in Kenya, although they went beyond Somerset's ideas in proposing a more extended introduction of continuous assessment in a system of total assessment that would have three components: the results of external examinations; teachers' assessments of work in the classroom; and the results of special attainment tests, developed centrally, but administered, marked, and moderated locally.

The document provided no information on the likely cost of the proposed reforms, but it noted that in the absence of sufficient qualified persons in Zambia to undertake the necessary tasks, help from abroad might be necessary in such areas as developing an examination feedback system, suitable attainment tests, and appropriate examination materials; and training teachers and others in continuous assessment techniques.

The Administration and Management of Examinations, 1975 to 1985

The two most significant developments in the management and administration of examinations during the decade under review were the progressive transfer of responsibility for the school certificate examination to local control and the establishment of the Zambia Examinations Council.

Zambia's first school certificate examination was held in 1946 under the auspices of the University of Cambridge Examinations Syndicate. From then on, except for 1964, the examinations that terminated the secondary school cycle continued to be set and marked in Cambridge. The examinations were based on syllabuses issued by the examining authority, and took some account of the needs of user countries by including relevant topics and in particular, by adapting the history, geography, and biology syllabuses. But Zambia felt the need, as did other newly independent countries, to take responsibility for this important examination into its own hands so that it might control what was taught during the last years of secondary education more effectively. The authorities at the Cambridge Syndicate concurred with these views.

In 1975, the cabinet decided that the school certificate examination should be localized by 1980. Thereafter, the Ministry of Education developed a program of action (Ministry of Education 1976b) to implement this decision. The program required the preparation of a suitable curriculum, syllabuses, and regulations; and the training of examination administrators, chief examiners, question writers, and markers.

Achieving all this within the space of four years was an ambitious undertaking, and one that did not prove possible. Many of the administrative aspects of the examination were brought progressively under local control to the extent that from 1981 on, the school certificate was issued wholly by Zambia. At the same time, the government undertook an extended program for training examination setters and markers. By mid-1986 almost 800 such persons had been trained in various subjects. Zambia has borne most of the costs of these training sessions, but the British government and the Cambridge Examinations Syndicate have also provided financial assistance.

The current position is that papers in the principal subjects are set locally, but are monitored by chief examiners of the Cambridge Syndicate. The examination scripts are marked locally, but a selection is also marked in Cambridge. some moderating of results is also carried out in Cambridge, while the setting of standards and establishment of passing grades is conducted in Cambridge in collaboration with Zambian officials. Much of the routine administration governing entry procedures and the issue of results is conducted in Zambia, but all question papers are dispatched from Cambridge.

The delay in localizing the school certificate examination was not caused by financial constraints. Although these were serious, they did not obstruct the training of Zambian personnel locally or abroad, or the takeover of examination functions in Zambia. What the government had underestimated was the complexity of the entire examination process and the time and resources needed to develop new syllabuses, to familiarize teachers with their content, and to produce the necessary teaching materials. So far the syllabus for religious education is the only one with all the supporting teaching materials that has been fully developed locally and approved for use in schools. The delay in producing syllabuses is indicative of the weakness in the support services for the education ministries, the delays in getting the Examinations Council fully functional, and the scarcity of funds for printing and distributing the syllabuses that have been prepared.

In 1983, the government created the Examinations Council of Zambia. This body, which is only gradually becoming fully operational, is responsible for all matters relating to examinations: approving syllabuses, conducting examinations, and awarding certificates. It is also required to conduct research into examinations, but has not yet been able to undertake this task. Because examinations influence so much that goes on in schools, the Examinations Council must be able to ensure that the various public examinations are technically sound, well administered, and educationally supportive. If it is to pursue these aims, the council will need considerably more resources than it is currently getting.

Performance in Examinations, 1975 to 1985

As might have been expected, the picture of examination performance during the period of economic hardship is very mixed. Generally, performance, as manifested by overall success rates, was poor throughout the decade and there was a slight tendency for it to become poorer. But before substantiating this statement, let us note certain features of educational provision in the years since 1975:

- The number of children taking examinations increased enormously. Even under optimal conditions, this increase would lower overall attainment, since larger numbers imply a spread over a wider range of ability. "In some senses more means worse in the course of rapid educational expansion" (Williams 1986, p. 96).
- The increase in the number of pupils was not matched by any corresponding increase in the number of classrooms or teachers. Hence, classrooms became overcrowded and the amount of personal attention that teachers could give to each child was reduced.
- The availability of teaching materials declined fairly steadily throughout the decade, either because of a lack of funds or because of the unavailability of needed items.
- The composition of the teaching force changed at both the primary and secondary levels. At the primary level, the proportion of better qualified teachers was larger at the end of the decade than at the start. At the secondary level, the proportion of graduate teachers declined steadily, but the teaching force and the school administration became more Zambian.

Apart from the improvement in the quality of teachers at the primary level and from the benefits arising from having a larger proportion of Zambian staff, these features probably contributed to deterioration in examination performance.

The Grade 7 Primary School Examination

The decisions about which pupils proceed to secondary school are based exclusively on the results of the grade 7 examination in six papers: English, social studies, mathematics, science, Special Paper I (verbal and numerical reasoning), and Special Paper II (spatial reasoning). The examinations are all of the pencil-and-paper objective type. They are computer marked and for selection purposes the scores on the six papers are standardized, each to a mean of 100 and standard deviation of 15. The unweighted combination of the standard scores from the six papers constitutes a candidate's selection examination score. The minimum score that pupils must obtain to secure admission to secondary school determines the

cutoff point. This is fixed by reference to the number of secondary school places in grade 8, with account being taken of whether these are in boarding or day schools and whether, in boarding schools, they are for boys or girls. Account is also taken of the number of secondary school places in each of the country's nine regions. The result is that there is a national cutoff point and separate cutoffs for the sexes and for the regions.

Note that although end of year examinations are also held in Zambian languages, and some form of testing occurs in practical subjects, the results of these examinations are not taken into account in the selection procedure, but are used for certification purposes only. Despite public affirmation of the importance of preserving Zambia's cultural heritage and of practical activities in schools, the message that is communicated to pupils and their parents is that these areas are less important than bookish, academic topics because it is only the latter that contribute to the vital decisions about who is to go on to secondary school.

Considerable care is exercised in designing and setting the grade 7 papers. Special panels consisting of school inspectors, personnel from the teacher training colleges, and senior teachers prepare the questions. Another panel reviews the questions. A selection of those deemed suitable is used in a pilot test, and the results are carefully analyzed. The questions for the national examination are then selected. The format of the examination has remained unchanged since the early 1970s. Despite the financial problems, the logistics of printing, administering, and marking the examination have been attended to successfully each year. Although the printing costs alone had risen to over K777,000 by 1985, funds to meet these costs have never been lacking. At times, allegations of malpractice in the administration and supervision of the examinations have surfaced, and sometimes the results from certain schools have had to be nullified (and on at least one occasion, from an entire educational region). Basically, however, the examination is administered carefully and conducted honestly.

The great weakness of this examination is that it pays more attention to what pupils can remember than to what they can do or how well they can reason. Moreover, the questions are not overly concerned with experiences or situations that are directly relevant to rural life or to life in the high density areas where most of the urban children live. No real attempt is made to probe whether pupils have grasped important concepts. In addition, no questions are set that require essays or constructive writing, so that a whole broad area of literacy skills is not assessed.

An examination of this type clearly promotes very bookish and superficial knowledge. It stimulates a type of teaching that emphasizes drilling pupils in factual knowledge and that promotes passive acceptance and reproduction of information as the ideal. It does not encourage teachers to set about developing in their pupils the ability to think independently and flexibly and to "find their bearings among problems as they arise" (United National Independence Party 1985). The encouragement that this type of examination gives to rote learning of what is frequently trivial, irrelevant, and sometimes worthless information, has serious consequences in the later life of the pupil.

The 75 percent of children who leave school at this stage are not adequately equipped with literacy, numeracy, and practical skills, or with the knowledge to support their attempts to find a place in the adult world. The minority who proceed to secondary school have a poor foundation on which to base their future learning. They are weak in the use of language; they are limited in their ability to deal with concepts in science, social studies, and mathematics; they frequently find the mechanical aspects of writing difficult; and they are slow and uncertain in

dealing with simple numerical computations. In addition, they enter secondary school armed with the conviction that teaching consists of the teacher talking and giving notes and that learning is the student's ability to regurgitate what the teacher has provided. Quite understandably such secondary school students tend to perform at a mediocre level, both in school examinations and later at the tertiary level.

While laying the blame for everything at the door of the primary school examination system is excessive, it would nonetheless be legitimate to ask whether some of the lack of initiative, flexibility, organizational ability, and analytic competence widespread among Zambia's middle and lower-level management might not be due in part to the unimaginative methodology of primary school teaching that has developed in response to the demands of a wholly unsuitable examination.

Performance in the Grade 7 Examination

Despite the unsatisfactory nature of the grade 7 examination, it is worth determining whether performance has varied as a function of the economic situation, and in particular, whether performance has been affected by the reduced availability of teaching materials. This is an important practical question, since at least one aid agency proposes to use grade 7 examination performance as an index for measuring the success, in learning terms, of its support for the supply and distribution of educational materials (FINNIDA 1984).

To examine performance we must review the raw scores in the various examination subjects over a period of time. Data are available for seven of the years in the period 1977-86. Unfortunately, tapes containing the data for 1978, 1980, and 1983 are no longer available in usable form. Note that because we are dealing with scores coming from more than 100,000 candidates, even small differences can emerge as statistically significant. In most of the cases that will be discussed, a variation of 0.1 in mean values will indicate a difference significant beyond the 5 percent level. While such differences are interesting, it is more instructive to consider the trend in performance as it has manifested itself over the years than to concentrate on small annual differences.

Table 12.1 shows the means of the raw scores for the six selection subjects for each of the seven years available. Clearly, performance in 1984 and 1985 was not up to the same level as in previous years. Across all seven years, the lowest mean scores in English, mathematics, and Special Paper I were obtained in 1984, while the lowest scores in the remaining three subjects, social studies, science, and Special Paper II, were obtained in 1985 (although this year had the highest mean score in English). The highest mean scores in social studies, mathematics, science, and Special Paper II were all obtained in 1977. For the years in between, 1982 seems to approximate more closely to the pattern of 1984 and 1985, whereas 1979 and 1981 seem to belong more closely with 1977. This is seen more clearly by considering the rank order of the means across years. If these ranks are considered as weights and summed, they show that 1977-1981 stand together as superior in overall performance to 1982-1985. A remarkable upturn, however, appears in 1986, with performance being slightly superior to that of 1977.

The foot of table 12.1 shows the years when those taking the grade 7 examination would have entered grade 1. Clearly the 1971 cohort, which completed in 1977, would have passed through primary school before the worst effects of the financial difficulties were felt. Those who entered grade 1 in 1973 and 1975 certainly passed

Table 12.1 Secondary Selection Examination, Means of Raw Scores, 1977-86

Paper	1977 Mean	1977 Number of Candidates	1979 Mean	1979 Number of Candidates	1981 Mean	1981 Number of Candidates	1982 Mean	1982 Number of Candidates	1984 Mean	1984 Number of Candidates	1985 Mean	1985 Number of Candidates	1986 Mean	1986 Number of Candidates
English														
Boys	38.3	76,815	38.6	87,204	40.5	91,256	37.5	93,547	37.2	103,191	41.4	107,820	38.6	104,906
Girls	34.6	43,730	35.4	52,095	36.2	55,318	33.5	57,825	33.2	66,601	38.0	70,667	35.3	71,767
Both sexes	36.9	120,545	37.4	139,299	38.9	146,574	35.9	151,372	35.6	169,692	40.0	178,487	37.3	176,673
Social Studies														
Boys	33.7	76,815	27.9	87,203	30.9	91,221	28.5	93,520	29.9	103,187	25.6	107,813	30.7	104,903
Girls	28.5	43,730	22.7	52,090	25.0	55,288	23.4	57,791	24.3	66,498	21.5	70,660	26.3	71,758
Both sexes	31.8	120,545	26.0	139,293	28.7	146,509	26.6	151,311	27.7	169,685	24.0	178,473	28.9	176,661
Mathematics														
Boys	40.7	76,815	35.8	87,211	38.0	91,248	38.8	93,538	35.8	103,197	36.0	107,782	40.3	104,884
Girls	36.4	43,730	31.0	52,087	32.5	55,321	33.3	57,841	30.2	66,482	31.8	70,652	35.9	71,744
Both sexes	39.2	120,545	34.0	139,298	35.9	146,569	36.7	151,379	33.6	169,679	34.3	178,434	38.5	176,628
Science														
Boys	32.9	76,815	30.5	87,203	31.6	91,246	27.0	93,521	29.1	103,192	25.2	107,779	32.1	104,878
Girls	27.6	43,730	25.7	52,085	26.1	55,320	23.5	57,820	24.3	66,477	22.2	70,648	27.4	71,739
Both sexes	31.0	120,545	28.7	139,288	29.5	146,566	25.7	151,341	27.2	169,669	24.0	178,427	30.2	176,617
Special Paper I														
Boys	34.4	75,473	34.9	86,567	36.1	90,604	34.8	93,430	34.1	102,891	35.3	107,513	36.1	104,632
Girls	31.2	42,838	31.6	51,778	32.2	55,019	31.0	57,741	30.4	66,36[illegible]	31.8	70,566	33.[illegible]	71,660
Both sexes	33.3	118,311	33.6	138,345	34.6	145,623	33.3	151,171	32.6	169,255	33.9	178,079	[illegible].8	176,292
Special Paper II														
Boys	38.9	75,473	37.1	86,542	37.2	90,552	33.4	93,450	32.[illegible]	102,871	28.3	107,504	38.1	104,608
Girls	35.8	42,838	33.6	51,762	33.3	54,979	29.5	57,764	29.9	66,354	26.3	70,539	35.1	71,634
Both sexes	37.8	118,311	35.8	138,304	35.7	145,531	31.9	151,214	32.3	169,225	27.5	178,043	36.9	176,242
Year of entering grade 1	1971		1973		1975		1976		1978		1979		1980	

Source: Educational Systems, Ministry of Finance.

through the schools during the years of hardship, but possibly they were sheltered from the worst effects of the shortages by the continued availability in schools of materials from earlier years. But there is a strong suggestion that those who entered grade 1 in later years were strongly affected by some circumstances that brought about a deterioration in their performance by comparison with that of earlier years. Data for the coming years will be needed to see whether the improvement shown in 1986 is being maintained. It is too early to expect that the distribution of textbooks, with FINNIDA aid, would have had any noticeable effect since these books were issued to schools only during 1986. But there is some possibility that SIDA's intervention in making available exercise books and desks has contributed to the improved performance.

A remarkable feature of the grade 7 examination results is the consistency with which boys have performed better than girls. This holds true for all six papers, for each of the years for which data is available, and for each of the nine educational regions. Moreover, the differences are substantial, ranging from 1.5 to 7.2 points, with an average of 3.9 at the national level (table 12.1). The difference is greatest in social studies (4.5 average) and mathematics (4.4 average) and least in the special papers (3.3 in each). This lower level of performance by girls affects the selection for secondary schools when it is necessary to take a lower cutoff point for girls. This ensures that girls go forward in sufficient numbers to secondary school and beyond, but does not address the more fundamental issue of why girls perform so differently from boys. The practice of admitting girls to secondary schools with grades that would not warrant the admission of boys can enshrine expectations that girls cannot perform as well as boys. This is harmful to the self-image of girls.

Studies show that performance is frequently related to expectations (Rosenthal and Jacobson 1966; Burns 1979). In a recent study in the Eastern Province of Zambia, Serpell (1987) found that primary school teachers appear to define the goals of education differently for boys and girls. They emphasized the acquisition of literacy and skills for the local economy for boys, whereas for girls, they viewed the principal benefit of primary education as the acquisition of skills and knowledge for domestic use. These expectations and perceptions very likely derive from assumptions about differential sex roles in society. Such assumptions are unlikely to change, except very slowly and by means of increasing attention to the education of girls and to their advancement to careers and occupations where hitherto they have been unrepresented. But whatever the origins of the problem, girls clearly form a disadvantaged school group, both in terms of numbers and in terms of performance.

A second remarkable feature of the grade 7 examination results is the way in which performance in the Copperbelt was notably below that of all other regions in almost every subject: English, social studies, science, mathematics, and the verbal reasoning paper. The only subject in which the Copperbelt did not regularly have the lowest score was in Special Paper II (spatial reasoning paper). As was the case with differences between boys and girls, the size of the mean difference is substantial: never less than 1.6 points below the national mean. A significant point may be that four of the subjects involved are ones in which regular classroom teaching takes place, while the one subject in which the Copperbelt was not the lowest performer is one of the two ability papers in which no formal teaching is given (although there is undoubtedly some coaching). The Copperbelt is one of the regions that experiences tremendous population pressure on primary school facilities. In 1984, Kitwe was able to enroll only 82.6 percent of the relevant age group and Ndola 75.8 percent, while at the grade 1 level neither city was able to admit more than two-

thirds of the eligible children. This pressure has lead to serious overcrowding in classrooms. The Copperbelt is also the region with the longest history of double sessions and the most extensive use of classrooms for triple shift purposes. These factors may have combined to make the performance of the Copperbelt students poorer than that of students elsewhere in the country. Clearly it is a matter worth examining in greater detail, since the implications for educational provision are grave, especially when the school-aged population is increasing rapidly.

Performance in the Junior Secondary School Leaving Examination

Obtaining good data about performance in the junior secondary school leaving examinations (the JSSLE) is difficult, whether by year or by subject. The marking of the examination is manual, for some 50,000 candidates in a wide variety of subjects. The marking is also decentralized. There do not seem to be any central records to show the characteristics of the raw scores. Examiners' reports refer to adjustments made to raw marks, but it is clear that these are made on an impressionistic basis (which, be it said, often draws on the fruit of long and valuable experience). Students may take the examination after various modes of study: as full-time students from secondary schools, as students enrolled with the National Correspondence College (for evening class, correspondence, or supervised study group work), or as private candidates. Except in isolated instances, the records do not disaggregate the results by mode of study; indeed, no consolidated records are kept that would enable this information to be gathered. Thus, for any one year one has no way of knowing whether one is dealing with the results from school candidates or with those that include external candidates of various kinds. This uncertainty should be borne in mind when noting the performance in this examination since 1975.

This being said, it would appear that the passing rate in the JSSLE over the years 1975-84 averaged 60.6 percent (table 12.2). The data that are available do not allow comparisons to be made between the performance of boys and girls in recent years, but for the early period (1975-78) 68.7 percent of the boys obtained full certificates, whereas the figure for girls was only 43.1 percent. This large difference has its origins, of course, in the difference in performance already noted in the grade 7 examination and in the cutoff point for girls entering secondary school being lower than that for boys.

Because examiners' reports give information on adjusted marks only, little meaningful comment can be made on the year by year performance in individual subjects. However, since 1980, the examiners have tended to speak about the more frequent need to adjust the marks upward. Thus, the chief examiner in geography remarked in 1980: "A considerable amount of moderation was necessary. This was partly due to a lower standard of performance in this examination than in 1979."

The results of external (nonschool) candidates are available for eight of the ten years 1975-84. The records show that for these years only 10,005 candidates passed out of a total of 110,917, giving a pass rate of only 9.0 percent. Although some improvement has occurred in recent years, clearly the pass rate of external candidates is low. The point is raised here because of the tremendous waste of resources, including valuable teacher time for marking, involved in mounting an annual examination for up to 19,000 candidates, of whom fewer than 2,000 are likely to pass. Neither the high failure rate nor the fees deter individuals from submitting themselves to this ordeal. The fervor with which external candidates devote themselves to examination attempts illustrates the extent of the paper qualification syndrome in Zambia.

Table 12.2 Junior Secondary School Leaving Examination Results, 1975-84

(a) Internal (School) Candidates

Year	*Sex*	*No. of candidates*	*No. obtaining full certificate*	*Percentage full certificate*
1975	Boys	10,425	7,199	69.1
	Girls	5,393	2,480	46.0
	Both sexes	15,818	9,679	61.2
1976	Boys	12,350	8,454	68.5
	Girls	6,183	2,558	41.4
	Both sexes	18,533	11,012	59.4
1977	Boys	13,897	9,939	71.5
	Girls	7,198	3,201	44.5
	Both sexes	21,095	13,140	62.3
1978	Boys	14,976	9,879	66.0
	Girls	7,744	3,195	41.3
	Both sexes	22,720	13,074	57.5
1979	No records available			
1980	Both sexes	25,580	16,069	62.8
1981	Both sexes	24,479	14,669	59.9
1982	Both sexes	26,799	16,055	59.9
1983	Both sexes	28,449	16,583	58.3
1984	Both sexes	31,267	19,857	63.5

(b) External Candidates

Year	*No. of candidates*	*No. obtaining full certificate*	*Percentage obtaining full certificate*
1975	6,918	616	8.9
1976	10,691	463	4.3
1977	13,306	1,051	7.9
1978	11,655	645	5.5
1979	14,085	1,140	8.1
1980	No records available		
1981	18,021	1,643	9.1
1982	No records available		
1983	17,248	1,627	9.4
1984	18,993	2,820	14.8

Sources: Education ministries (1975-78), *Educational Statistics*; Computer Centre, University of Zambia.

Even after examiners have made upward adjustments in individual subjects, only some three-fifths of the candidates pass the JSSLE. If the secondary selection examination is successful in selecting the best 20 percent of primary school pupils to go on to secondary school, one would expect a superior standard of performance. The success rate in the JSSLE is depressed by the girls' performance, but even considering only the pass rate for boys, the standard of performance is low. Thus, of 100 boys who enter grade 1 in primary school, only about 20 proceed to secondary school, and of these only about 13 will receive a full Junior Secondary Leaving Certificate.

Any system that results in such waste must be flawed. The problem could be in a number of areas. It could be in the selection examination's failure to select the best primary school students; it could be poor teaching in junior secondary classes; it could be in the JSSLE examination itself. Because performance has always been low, the fault cannot lie with the financial problems, but it is strange that in a period of financial difficulty, the government did not attempt to arrest this waste, which as will be seen below, has large financial dimensions.

The JSSLE performance in mathematics can only be termed lamentable. Even after upward adjustments of the marks, only half of those who sat for mathematics between 1978 and 1984 reached the passing standard. The results also show that performance is getting worse, since only 49.3 percent of the candidates passed in 1982-84 whereas 52.2 percent had passed in 1978-80. While this deterioration might tempt one to attach some of the blame to the shortage of books and mathematical instruments, this is not the whole story, since performance from the outset was low. The difficulties experienced with mathematics and science have deeper roots than the shortage of teaching materials. These roots probably go back to the first years of primary school, when children find it difficult to grasp and internalize the concepts involved and to master the basic computational techniques. This may be partly because of the language that is used for instruction, partly because of the type of rote learning that the secondary selection examination fosters, and partly because the teachers themselves are unable to deal expertly with the concepts and techniques employed.

Imaginative and stimulating teaching in the junior secondary classes would no doubt help remedy the situation, but these classes are taught by diploma holders, almost all of whom trained as such because they did not have the qualifications needed for university entry. Very few of these would be among the 10 percent or so who obtain the higher levels of 0-level passes in mathematics. Zambia realizes that it is caught in a vicious circle where those with comparatively low qualifications, and possibly even a record of failure, become the teachers of the next generation, and thereby help to perpetuate an unacceptably low level of performance. If it is to break out of this situation it will have to take radical measures to ensure that primary teachers themselves gain confidence in their understanding of mathematics and in their ability to communicate this understanding to children. This cannot be achieved without the commitment of resources for preservice and in-service training, curriculum materials, and trainers.

Performance in the School Certificate Examination

Of the 109,641 candidates who sat for the School Certificate Examination between 1975 and 1985, a total of 68,366 or 62.4 percent passed fully and obtained a School Certificate (table 12.3). A further 39,129 or 35.7 percent succeeded in obtaining 0-level passes in one or more subjects, but did not pass the full School Certificate

Examination. The balance, 2,146 or 2.0 percent of the candidates, failed completely. There has been a very slight tendency for performance to improve: during 1975-79, an average of 61.2 percent of the candidates obtained a full School Certificate, while during 1981-85 this average rose to 63.3 percent.

Table 12.3 School Certificate Performance, 1975-85

Year	No. who sat examination	Obtained full school certificate		Obtained one or more O-levels, but not school certificate	
		(no.)	(percentage)	(no.)	(percentage)
1975	6,984	3,956	56.6	2,008	28.8
1976	7,359	4,589	62.4	2,715	36.9
1977	8,071	5,119	63.4	2,901	35.9
1978	8,840	5,482	62.0	3,259	36.9
1979	10,233	6,226	60.9	3,891	38.0
1980	10,449	6,460	61.8	3,875	37.1
1981	11,134	6,835	61.4	4,120	37.0
1982	11,136	6,504	58.4	4,499	40.4
1983	11,315	7,128	63.0	4,053	35.8
1984	11,944	7,846	65.7	3,982	33.3
1985	12,176	8,211	67.4	3,826	31.4
1975-85	109,641	68,366	62.4	39,129	35.7

Sources: Education ministries (1975-78), *Educational Statistics*; Computer Centre, University of Zambia.

Let us now consider performance in some individual subjects. Performance in English language remained uniform throughout the decade: each year around 46 percent of the candidates obtained the equivalent of an O-level pass. The percentage has remained steady despite the greatly increased number of candidates, the dearth of teaching materials, and the decreasing proportion of graduate teachers in secondary schools. However, a slightly different picture emerges from a consideration of the raw scores, before examiners have adjusted the marks and decided on passing grades and standards. These scores show that in overall terms, performance in English language has deteriorated somewhat: the mean has declined and fewer candidates are obtaining high marks than in earlier years.

Mathematics and science results are considered in some detail because of Zambia's continued emphasis on the future need for personnel with scientific qualifications. In evaluating the results we must recall that the total sample from which the examination candidates are drawn represents, theoretically, the best 10 percent of Zambian students, or the top half of those who passed the JSSLE. Moreover, the small numbers actually taking physics and chemistry are indicative of the streaming of the more promising students into a science-oriented curriculum and of the fear that students feel about choosing what is regarded as a difficult option.

The depressing results in mathematics obtained in the JSSLE are mirrored in the School Certificate Examination. Again, the pass rate is only about 50 percent, with only about one-third of the candidates getting the equivalent of an 0-level pass. However, some improvement is noticeable from 1982, with significant gains in 1985 and 1986. These gains occurred at all levels of passing but were most pronounced at the upper performance levels. The improvement in recent years is also shown by the increase in the mean of the raw scores, though these demonstrate an astoundingly wide variability in performance.

Performance in physics, chemistry, and biology deteriorated across the period 1975 to 1986. The decline was particularly noticeable in physics. Examination of the raw mean scores suggests that performance in physics and chemistry continues to decline, but that the decline in biology has been arrested, at least for the moment. Candidates who take the relatively new subjects of combined science or science are more successful than their predecessors were in the subject physical science (the predecessor of combined science). In agricultural science, the overall performance in 1983-86 was very much superior to that in 1975-78, with almost 50 percent of the candidates gaining 0-level passes in the later period compared with less than 25 percent in the earlier period. Nevertheless, there has been a drop of some magnitude in the weighted mean raw score for 1984-85 when compared with that for 1982-83.

The gradual deterioration in science results has occurred in unison with other creeping changes in the school situation: the slow disappearance of science materials and textbooks; the gradual deterioration in the condition of laboratories and their fixtures; the steady increase in class size; and the reduced proportion of graduate teachers of science in the upper classes. All these factors collectively are probably a major cause of the declining performance. In turn, all these factors can be linked to the country's economic constraints, although these are not solely responsible for their emergence. For example, the upkeep of laboratories is as much a question of organization and maintenance routines as it is of funds.

The performance of boys and girls continues to differ substantially in the School Certificate Examination. In almost every subject investigated the percentage of boys obtaining an 0-level pass was higher during 1980-86 than the percentage of girls, and the percentage of boys who failed entirely was lower than the percentage of girls. Only in English literature was the girls' performance consistently superior to that of the boys. This shows that girls can perform as well as boys. But it also makes one ask why girls do worse than boys in subjects such as biology, bible knowledge, and English language, which are traditionally associated with equality, if not superiority, on the part of girls. The answer to this question may lie in the different expectations teachers hold for girls and boys, as has been noted. It may also lie in the examinations themselves, which may be unintentionally biased against girls.

The general decline in examination performance raises an economic question that is seldom considered. Only some two out of three candidates complete the School Certificate successfully. In financial terms, the failure of so high a proportion of grade 12 students to obtain a full School Certificate represents a considerable loss. If the two years they spent in the senior secondary school are counted as wasted, then, using the unit costs given in table 5.5, some K13.2 million (at 1977 prices) were wasted over the period 1977-84. This grim picture becomes even more stark if the same procedure is applied to those who went through the junior secondary school and did not obtain a full junior secondary certificate. Here, because the number is so much larger and the students have remained at school for three years without obtaining their objective, the effect is very much greater: a

colossal K47 million wasted. Thus, a total of about 36 percent of the investment in secondary education over the years 1977 to 1984, years when the economy was in grave trouble, did not attain its desired objective. Might it not have been more prudent to use the same resources spread over a smaller number of students, in better equipped, maintained, and staffed institutions, in the hopes of achieving better results?

The Examination Pyramid

A mission that visited Zambia in 1963 described the education pyramid as they found it at that time in these terms:

> Of every 100 Africans who start primary school, 82 would reach the fourth year, 42 the sixth and 21 would complete their full primary course. Of this 21, only six would find a place in secondary school, of them only three would enter a senior secondary form and only two would end up with a school certificate (UN-ECA-FAO 1964, p. 101).

Although the position has greatly improved, the current examination pyramid essentially has the same shape: of every 100 children who start primary school, 81 enter grade 5 and complete their full primary course. Of these 81, 18 find a place in secondary school and 12 pass the Junior Secondary Leaving Examination. Only 9 enter a senior secondary class and only 6 of these end up with a full School Certificate.

If one continues the pyramid to consider the numbers accepted at the university, it becomes slender, almost to the point of vanishing: approximately one out of every ten successful candidates in the School Certificate Examination has been offered a university place in recent years. This means that of every 200 children who enter grade 1, only 1 is likely to enter the university 12 or 13 years later. Clearly, School Certificate holders, and especially university entrants, are a very small and, in educational terms, a very privileged group.

Overview of Examination Performance

The information presented in this chapter shows that examination performance has not been satisfactory since 1975. However, it is to the system's credit that performance did not deteriorate even more when numbers increased so rapidly, supplies were so difficult to obtain, and the professional level of teachers declined so extensively. Nonetheless, performance remains at a very low level of efficiency and indicates considerable financial waste. The performance in mathematics and science gives special cause for concern. While considerable improvement in mathematics has been observed for the most recent years, the performance in science is clearly deteriorating. This does not augur well for efforts to base development on the promotion of science and technology.

13

The Teacher During the Years of Economic Difficulty

Teachers are key educational figures who have been affected by the economic decline in both their incomes and in the discharge of their professional responsibilities. This chapter will present information on the number and distribution of teachers at the primary and secondary levels, their qualifications, professional preparation, and experience. It will then examine teachers' salaries and how these have developed during the past decade, in absolute terms and relative to salaries in other areas. A related issue that deserves special consideration is the attrition of teachers, above all at the secondary level. Finally, the chapter will endeavor to evaluate how teachers have reacted to the effects of the economic decline.

Primary School Teachers

Many of the issues involving primary school teachers are similar to those involving secondary school teachers, but to clarify the situation for each group, they will be discussed separately except for certain specific issues.

The Preparation of Primary Teachers

Trained primary teachers undergo a two-year training program in one of Zambia's ten primary teacher training colleges. Nine of these colleges have an enrollment capacity of 300 to 350 students each, while the remaining one can enroll 600 students. Students are prepared for teaching across all the years of primary school, from grade 1 to grade 7, although up to 1974 some were trained for teaching in grades 1 to 4 only and others for grades 5 to 7. Each college takes both male and female students for training as general teachers, and women for training as domestic science teachers. The proportion of females among those training to be general teachers is somewhat less than 40 percent.

The annual output from the colleges now stands at about 1,800, having risen from some 1,200 in 1977. This output falls short of the need for trained teachers. Hence plans were developed to expand several colleges, but due to the shortage of funds, only K2.6 million was actually spent out of a planned capital development program of K12 million.

The quality of teachers the colleges produce depends on the quality of the student intake, the quality of college staff, the availability of teaching resources, and the suitability of the curriculum. Formerly, the minimum entry qualification for students was a pass in the JSSLE. In practice what happened was that the best of those completing junior secondary school proceeded to senior secondary school, and candidates for teacher training were selected from among those unable to continue at secondary school. However, as it became increasingly difficult for students completing senior secondary school to find suitable training or employment opportunities, especially those with mediocre examination results, the colleges began to receive applications from candidates who had completed senior secondary school or held School Certificates. This led in 1983 to a formal raising of the entry qualification to successful completion of secondary school, with 0-level passes in English language and mathematics or a science subject.

All candidates in the training colleges now hold a School Certificate, but the specific 0-level requirements are not yet being met. In a parallel development, the authorities have given increasing priority to the admission of suitably qualified untrained teachers who have had one or more years of teaching experience. More than one-third of the trainees in 1984 were untrained teachers, and this group is likely to increase. The improvement in the formal educational background of the trainees and the experience that the untrained teachers bring with them to their training program are expected to improve significantly the academic and professional quality of the output from the teacher training colleges. The untrained teachers are also expected to show more commitment to a teaching career after training. Already the colleges are noting informally that their students are much more receptive today than they had been some years ago, quicker to learn, and more enthusiastic about teaching as a career.

The Staffing of the Teacher Training Colleges

Significant developments have taken place in the composition of the lecturing staff in the teacher training colleges (table 13.1). The number of graduates has more than doubled and their proportion has increased slightly. The proportion of college staff with qualifications less than 0-level has decreased, while the number and proportion with 0-levels have increased significantly. All teaching personnel in colleges are now trained. No information is available on the experience of staff in the training colleges other than the fact that all would have been teachers, the majority in the primary schools. Nevertheless, the staffing situation at the colleges is not fully satisfactory. In 1984, only 35 percent of the staff had educational qualifications at the same level as or superior to those of the students they were required to train. Clearly this situation must be remedied by strenuous efforts to upgrade college staff academically.

Despite the stress on the colleges' staff development needs in the Third Development Plan, concrete action has not materialized, probably because the education ministry failed to develop an appropriate training scheme. Possibly this failure was caused by resource constraints; however, a more likely cause was the ministry's lack of planning and managerial capacity. A noticeable vacuum exists between plan formulation and execution. Once a general plan has been approved, steps are not taken to allocate responsibility within the ministry for the implementation of specific plan elements.

Table 13.1 Staffing of the Primary Teacher Training Colleges, 1976-84
(number of college staff)

Item	*1976*	*1978*	*1980*	*1982*	*1984*
Educational Qualifications:					
Graduate	34	49	61	58	71
School certificate	57	45	35	58	53
Some O-levels	100	165	166	154	192
Less than O-levels	38	31	51	42	39
Professional Qualifications:					
Trained	175	222	287	312	354
Untrained	54	68	26	0	1
Sex:					
Male	186	232	253	260	300
Female	43	58	60	52	55
Total	229	290	313	312	355

Sources: Education ministries (1976, 1978, 1980), *Educational Statistics*; Ministry of Higher Education records.

The Resource Base of the Teacher Training Colleges

If the colleges are to perform their duties effectively, they need to be well equipped with teaching aids, books (including the textbooks actually used in the schools), and equipment for teaching elementary science. Because of their limited resources and their recognition that the trainees will eventually teach in schools that are virtually devoid of teaching materials and science apparatus, the colleges have displayed great ingenuity in using locally available materials to support their training activities. Their efforts are being supplemented through the FINNIDA-supported scheme to train teachers in practical subjects and by the SIDA-supported assistance toward the development of resource centers and production activities. However, the allocation the colleges receive to purchase teaching materials, science equipment, and library books appears to be quite inadequate to meet their needs. The total expenditure on student requisites for all teacher training colleges, secondary as well as primary, was K234,271 in 1985. This was just K48.65 per student or, at 1975 prices, less than K11, that is, only about one-third of 1975 and 1976 expenditures. Per capita expenditure on teaching items between 1982 and 1985 fell, on average, to below 60 percent of that between 1975 and 1979. Thus, spending on teaching materials for the colleges was severely affected by financing constraints.

A comparison of expenditures on primary teacher training with expenditures on secondary schools reveals that during the years of shrinking resources the government made greater efforts to maintain the level of expenditure for teaching materials in the secondary schools. This suggests that when resources are tight, the secondary system is given preference over the primary system in the allocation of disposable funds.

The Curriculum of the Teacher Training Colleges

Developments in the college curriculum must match those in the primary school curriculum. However, these cannot be achieved without the financial means to produce the necessary materials, disseminate the textbooks, support an extended and adequately supervised period of practice teaching, and retrain the teachers in the schools and the tutors in the colleges. However, some aspects of the teaching in colleges do not have the same heavy reliance on funds, for example, the structure of the college curriculum. The colleges have rigidly organized this in a manner that provides little time for private, independent study and does not encourage the use of initiative or innovative teaching techniques. Trainees have a very full, carefully timetabled day, which they spend largely being taught the contents and methodology of handbooks. The outcome is that the trainees develop an unimaginative teaching style that emphasizes factual knowledge, memorization, and convergent thinking. Several of the problems identified at higher levels of education, and in particular the problem of lack of flexibility and originality in university students, may be traced back to this form of teacher training, and its subsequent perpetuation in the way primary school students are taught. The rigid, conservative training program in the colleges is closely linked to the college tutors' lack of knowledge and confidence, arising from their own low qualifications. There is an urgent need to improve these through a percipient and coherent staff development program. Until this is undertaken, the curriculum and methodology of the training colleges will remain in the educational doldrums.

Size and Qualifications of the Teaching Force in Primary Schools

Along with the expansion of primary provision, the number of teachers grew from 18,096 in 1975 to 29,841 in 1986, an increase of 65 percent. During the same period the primary school enrollment grew from 872,392 to 1,365,926, an increase of less than 57 percent. This led to an improvement in the pupil-teacher ratio from 48.2 in 1975 to 45.8 in 1986. Similarly, the number of trained teachers grew from 14,408 in 1975 to 20,770 in 1983, an increase of 44.2 percent. This also was higher than the rate of increase of enrollments during the same period, thus the number of pupils per trained teacher decreased from 60.5 in 1975 to 57.5 in 1983. Not only are more teachers trained, but an increasing proportion is more highly educated. This proportion will continue to increase as the colleges' new admissions requirements take effect. Nevertheless, in 1983 about 10 percent of the trained teachers in primary schools, some 2,000 teachers in all, had never done any secondary studies.

The number of assistant and untrained teachers varies from year to year, but there has been some reduction in the proportion of such teachers, from 20.4 percent of the total primary teaching force in 1975 to 17.2 percent in 1983. Kelly and others (1985) found that 95 percent of the untrained teachers had completed the full secondary school program, and that about half of them had obtained the full School Certificate. They were mostly confined to teaching in grades 2 to 6. More than half had participated in some form of orientation program organized by their district education officer. The assistant teachers were all female. Their educational level was uniformly low: none had gone beyond the junior secondary level, while 61 percent had completed no more than grade 7. However, a recent decision was taken to phase out this position altogether.

Female Teachers

The teaching force is predominantly male, but the proportion of female teachers is rising steadily and reached 40 percent of all trained teachers in 1983. Female teachers are distributed unequally throughout the country, with the greatest concentration in Lusaka, where they constituted over 60 percent of the total teaching force in 1981, followed by the line-of-rail regions. The qualifications of the female teachers who are found in the line-of-rail regions also tend to be higher than those found elsewhere. In 1981, more than 80 percent of the female teachers in Lusaka and more than 70 percent of those in the line-of-rail regions had had two years of training on top of a minimum of two or three years of secondary school. By contrast, in the rural areas the proportion with similar qualifications ranged between 50 and 56 percent. The balance of female teachers in these regions either had a primary education plus two years of training or were untrained and assistant teachers.

The Recruitment and Use of Teachers

The rapid growth in the number of teachers, especially the more expensive trained teachers, has inevitably put severe pressure on the budget for the primary schools. Chapters 5 and 6 examined how this has affected the distribution of resources, but we must still determine whether such expansion was necessary, and whether we can expect similar growth in the future. All teacher trainees are guaranteed employment as teachers upon completion of their training. The large number of untrained teachers who continue to be employed and the relatively high pupil-teacher ratios suggest that a policy of employing the majority of training college graduates should continue, but much depends on the norms that are adopted for school staffing. One such norm is the pupil-teacher ratio. The government often invokes the ratio of 40 pupils per teacher as desirable, but has shown some willingness to allow this to be extended to 45. The application of this ratio to the 1986 enrollment suggests a shortfall of over 500 teachers. But a committee inquiring into the size of the civil service advocated a different norm based on the number of classes in the upper and lower primary levels. The committee recommended that

> the optimum staffing standards for each Primary School...be based on the following:
>
> (a)that each upper-primary class be manned by one full-time teacher;
>
> (b)that two lower-primary classes be manned by one full-time teacher (GRZ 1985a, p. 637).

The application of this norm to the 1986 pattern of class distribution would suggest an overstaffing of 7,074 teachers.

The government rejected the proposal of its advisory committee (GRZ 1985b), although it continues to use the proposed norm as the basis for planning. The concern is that the lower primary curriculum requires no more than 17.5 hours of actual classroom teaching per week, with a further 1.5 hours or so for organization, assembly, and breaks. Hence a teacher in the lower primary sector who had only a single class would be occupied for no more than 19 hours a week together with whatever time the teacher devotes to lesson preparation and professional self-improvement. Experts believe this is an unjustifiably light load, especially when such severe financial constraints are present. This issue is a crucial one that the

government must address if Zambia is to gain a greater measure of control over the budget for primary schools and is to succeed in reducing the proportion of this budget needed for inescapable salary commitments.

Attrition Among Primary School Teachers

The wastage rate at the primary level has declined in recent years, from 3.5 percent in 1976-79 to less than 1 percent in 1980-83. Unlike at the secondary level, the number of students proceeding from college to the teaching profession has increased. In general, teacher loss has not been a serious problem at the primary level. The difficulty may actually run in the opposite direction: too many underqualified individuals tend to remain in the system.

Secondary School Teachers

Two groups of teachers fall into this category, those with university degrees and those with diplomas. Both will be discussed in this section.

The Number of Secondary School Teachers

Because of the colonial legacy of an underdeveloped school system, in 1964 Zambia had very few qualified Zambian secondary teachers. The few there were quickly left to fill administrative posts within the government, the mining companies, and the private sector. In consequence the secondary schools tended to be staffed almost entirely by expatriates. At the same time the schools were expanding with great rapidity. Under these circumstances one of the highest national manpower priorities established in 1967 was the production of qualified secondary school teachers. Such teachers were to be trained either by a four-year integrated degree program at the university or by a two-year diploma program at special teacher colleges.

Two colleges have been established, one in Kabwe that trains teachers in all the usual secondary subjects, and one in the Copperbelt that is responsible for training mathematics and science teachers for the junior classes in secondary schools. In addition a special institution in Luanshya trains teachers of technical subjects, while a three-year program at the Natural Resources Development College in Lusaka trains teachers of agricultural science. This college is owned and operated by the Ministry of Agriculture and Water Development and not by the education ministries. There is also a small output of teachers of art and music from a program based in the Evelyn Hone College, Lusaka. Collectively, these various institutions produce about 600 teachers a year. Table 13.2 shows the output of trained teachers from all institutions from the time of their inception to the end of 1986.

In 1985, Zambia had 234 secondary schools with 1,019 senior secondary classes and 1,958 junior classes. At a staffing ratio of 1.5 teachers per class, plus an additional 2 staff per school as administrators, the theoretical staffing needs would have been:

1,529 graduates for senior classes;
2,937 diplomates for junior classes;
468 graduates for school administration.

These staffing needs could have been met in overall numbers if all who had trained as teachers since 1969 had entered and remained in the schools. There would, however, have been a small shortfall of graduates and a considerable

Table 13.2 Output of Qualified Secondary Teachers, 1969-86

	University						*Colleges*	
	Annual output			*Cumulative output*			*Annual*	*Cumulative*
Year	*BA Ed*	*BSc Ed*	*Total*	*BA Ed*	*BSc Ed*	*Total*	*output*	*output*
1969	11	0	11	11	0	11	99	99
1970	10	0	10	21	0	21	33	132
1971	45	8	53	66	8	74	71	203
1972	31	14	45	97	22	119	102	305
1973	0	0	0	97	22	119	153	458
1974	67	22	89	164	44	208	223	681
1975	103	37	140	267	81	348	264	945
1976	101	30	131	368	111	479	351	1,296
1977	112	22	134	480	133	613	347	1,643
1978	111	47	158	591	180	771	428	2,071
1979	117	31	148	708	211	919	422	2,493
1980	161	46	207	869	257	1,126	490	2,983
1981	131	40	171	1,000	297	1,297	488	3,471
1982	135	49	184	1,135	346	1,481	383	3,837
1983	120	32	152	1,255	378	1,633	366	4,203
1984	103	27	130	1,358	405	1,763	341	4,544
1985	90	51	141	1,448	456	1,904	452	4,996
1986	128	28	156	1,576	484	2,060	508	5,504

Sources: University of Zambia (various years) *Annual Reports* and records, *Statistical Yearbook* 1971; Ministry of Higher Education (1983), *Educational Statistics*.

surplus of diplomates. The actual staffing situation in 1985 is not known, but in 1984 a total of 5,043 teachers were serving in secondary schools with a total enrollment of 125,811 pupils. This gives a pupil-teacher ratio of 24.9 to one. There were 1,570 junior secondary classes and 988 senior secondary. In theory, the schools would have needed 2,355 diplomates and 1,868 graduates, a total of 4,223. In fact they had 3,480 diplomates and 1,563 graduates, a total of 5,043. In these terms, they were actually overstaffed, but the effect was counterbalanced to some extent by the pupil-teacher ratio, which is high for the secondary level, and by the average class size of 43.3, which is also high. Clearly the secondary schools have too few graduate teachers and too many diplomates.

Changing Composition of the Secondary School Teaching Force

A remarkable change has been taking place steadily in the composition of the secondary school teaching force. In 1975, almost 57 percent of the teachers were graduates, more than four-fifths of them trained. The proportion of graduates has decreased steadily, until by 1984 it stood at 31 percent. At the same time, the proportion of graduates who trained as teachers has increased from 80.3 percent in 1975 to 96.4 percent in 1984.

The decline in the proportion of graduates has affected different schools in different ways. In government schools the proportion fell to 25.8 percent, but the grant-aided schools were able to keep their proportion considerably higher, at 42.6 percent, presumably because of the continuity of the mission personnel who own the schools and play such a large part in their staffing and management. The private schools have been the least effected and more than half their staff are graduates. About two-thirds of the graduate teachers in private schools are expatriates, but these schools are showing increasing success in attracting the services of Zambian graduates, many of them trained.

The composition of the teaching force by nationality has also changed. In 1975, Zambians constituted only 30.4 percent of all the secondary school teachers, but by 1979 Zambians constituted for the first time more than half the secondary school teaching force. Their proportion has continued to grow, so that by 1984 they formed 82.4 percent of a teaching force that was more than 50 percent larger than it had been in 1975. The rapidity with which the staff of the secondary schools is being Zambianized is due to the relatively high output from the training institutions, the more successful retention of those who enter the teaching profession, and the departure of expatriate teachers to take up better-paid appointments in other parts of Africa.

Graduate Teachers in Mathematics, Science, and English

A serious difficulty for the secondary school system is the production and retention of the required number of staff qualified in the disciplines required at the senior level, especially mathematics, science, and English. Not only do graduate mathematics and science teachers leave the system, but the university does not produce the total number of graduate teachers these subjects require. The UNDP (1986) estimated that for 1985 there was a shortfall of at least 150 science and mathematics teachers and 135 graduate English teachers.

In the absence of sufficient graduates, diplomates are teaching senior classes. A survey conducted for this report in March 1987 revealed that in approximately half the secondary schools nongraduates were heavily engaged in teaching mathematics, science, English, and geography at the senior level, but the involvement was greatest in mathematics, science, and English. There are almost no graduate teachers of agricultural science.

Deployment of two-year diploma teachers to teach at the senior secondary level does not contribute to high-quality teaching. The diplomates are trained to teach at a lower level. Moreover, they have diploma-level training precisely because they did not have the qualifications for university admission. Their position is rendered all the more difficult by the shortage of books and science equipment and the run-down state of many school laboratories. They are not prepared, by training or experience, for the many improvisations and makeshift arrangements that this situation calls for. However, responsibility for students' poor performance in mathematics and science in the School Certificate Examination is not the fault of the diplomates. The results were equally poor when graduates dominated the staff of the secondary schools. But the necessary improvements are unlikely to materialize when so many of those teaching mathematics and science at the senior level are not qualified for this task.

A number of initiatives are presently being taken to rectify this situation, prominent among them being the EEC-funded Zambia Science Teachers Education Project (ZAMSTEP). During a three-year period, this project aims to provide one

year of in-service training for 300 mathematics and 300 science teachers, all diplomates, and to upgrade a further 900 diplomates through seminars conducted during school vacations. However, this project must have been conceived without a proper evaluation of the actual number of diplomate teachers in the field. Up to 1985, the colleges had produced a total of 1,234 mathematics and science teachers. Some of these are no longer teaching, while others have already upgraded their qualifications to degree level. In late 1985, Kelly and others (1986, p. 373) estimated that there were 1,144 nongraduate teachers of mathematics and science in the secondary schools. Therefore, where ZAMSTEP will find its target group of 1,500 teachers is not clear. But apart from this detail, the undertaking is worthwhile and should prove beneficial.

Attrition Among Secondary School Teachers

The main factor that will improve the proportion of graduate teachers of mathematics, science, English, and other disciplines appears, ironically enough, to be the declining economy. The lack of other jobs is inducing more university graduates to enter the teaching profession. In addition, more of them are adopting a professional attitude to teaching, viewing it as a lifetime commitment, and not just as a stepping stone to a better paid job. The recent decline in the rate at which university graduates are leaving teaching illustrates the combined effects of these factors.

The attrition of secondary school teachers, and especially of trained graduates, was so serious in the past that several investigators examined the extent of the problem. Jackman (1977) estimated that the annual attrition of Zambian secondary school teachers, both graduates and diplomates, was 18 percent during 1969-74. The University Tracer Project (1975) showed that the wastage rate for university graduates was approximately 20 percent, but only 1 to 2 percent for diplomates. Shaw (1979) summarized the position for 1969-77 as follows:

- over one-fifth of all university trained teachers never enter teaching, whereas 87 percent of diplomates do pursue teaching careers;
- of those who enter teaching, about one-tenth leave the profession in any one year; the attrition of university graduates is about twice the total attrition rate and almost three times that of Nkrumah College (Kabwe);
- the general trend has been for a rise in both the proportion who never enter teaching (graduation loss) and the proportion who enter and then leave (active wastage) (Shaw 1979, pp. iii, 28).

However, Bardouille (1982) traced the 1976 cohort of graduates five years after their graduation and found quite a change from earlier years. Bardouille's first finding was similar to Shaw's, namely, approximately 27 percent of the trained graduates did not enter the teaching profession, but she also found that of those who had entered teaching, 92 percent stayed in the profession, and about one-third of these professed that they intended to remain permanently in teaching. Bardouille interprets this relative stability, which marks a significant improvement on the high attrition rates disclosed by Jackman and Shaw, in terms of the lack of alternative jobs: "Occupational choices are consciously conceived in light of the reality of the labour market, even though a chosen occupation may not meet the expectations of the incumbents" (Bardouille 1982, p. 65).

The change detected by Bardouille is brought out clearly by examining the number of trained graduates in the schools each year and comparing these with

what they would have been if all graduates had entered and remained in teaching. One assumption made was that all trained graduates in the schools received their qualifications at the University of Zambia, which on the basis of available figures, is a reasonable assumption.

Up to 1979, the rate of attrition of university graduates was very high, an annual average of 29.2 percent between 1976 and 1979. This figure is close to that of Bardouille. The rate dropped sharply in 1980 and continued to fall until 1983. By 1984, however, the number of trained graduates in the schools exceeded the sum of those carried forward from 1982 and those who graduated in 1983. This means that some who had graduated earlier but had not gone into teaching had now entered the profession.

By early 1984, almost half of all those who had ever graduated from the university with an education degree were actually working in the secondary schools. Bearing in mind mortality losses and those education graduates who have chosen to teach at the university or the teacher training colleges or to work within the education ministries, the proportion of education graduates who actually use their qualifications in the education field is not as low as critics make out: it is actually reassuringly high and is increasing.

For diplomate teachers the average attrition rate was 6.5 percent during 1976-79, and 4.8 percent during 1980-83. In 1984, 77.9 percent of the total cumulative output from the colleges was teaching in the secondary schools. This proportion has been dropping fairly steadily, partly because of actual losses, but partly because a significant but unknown number of diplomates upgrade their qualifications by taking degree studies, and hence "reappear" as graduates. The positive orientation of these students toward a career in teaching has probably contributed to the recent upsurge in the stability of the graduate teaching force.

For both categories of secondary teachers taken together, the attrition rate dropped from an annual average of 10.6 percent during 1976-79 to 5.5 percent during 1980-83, but the loss in relation to institutional output remains high, approximately 33 percent. Clearly, the rapid loss of secondary teachers experienced in the 1970s has slowed down. Given the slow growth of the secondary schools, the training institutions appear to be adequate to meet their needs, although having more graduates would be preferable. Although the proportion of graduates has risen since 1981, concern still remains that the schools do not have an adequate number of graduate teachers of mathematics, science, and English. The almost complete absence of graduate teachers of agricultural science deserves special mention. In 1985, Zambia had only ten such teachers, yet as far back as 1978, the School of Education began preparations for a degree program in agricultural education. The program has appeared formally in the university prospectus since 1983, but no steps have yet been taken to mount it.

The Length of Experience of Secondary School Teachers

No quantitative information is available on the length of experience of Zambian secondary school teachers, but some proxy for this can be had by examining their age structure. The average age of secondary school teachers is increasing slowly. The proportion aged 31 and over has risen from some 25 percent in 1978 to over 38 percent in 1984. This change is very likely a reflection of the decline in the rate of attrition, but clearly the staff are generally young and have not yet had the opportunity to gain much experience. However, with the reduced tendency of

secondary teachers to leave the profession, an increase in the overall experience of the teaching force must occur.

Issues Affecting Both Primary and Secondary School Teachers

Certain issues affect both primary and secondary school teachers in much the same way. The most important of these are salaries and the effect of these and the situation in the schools on teachers' morale.

Salaries

All investigations of attrition among Zambian secondary teachers have found that low salaries are the main reason for teachers leaving the profession. Other reasons include poor promotion prospects, poor housing, and communication difficulties with the employer. Sanyal and others (1976, p. 200) found that teachers' salaries were low compared to those of other professionals. In 1974, the mean salary of diplomates teaching in the secondary schools was K177 per month, whereas diploma-trained teachers who were not teaching had a mean salary of K332 per month. Similarly, trained graduate teachers received an average of K234 per month, while education graduates who were not in the teaching profession had a mean monthly salary of K399.

Table 13.3 shows the salary scales in the education sector for the period 1975-85. It reveals that salaries have grown rapidly at current prices: the 1985 entry level salary for a graduate was more than double its 1975 level; for a two-year trained teacher with a School Certificate it had increased by more than 125 percent; and for the two-year trained less qualified primary teachers it had increased by more than 14 percent.

Since 1975, no salary distinction has been drawn between the levels at which trained School Certificate holders teach. Teachers with the same qualifications receive the same salary, regardless of whether they teach in primary or secondary schools. Table 13.3 underscores the heavy reliance on formal credentials. This phenomenon is not confined to the education sector, but appears throughout the civil service and is also prevalent in the parastatal sector. Several participants in the national debate on educational reforms made strong pleas to loosen this connection, but the government took no action. As a result, incomes in Zambia are still governed by the conditions Colclough (1974, p. 465) described:

> Instead of payment by results, wages and salaries are determined largely by political, institutional or other factors which have little or no relevance to the economic realities of the economy.

As table 13.4 demonstrates, the apparent gains in teachers' salaries are completely wiped out when adjustments are made for inflation. The first part of the table shows the starting salaries corrected to 1975 prices. It shows that teachers' salaries lost 20 percent of their purchasing power between 1975 and 1980 and a further 20 percent of their 1975 value by January 1985. Thus, a teacher's 1985 salary was worth only some 60 percent of its 1975 value. Inflation during 1985 was so high that by December 1985 salaries had lost one-third of their January 1985 value. At the

Table 13.3 Education Sector Salary Scales, 1975-85
(kwacha)

Teacher's qualifications	*1975*	*1980*	*1985*
Trained graduate	3,288-5,388 (11)	5,208-7,044 (9)	6,792-9,036 (11)
Untrained graduate	2,892-5,388 (13)	4,800-7,044 (11)	6,588-9,036 (12)
Grade 12 + 3 years training	2,376-4,560 (13)	3,480-4,248 (4)	5,184-8,064 (15)
Grade 12 + 2 years training	2,208-4,560 (14)	3,288-4,248 (5)	4,992-8,064 (16)
Failed grade 12 + 2 years training	1,824-2,328 (7)	2,644-3,240 (8)	4,212-5,184 (8)
Grade 9/10 + 3 years training	1,752-2,328 (8)	2,592-3,240 (9)	-
Grade 9/10 + 2 years training	1,680-2,328 (9)	2,520-3,240 (10)	4,404-5,184 (9)
Failed grade 12, no training	1,464-2,328 (12)	-	-
Grade 7 + 2 years training	1,116-2,052 (13)	-	-
Grade 7, no training	600-1,116 (8)	-	-

Note: Figures in parentheses are the number of incremental steps in each scale. A dash indicates that the salary scales made no provision for qualifications or training that had been specially provided for in an earlier year.

Source: GRZ (1975, 1980, 1985a).

rate of inflation prevailing throughout 1986, estimated at 58.4 percent, the starting salary of trained university graduate teachers had the purchasing power of about 30 percent of their 1975 salary.

Teachers' Total Earnings

In addition to their salaries, teachers are paid a variety of special allowances, for instance, as heads of certain subject areas in the secondary field or for teaching double sessions at the primary level. At the secondary level, these allowances fell from 2.0 percent of the total salary bill for teachers in 1975-79 to 1.5 percent in 1980-84, while at the primary level they fell from 4.5 to 4.1 percent. To some extent, these declines reflect economies of scale: a larger salary bill that is due to additional teachers does not imply the addition of responsibility posts. To some extent, however, the decline is due to salary increases outstripping the rate of growth of allowances.

Table 13.4 Teachers' Starting Salaries at 1975 Prices, Selected Years

Teachers' qualifications	*1975*	*1980*	*January 1985*	*December 1985*
	Salary Entry Point at 1975 Prices (kwacha)			
Trained graduate	3,288	2,750	1,798	1,187
Untrained graduate	2,892	2,534	1,744	1,151
Grade 12 + 3 years training	2,376	1,837	1,373	906
Grade 12 + 2 years training	2,208	1,736	1,322	872
Failed grade 12 + 2 years training	1,824	1,407	1,115	736
Grade 9/10 + 2 years training	1,680	1,331	1,087	717
	Index of Salary Entry Points at 1975 Prices			
Trained graduate	100	84	55	36
Untrained graduate	100	88	60	40
Grade 12 + 3 years training	100	77	58	38
Grade 12 + 2 years training	100	79	60	39
Failed grade 12 + 2 years training	100	77	61	40
Grade 9/10 + 2 years training	100	79	65	43

Note: Deflator = index number of consumer prices, high income group.

Source: CSO (1987a, table 2); table 13.3.

At current prices, the total earnings of primary school teachers increased by 60 percent, from K2,581 in 1977 to K4,144 in 1984, but at constant prices they fell 28 percent to K1,852. The earnings of secondary school teachers rose by 52 percent, from K3,310 to K5,028, but at constant prices fell 32 percent to K2,247. The slower increase of secondary teachers' earnings is a feature of the government's policy of narrowing the income gap by awarding proportionally greater increases to those earning less. Thus, the ratio of the average earnings of the secondary teacher to those of the primary teacher fell from 1.3 in 1975 to 1.2 in 1984.

The low ratio of secondary to primary teachers' earnings contrasts sharply with Wolff's (1984, p. 19) figures. Wolff found that in East Africa, secondary teachers' salaries were generally from one-and-a-half to nine times higher than those paid to primary teachers. The small differential in Zambia raises questions about the salary scales: are the diplomate teachers being paid too much, or are the more highly qualified university graduates being paid too little? Education officials have reported informally that graduate teachers are unhappy about the small difference between their salaries and those of teachers with no university training. They have also reported instances of candidates declining places at the University School of Education and opting instead for the diploma training program, arguing that the small salary increase that graduate training would bring would not

compensate them for earnings foregone during the two extra years that university training would necessitate.

Teachers' salaries have fluctuated somewhat in their relationship to the per capita GDP, but in recent years the primary teachers' salaries have averaged some seven times and the secondary teachers' about eight times the per capita GDP. Compared to elsewhere in East Africa this is high for the primary teacher, the average ratio at this level being 4.6 (Wolff 1984, p. 6), and low for the secondary teachers, for whom the average ratio is 11 (Wolff 1984, p. 19).

Compared to salaries in the parastatal sector, graduate teachers are poorly paid. So far as the public sector is concerned, since 1975 teachers' salaries tended to be higher than those paid at comparable levels elsewhere in the civil service. However, in 1985 the salary scales were changed and graduate teachers are now paid a lower starting salary than graduates entering other areas of the civil service. This move has done little to enhance the image of teaching as a career for university graduates or as a profession of comparable status to others that require training of the same duration.

Teachers' Supplementary Economic Activities

Williams (1986, p. 97) and others have observed that to supplement their declining real incomes, teachers are resorting to a variety of commercial activities, such as running taxi services, grocery stores, bars, or market stalls; baking and selling foodstuffs; engaging in small-scale commercial farming; and so forth. Others have stated that much of the time teachers need for these activities is taken from time they should devote to teaching, with the result that the number of hours actually spent in teaching has fallen. Clearly if this were so, we would expect some reduction in the level of pupil achievement. Hence, in addition to its other effects, the economic decline, through its impact on teachers' salaries, could have an indirect effect on school quality.

Obtaining reliable information on the extent to which teachers might be engaged in supplementary economic activities is not easy. This is a sensitive issue and one about which teachers are reluctant to talk. However, some information was obtained from primary school inspectors, field supervisors of student teaching practice, and primary school heads. The overwhelming view, expressed by 217 out of 265 of the persons approached, was that teachers supplement their incomes by a variety of commercial activities and that this practice has been increasing in recent years. Both urban and rural teachers are affected. Most of the primary school heads stated that the teachers conducted their commercial activities in their own time, but the school inspectors and teaching practice supervisors believed that the teachers often absented themselves from school duties to attend to their business enterprises or farms.

Teachers' Morale

The foregoing pages show that during 1975-85, the total number of teachers expanded very rapidly, but that the growth of resources did not keep pace with the rate of expansion. Funds to purchase teaching materials and school equipment declined, and even when funds were available, the necessary items were frequently unobtainable because of production or importation problems. Teachers' salaries lost so much of their purchasing power that many felt compelled to take up additional money-generating activities to supplement their incomes.

The combination of these two factors, declining resources for the discharge of professional responsibilities and declining personal incomes, seemed destined to sap the morale of the teaching force and to produce a dispirited body of men and women imbued with a fatalistic sense of hopelessness. Strangely, this is not what has happened. Instead, despite cases of absenteeism and teachers having to "moonlight" to generate additional income, indications suggest that the teaching force is becoming more professional, more highly motivated, and more confident of its ability to master the adverse circumstances that have beset it. Increasingly those involved in the Zambian education scene today refer to the way teachers invoke such characteristics as self-help, self-renewal, personal responsibility for self-development, self-reliance, active participation, personal involvement, and resourcefulness. Additionally, there are signs that the Zambian teaching force is becoming increasingly confident of its ability to do things for itself and by itself.

Almost every edition of the Ministry of Education's *Annual Report* refers to the teachers' commitment to seeing the system through another difficult year. Since 1976, the reports mention teachers' contributions to an in-service training fund to cover the costs of courses being run by the inspectorate, but which the ministry could not finance. Most heads and teachers were very receptive to the reintroduction of practical subjects into the primary schools. Teachers have shown much resourcefulness in integrating these subjects into their teaching activities and have been willing to use their own time to assemble materials for class use. Equally well-received and enthusiastically pursued was the whole concept of production activities in schools, despite most teachers' lack of preparation for this subject. Although the economic outcomes of this activity have generally been disappointing, this can be attributed largely to implementation failures, not to a lack of teacher commitment and dedication. Coombe and Lauvas (1984, p. 4) spoke glowingly of the high professional quality of Zambian educators and of their strong sense of commitment toward improving education. They emphasized the consistent way in which Zambians of all ranks were endeavoring to come to grips with their educational needs, in a spirt of resourcefulness, improvisation, and self-reliance.

Contrary to expectations, therefore, smaller personal incomes and declining professional resources have not sapped the spirit of teachers. Instead, in an almost perverse manner, the economic crisis appears to have boosted personal and professional morale. Teachers recognize that there is financial security in being a teacher at a time when so many are not able to find employment. They are also becoming more professionally responsible in their desire to develop teaching resources through their own activities. The paradox of all this is that, whatever its undisputed drawbacks, the economic decline has resulted in an important benefit for the teaching profession in Zambia, namely, its advancement to a new stage of professional maturity.

The SHAPE Movement

Teachers' efforts at self-improvemen' have given rise to the Self-Help Action Plan for Education, or SHAPE. This is characterized as a program of the teachers for the teachers by the teachers (Ministry of Higher Education 1987). The program aims at enhancing the capacity of teachers, schools, and colleges for professional and material self-help through the development of school-based teachers' centers and college-based resource centers and of production activities in agriculture, industrial arts, and home economics. By stimulating the self-development and self-renewal of teachers in the field, the program hopes to integrate theory and

practice, to bridge the gap between school and community, and to ensure that production activities bring both pedagogical and material benefits to the schools. Although guided by a central secretariat and assisted by contributions from SIDA, the program is field-based, is planned and managed by teachers, and swings into action with financial inputs only when local efforts to mobilize resources are present.

The SHAPE program is important in that it is endeavoring to develop a school curriculum based on resourcefulness, self-reliance, and self-development. The eventual achievement of its objectives will see the school curriculum structured around production activities and practical work, an objective that can only be achieved by raising the level of understanding and professional skills of teachers and other education personnel.

This program, initiated at the end of 1985, was significant in that it responded to the growth of activities among teachers who were doing things for and by themselves, but who needed the encouragement of interest, moral support, financial assistance, and guidance. The accounts of participants show that two considerations were guiding the teachers in their efforts at professional self-renewal: first, the situation had deteriorated so much that they felt they must do something to improve it; and second, they realized that help would not be forthcoming from the education authorities, hence it was up to the teachers to remedy the situation themselves. The teachers felt that the Ministry of Education was remote, too far removed physically and psychologically, to respond to their professional needs as experienced in the field.

Thus, unlike a number of other initiatives in the educational field, the SHAPE program originated in essence at the level of teachers in the schools and was subsequently formulated into a national program. Its genesis and development may well be the most important internal educational reform ever to occur in Zambia. It is ironic that the catalyst for this all-important reform was the worsening financial situation and the lack of teaching resources to which it gave rise.

14

The Pupil in School and Afterwards

The central figure in the whole educational process is the school pupil. Yet Zambia and other developing countries have made few systematic attempts to come to know more about the pupils, their backgrounds, their aspirations, and what the educational process means to them. In countries experiencing contracting educational and employment opportunities, there have been few studies of how pupils deal with the pressures of a highly selective education system, how their attitude to life is colored by these pressures, and what the financial squeeze has meant to them personally and academically. Some data are available on pupils' ages, socioeconomic backgrounds, and educational and employment prospects. Thanks to studies by Hoppers (1979; 1980a, b) we have gained some insights into their aspirations, postschool adjustments, and society's expectations. But other than this, little is known about how pupils use the experiences, knowledge, and understanding gained from their schooling in adjusting to life after school, whether they are pursuing further training, seeking employment, or adapting to the realities of unemployment. More extensive study of these and related areas would be of great value to teachers, curriculum specialists, educational planners, career guidance authorities, the social services and youth ministries, and all policymakers in the educational field.

Children's Nutritional Status

The tendency for the age of primary school children to increase may also be related to the worsening nutritional status of children. Less well-nourished children appear younger than their years and hence may not be sent to school until they are older and appear more robust. Unfortunately information about the nutritional status of children in primary schools is not available. However, the evidence suggests the presence of serious malnutrition in Zambia, especially in some rural areas. National results and community-based surveys confirm that roughly one-third of children under five are malnourished (UNICEF 1986, p. 60).

The mortality rate of children admitted to hospitals because of malnutrition has increased steadily since 1975. The highest incidence during the decade was in the Northern, Luapula, and North-Western regions, but the drought that affected the Western, Southern, and Central regions during much of 1980-85 increased the malnutrition rates in these areas. The deterioration of the nutrition situation is

attributed to "a complex of factors, including a continuing decline in economic conditions, rapid inflation, deteriorating rural/urban terms of trade, population increase, urbanization, and drought conditions affecting large areas of the country" (UNICEF 1986, p. 58). The rise in mortality due to malnutrition, and the role of malnutrition as an underlying factor in deaths attributable to other diseases, has made this Zambia's most serious health problem.

The seriousness and extent of the malnutrition problem is only now beginning to come home to many. Its impact on education, in terms of participation and performance, has not yet been assessed. Neither has the role the education system might play in educating the public about this issue been evaluated. The only steps that have been taken within the education sector to intervene with supplementary feeding programs for schoolchildren have depended entirely on the initiative of individual school heads and on the resources they could muster through voluntary subscriptions. Given the commitment of almost all the funds at the primary level for the payment of salaries, it is difficult to know where public resources could originate for any food intervention program in primary schools, unless some funds could be diverted from other forms of student subsidies for this purpose. A food intervention program might have far-reaching effects not only in improving the general level of health of primary school children, but also in improving their attendance and performance.

The Family's Educational Background

Another feature of the average primary school pupil is that he or she is more likely than in the past to come from a family with some formal education. Those students that succeed in going on to secondary school are likely to come from families with a relatively high educational background or reasonably high socioeconomic status. The evidence relating to general educational background stems from the data on the overall level of education in the population. In 1969, 78 percent of the population had had no formal schooling, but by 1980 this proportion had fallen to 66.3 percent. Moreover, the percentage of unschooled individuals below the age of 45 is declining rapidly (table 14.1). Note that in 1980, only 20.2 percent of the females in the 15-24 age group, that is, the age group who today constitute a large proportion of the mothers of primary school children, were unschooled, whereas more than half those in the 25-44 age group, most of whose children would now be beyond primary school age, had had no schooling. Clearly, the proportion of young parents with at least a primary school background is rising.

Information about the educational background of families of secondary school pupils is scattered across a number of studies that gathered this information in the course of other investigations. In her tracer study of the 1976 cohort of graduates from the University of Zambia, Bardouille (1982) provided information on the educational background of the graduates' parents. These graduates would have completed secondary school no later than December 1971, and hence the information is interesting in that it shows the family backgrounds of a specially privileged group of secondary school pupils at a relatively early date. In a study of the relationships between adolescents and their parents, Mwanalushi (1980) provided data on the educational background of the parents of 151 boys and girls in a secondary school in Lusaka and of 199 boys and girls in a rural school in the Eastern region. Kaluba (1986) conducted a tracer study of all graduates—500 boys—from two technical schools in the years 1977-84. These schools select their annual intake from the primary pupils who perform best in the national secondary school

Table 14.1 Educational Level of Selected Age Groups, by Sex, 1980
(percentage of the age group with this level of education)

Education	*Age 15-24*	*Age 25-44*	*Age 45-64*
No school			
Male	10.9	19.0	43.8
Female	20.2	51.1	82.8
Primary school			
Male	61.9	48.5	48.5
Female	61.9	39.7	15.5
Secondary school			
Male	26.4	30.5	6.0
Female	17.1	8.1	0.8
Level not stated			
Male	0.8	2.0	1.7
Female	0.8	1.1	0.9

Source: CSO (1985a, table 4.3).

entrance examination. Hence the pupils represented a wide geographical spectrum and a narrow, but high, ability range. Finally, Ndondo (1984), in a study on the occupational aspirations of secondary school pupils, collected information on the level of education of the parents of 316 boys and girls from 14 secondary schools in the Northern, Western, and Lusaka regions.

The four investigations show clearly that pupils with unschooled parents are underrepresented in schools: in the general population, 24.2 percent of the adult men and 46.4 percent of the adult women had never been to school, but for the parents of the pupils in the surveys these figures were lower, 16.0 percent for fathers and 38.6 percent for mothers. However, pupils whose parents had secondary or higher education are overrepresented in secondary schools: in the general population, 22.3 percent of adult men and 10.1 percent of adult women have had secondary or higher education, whereas in the surveys these figures were higher, 29.8 percent for the fathers and 14.2 percent for the mothers of the secondary school pupils. The more highly educated tend to be better-off financially and more likely to live in urban rather than in rural areas. Thus, we can say that well-off parents are more successful than the less well-off in getting their children into secondary school and university, and the same holds true for urban parents. All this occurs despite the anonymous selection procedures used to determine which children continue their education after primary school.

Two additional aspects of Ndondo's (1984) study are of interest. He provided information on the level of education of the parents of male and female students taken separately, and also on the educational level of the older siblings of his sample of secondary school pupils. Surprisingly, he found a relationship between

the educational level of the parents and the sex of the pupils. Both fathers and mothers of female pupils tended to have a much higher level of educational attainment than the fathers and mothers of male pupils. It seems that more highly educated parents are likely to take special steps to ensure that their daughters are well educated. For the siblings, Ndondo found that the older siblings of 31.8 percent of his sample had had no education, 10.3 percent had had primary schooling only, and 57.9 percent had had secondary or higher education. The latter high proportion was found for both older brothers and older sisters, but was a little higher for sisters than for brothers. In the absence of further information, explaining why such a large proportion of older siblings had had no education whatsoever is difficult. Nevertheless, this finding reinforces the conclusion that pupils in secondary schools tend to come from families that place a high premium on education and where several members of the family, whether parents or children, share similar educational advantages. Clearly Zambia is well along the road to producing a self-perpetuating educated class.

Children Not in School

Another question that needs examining is the number of children of primary school age who are not in school. Some information for the 1980 situation can be derived from the census, which states that almost half a million children in the 7-to 14-year-old age group had had no schooling. In the country as a whole, both boys and girls were affected, but many more rural children were affected than urban children: 42.3 percent of the 7-to 14-year-olds in the rural areas were not in school, compared with 28.7 percent in the urban areas. Data from the Ministry of General Education and Culture shows that 341,800 7-to 14-year olds were not in school in 1980, but this figure is less reliable than the census figure. We should bear this discrepancy in mind when considering the figures for other years, which can be obtained only from the ministry; they too could represent considerable underestimates.

The total number of school-age children not in school increased steadily from 1975 and reached a peak in 1982, although relative to the size of the school-age population, the proportion of school-age children attending school has improved overall since 1975. The most recent information indicates that at least 350,000 school-age children were not in school. To provide schooling for these would require an additional 8,000 classes and up to 5,500 teachers.

School-Leavers

Attention and resources tend to focus on those who successfully negotiate the various stages of the educational selection process. Less attention is devoted to those who do not go through the whole system, except to decry the waste represented by the secondary schools' inability to admit all grade 7 leavers and to express concern about the "timebomb" this is supposed to create of discontented, alienated young people who are characterized as loafers and seen as a threat to society's stability and security. The school-leaver question is a grave social issue in Zambia and other developing countries. With only imperfect information on its scale there is no consensus on how it should be addressed. This makes it important to establish the magnitude of this problem and how its dimensions have been changing over the years.

Table 14.2 provides information on the number of school-leavers at different levels. Note that the number of children terminating their education at grade 4 decreased from 23,586 in 1975 to 11,795 in 1985. This reflects the reduced number of incomplete schools and the improvement in the transition rate from grade 4 to grade 5. At all other levels, however, the number of school-leavers increased, notwithstanding the rapid increase in secondary school enrollments.

Table 14.2 School-Leavers by Grade and Year, 1975-85

	Number who left school at the end of				
Year	*Grade 4*	*Grade 7*	*Grade 9/10[a]*	*Grade 12*	*Total*
1975	23,586	69,369	7,793	7,341	108,089
1976	23,556	74,858	9,111	7,724	115,249
1977	23,596	79,694	9,948	8,307	121,545
1978	23,178	83,443	10,419	9,120	126,160
1979	18,392	85,330	10,851	10,426	124,999
1980	18,556	94,938	11,206	10,739	135,439
1981	15,458	96,694	11,280	11,491	134,923
1982	13,103	96,836	12,069	11,678	133,686
1983	13,459	104,942	13,796	12,434	144,631
1984	10,371	104,126	13,726	13,253	141,476
1985	11,795	112,079	18,841	13,575	156,290

a. The figures in this column refer to school-leavers after grade 10 for the years 1975-84. For 1985 they refer to a combined total from grades 9 and 10 because of the 1985 reorganization.

Sources: Education ministries (1978-81), *Educational Statistics;* Ministry of General Education and Culture unpublished data.

Secondary school-leavers compete for the appropriate available training opportunities and jobs, of which there are not enough to accommodate all of them. As table 14.3 shows, in 1985, 5,845 people graduated from tertiary institutions, but that same year 13,575 students left secondary school, leaving almost 8,000 students with no access to further education (assuming that the number of entry places was roughly equal to the number of graduates). Since all the higher level institutions reserve some places for people with work or postschool experience, the ceiling on training opportunities for secondary school-leavers is reduced still further, to at best somewhere between 5,000 and 5,500. Thus, admission to training institutions is becoming increasingly difficult and competitive for secondary school graduates. Most institutions have raised their admission criteria, so only the top 35 to 40 percent of those completing the full secondary cycle can obtain places in training institutions. The remainder, together with almost all the leavers from junior secondary, grade 7, and grade 4, must adjust themselves to the world of adult life and work. This means that about 150,000 young people, some of whom do not have an adequate base for the retention of literacy, most of whom had a poor and highly

stylized educational foundation, and almost none of whom have marketable skills, enter the labor market each year.

Table 14.3 Graduates from Third-Level Institutions, 1981-85

Institution	*1981*	*1982*	*1983*	*1984*	*1985*
University	796	876	814	712	796
Technical institutes	1,638	1,674	1,717	1,903	1,598
Teacher training colleges	2,098	2,054	2,085	2,040	2,367
Natural Resources Development College	133	93	129	132	131
Agricultural institutes	244	226	293	356	300
Nursing schools	665	612	689	603	653
Total	5,574	5,535	5,717	5,746	5,845

Notes: Data were not available for the outputs from medical ancillary training establishments (Chainama Hills, Lusaka Dental School, Ndola Medical Laboratory Technicians School). The gross output from these institutions is less than 300.

Sources: University of Zambia (1981-85), *Annual Reports;* Ministry of Higher Education (1983, unpublished data); Norrby (1986); Nursing Council of Zambia records.

Unemployment

One of Zambia's most serious problems today, as for several years past, is unemployment, but scant data are available on this subject. The best recent sources are the 1980 census and a Central Statistical Office survey (CSO 1987b). Note that the CSO survey gives very low estimates of unemployment, probably because its broad definition of employment includes "persons aged 12 years and above who during the last week performed some work for wage or salary in cash or kind" (paid employment) or "for profit or family gain" (self-employment) (CSO 1987b, p. 63). This definition could readily include as employed individuals those who had found occasional, casual work, but with no question of its being permanent.

The 1980 census recorded 493,000 persons as unemployed, or 27.5 percent of the economically active population, with equal proportions of males and females unemployed. The proportion of unemployed was higher in the urban than in the rural areas. The highest number of unemployed persons was found in the Copperbelt province, and the lowest number was found in the North-Western province. When analyzed by age, the greatest number of unemployed fell in the 15-19 age group, while 80 percent were under the age of 30.

A very high proportion of the unemployed had had no education or no more than primary education (table 14.4), but 14 percent (more than 68,000 persons) had had some form of secondary or higher education. More secondary school-leavers were unemployed in the urban areas than in the rural areas. The relatively high

percentage of urban unemployed with a secondary education clearly reflects the heavier concentration of more highly educated people in urban areas. Census data show that as early as 1980, unemployment among university graduates was beginning to manifest itself, and amounted to some 200 to 250 people.

Table 14.4 Educational Status of the Unemployed, 1980
(percentage of the total number of unemployed)

Education	*Total*	*Rural*	*Urban*
No schooling	36.4	43.9	28.0
Grade 1 to 4	16.4	19.6	12.9
Grade 5 to 7	32.2	27.9	36.9
Junior secondary	10.0	5.6	14.9
Senior secondary	3.9	2.1	6.0
University	--	--	0.1
Not stated	1.1	0.9	1.3
Total number of unemployed: 492,999			

-- = percentage is less that 0.05 percent

Source: CSO (1985b, table 7.12).

The CSO survey (1987b) reported that the rate of unemployment in Lusaka was 12.7 percent, with more women unemployed than men. Again, most of the unemployed were 15 to 24 years old (57 percent), while 78.7 percent were under the age of 34. The highest rate of unemployment was found in those with no schooling (16.4 percent). The unemployment rate for males with a secondary education was higher than that for males with no more than a primary education. This suggests either that the more educated males prefer to wait until they find a job that they consider matches their educational qualifications and personal aspirations, or that employers prefer to engage those with lower qualifications. For both sexes, those with secondary education comprised more than 30 percent of the unemployed. The CSO survey also found that there was some unemployment among university graduates. This type of unemployment was very likely voluntary, in the sense that graduates can almost certainly find some kind of job, though not always one that meets their expectations. After waiting in vain for what they consider a suitably rewarded job to turn up, they adjust their aspirations and take up the less well-paid jobs that still remain available.

The data presented on unemployment show clearly that even high levels of education are no longer a passport to employment, let alone employment in the formal sector. As noted earlier, since 1975 employment in the formal sector has been decreasing at an average annual rate of 0.9 percent. At the same time, the labor force has been growing at 3.8 percent annually. Under such circumstances, most school-leavers will find it difficult to obtain formal sector employment, but will have to search for work in the informal sector.

The Informal Sector

Precise information on the size of the informal sector does not exist, but some orders of magnitude can be deduced. In 1980, the total labor force was approximately 1.8 million. With 493,000 unemployed and 381,500 employed in the formal sector, the balance (925,500), must have been employed in the informal sector. The CSO survey (1987b, p. 51) found that 42.4 percent of the labor force in Lusaka were involved in informal sector activities. As for the distribution of informal sector employment between rural and urban areas, with the exception of the large-scale commercial farms, employment on all other farms (subsistence, small- and medium-scale commercial farms) probably falls into the category of informal sector employment. On this basis, 66 percent of employment in the informal sector is found in the rural areas.

One of the dominant characteristics of the informal sector is its lack of regulation. Self-employment is a key concept, but an informal type of wage employment is possible within the sector. Enterprises are frequently family owned and workers may be unpaid family members. Operations are usually small-scale, with a low capital-to-labor ratio and heavy reliance on indigenous resources. A high level of market competition is often present, but the goods and services produced may be of low quality. Access to credit is restricted and very little opportunity to acquire or accumulate capital for injection into the enterprise is available. As wide range of skills is needed to ensure success in the informal sector, but participants develop most of these outside the formal school system.

The Informal Sector and the School Curriculum

The size and characteristics of the informal sector and its distribution over rural and urban areas are of considerable importance for school-leavers. They should therefore influence the school curriculum. From the data, large numbers of school-leavers must have been absorbed by the informal sector, especially in rural areas, in recent years, else unemployment would have risen dramatically. Thus, both primary and secondary schools should somehow address the special learning needs of those who will be absorbed into informal sector employment. However, the schools do not do this. In fact, educationists do not know what these special learning needs are. Thus, the first step toward preparing school children for informal sector employment is to determine the knowledge and the skills required in this sector. Some things can be taught in schools, such as the management of small-scale enterprises, simple bookkeeping, practical electronics, access to credit, cooperative and credit union movements, and farm management. However, these subjects cannot just be tacked on to the curriculum. This would lead to the same unsatisfactory outcomes as experienced from the addition of practical subjects to the curriculum or from the inclusion of some technical subjects in an academic curriculum in the hope that this would then constitute technical education.

If the primary and secondary schools are to provide the kind of education that most of their pupils will need, then the curriculum must no longer be directed toward a final examination designed to secure entry to higher education, and ultimately to formal sector employment. Instead of being concerned with the acquisition of a set body of knowledge, the curriculum should be directed toward the development of the skills and attitudes that will facilitate transition from school to the world of work. Such a major change could not be undertaken without considerable political will and popular support. Traditional forms of education

were able to prepare their pupils for the real world, but similar success has eluded the formal primary and secondary schools as they are currently organized and oriented. The past still has much to teach us.

15

Educational Supervision, Planning, and Decisionmaking

What goes on within the formal education system is greatly influenced by two separate groups within the educational bureaucracy and their interaction with each other, namely, the supervisory and planning authorities belonging to the education ministries. Through professional activities related directly to the work of schools, educational supervisors or inspectors monitor the schools' success as institutions of learning, while through their interactions with policymakers and planners, they help shape the ideas that should enable the education system to respond to the goals established for it. Indeed, through this interaction, the inspectors, together with policy and planning personnel, teachers, and parents should be constantly re-examining the aims of the education system and making whatever adjustments are required by developments at the local, national, and international levels. In addition to this basic function that they share with the inspectorate, the planning personnel within an education ministry have the task of converting issues, ideas, and policies into attainable plans. Clearly these two groups, the inspectors and the educational planners, are of pivotal importance with an education ministry. Thus, we will examine the extent to which their activities have been affected by difficult economic circumstances, such as those that beset Zambia during 1975-85.

The Inspectorate

The inspectorate should be an important agency in the promotion of educational quality in Zambia. The members of this section of the education ministries constitute the most direct link between the ministries and educational practitioners in the classrooms. Their primary task is to provide an advisory service within the schools aimed at improving teacher competence and facilitating the learning environment. Their other responsibilities include involvement in curriculum development, examination setting and marking, in-service teacher education, and professional associations. Inspectors see for themselves how teachers are teaching and schools are functioning. From personal contact with teachers and schools they learn how a curriculum and its component syllabuses are translated into classroom practice and how meaningful it is to pupils. They support teaching activities through the professional advice and feedback they can supply to teachers on the content and method of their teaching and on the availability and use of equipment. They have been characterized as sales representatives of educational

ideas, but they also learn from the schools about teaching content and method and about the improvisation and use of resources.

The decline in the financing of education has affected the inspectors' primary task most severely. Their number has not increased in proportion to the increase in the number of schools and teachers. Rather, it has decreased (table 15.1). In 1975, there were 80 primary school inspectors for just over 18,000 teachers; this figure was the same in 1984, when there were more than 27,500 teachers, and for 1987, when the number of teachers was even larger, the number of inspectors was reduced to 75. In 1975, one inspector was responsible for 225 teachers on average; today that inspector is responsible for more than 400. The same holds true at the secondary level. In 1975 the ratio was one inspector to 150 teachers, in 1980 it was one to 220, and in 1985 one to 360. Even without other constraints, this would make visiting individual teachers frequently impossible.

Table 15.1 Number of School Inspectors, Selected Years

Location	*1976*	*1983*	*1987*
At central headquarters			
Chief inspector	1	1	1
Deputy chief inspector	1	1	1
Senior inspector	5	5	4
Inspector	21	27	15
Total	28	34	21
At regional offices			
Inspector of schools	32	21	21
Senior regional inspector	0	9	9
Senior primary school inspector	30	21	21
Primary school inspector	80	80	75
Total	142	131	126
Grand Total	170	165	147
At Ministry of Higher Education	--	--	13

-- = not applicable

Source: GRZ (1976, 1983, 1987), *Establishment Register*.

Other constraints are present, however. Since 1973, the inspectorate has suffered from insufficient transport and from inadequate traveling funds. Resources were so limited in 1976 that secondary inspectors were restricted to 11 nights of touring each. In 1981, the only year that brought some improvement in the allocation for travel, inspectors were able to visit only one-seventh of all secondary school

teachers. At the primary level, the number of national and district inspections of schools and teachers declined steadily. In 1975, district inspectors visited approximately one-third of the primary schools, but by 1985 this had fallen to about one-twelfth. Clearly, the inspectors are no longer able to discharge satisfactorily their primary task of providing an advisory service on the spot to teachers and school administrators.

The inspectors now devote their time to their subsidiary professional tasks and various administrative duties. Three areas in particular appear to absorb the time of secondary school inspectors: cooperation with the Curriculum Development Centre in producing syllabuses and writing supporting teaching materials; setting, marking, and standardizing public examinations and training examiners; and organizing and teaching courses, seminars, and workshops for secondary school administrators and teachers. Because of their intimate awareness of the critical shortage of educational supplies in schools, most inspectors have also become involved in efforts to alleviate the problem, even to the extent of becoming, at times, procurement officers. They have also worked closely with professional subject associations to produce teaching notes and economically priced journals and magazines. The primary school inspectors have a similar range of subsidiary professional duties: mounting courses, promoting the resource teacher and resource center concept, and trying to alleviate the shortage of teaching materials in schools.

The inspectors' actual work—when they manage to visit schools—has also been complicated by the financial decline. If the school is rural, the inspector is likely to be the only education official to visit it. The school may be experiencing many kinds of problems—overenrollment; insufficient staff; staff housing problems; disciplinary issues; lack of textbooks, exercise books, and writing materials; and so forth. All of these problems are presented to the inspector on arrival. Much of the time that the inspector would prefer to spend with teachers in the classroom must be spent instead with the school administrators, sorting through their problems and providing advice. In other words, the multitude of problems the schools are experiencing, many of them because of the financial crisis, are tending to deflect the inspector from the role of "itinerant teacher educator" (Ministry of Education 1977, p. 67) and turn him or her into a factotum who will assuage all the ills of the beleaguered schools. Thus financial problems hinder the inspectors' work in two ways. First, they cannot get out as often as they should to visit the schools; and second, when they do succeed in getting to the schools, the financial problems divert their attention from the teaching-learning interchange in the classroom.

Educational Planning

Shortly after independence, a development planning unit was established within the Ministry of Education to plan for the expansion of educational provision at the national level and manage the execution of development projects. In 1976, the unit was freed of the latter responsibility so that it could focus on planning. As a prerequisite for its planning activities the unit requires comprehensive, reliable, and up-to-date data. Hence its secondary preoccupation has been with the compilation of statistics from educational institutions.

The planning unit's relationship to primary school development is somewhat complex. Regional authorities plan and execute primary school projects, using for this purpose capital funds allocated for all development at the regional level. Local authorities also plan development undertaken on a self-help basis. The role of the

ministry's planning unit is to set targets for new grade 1 openings and for the upgrading of incomplete schools to ensure balanced national development. The unit is also responsible for the execution of certain technical assistance projects that affect primary schools, particularly those SIDA finances for the supply of desks, readers, teachers' handbooks, and exercise books to schools. The unit is also involved in monitoring the organizational aspect of primary education and in effecting developments such as the extension of multiple session teaching or the conversion of primary schools with low enrollments into multigrade schools.

The planning unit is also responsible for planning the development of secondary schools and until 1982, when the Ministry of Higher Education was established, oversaw teacher training facilities. At these levels development involves large credits from the World Bank and other organizations. The Zambia Educational Projects Implementation Unit manages and executes these projects. This semi-autonomous unit also executes, on behalf of the Ministry of General Education and Culture, the secondary school maintenance and rehabilitation program, which is supported by NORAD and the World Bank. The recent burgeoning of self-help basic schools means that the planning unit must now face the problem of reconciling central control with local initiatives. However, the pressures of popular demand and political intervention are so great that the unit has not yet managed to bring about this reconciliation, with the resultant uncontrolled and unbalanced growth noted earlier.

The planning unit was greatly involved in the 1977 proposals for educational reform (Ministry of Education 1977), and because of this involvement, exerted considerable influence on policy formulation. But this influence appears to have waned since 1978. Since that time the unit has concerned itself principally with forecasting the need for school buildings and teachers, promoting self-help activities, gathering educational statistics, negotiating with aid agencies, and executing some aid-funded projects. Thus, instead of being a source of ideas about educational change and innovation, the planning unit confined itself to reinforcing the educational *status quo* by concentrating simply on making the existing system bigger. It did not have the resources to evaluate educational provision or to use research findings to plan, manage, and generally improve the overall system. The unit continued its annual data collection exercise, but performed only a minimum of data analysis. The compilation of educational statistics fell behind from 1979 onward, with the result that comprehensive, reliable, and up-to-date information was not available to guide the ministry's decisionmaking activities.

In the early 1980s, the planning unit was revitalized through technical assistance inputs from Sweden, which enabled it to undertake extensive training activities in data collection, forecasting, and needs analysis. At the same time, local personnel have been sent abroad for training in educational planning and management.

The reversal that occurred in the planning unit's status was due largely to understaffing and a lack of staff continuity. The small size of the approved staff establishment also contributed to the staffing difficulties since it did not provide scope for the recruitment of professionals in such areas as the economics of education (GRZ 1987, p. 35). Present efforts to strengthen the unit will not have their desired effects unless steps are taken to improve its status. Zambia would do well to heed the words of the Windsor Conference, in which its minister of education participated:

> What requires equally serious attention is the frequency with which staff with planning responsibilities are moved about, destroying continuity in data management and control, and the low status or marginalization of planning staff within some ministries, which effectively depreciates not only the advice they may be able to give but the information at their disposal. The remedy lies squarely in the hands of the governments concerned (ODA-ULIE 1986, p. 50).

The downgrading of the planning unit after 1978 may also have been due to two influences arising from the economic crisis of the 1970s, one at the international level and the other at the national level. At the international level, some disenchantment was being expressed with education as the great equalizer or the instrument of modernization. Despite massive investments in education, the poverty and inequalities that remained cast doubts on education's role in promoting material advancement. In particular, concern was growing that concentration on formal educational provision through schools and colleges was diverting resources from the needs of the poor that, critics felt, could be more adequately addressed through a wide variety of nonformal educational activities (UNESCO 1972). Thus, doubts about the value of expanding formal educational provision could be expected to attach themselves to the unit with responsibility for such expansion, and hence to contribute somewhat to reducing its importance as an advisory unit.

At the local level, the virtual cessation of capital funds, except for the university and for externally supported projects, meant that little physical development could take place. The planning unit appears to have been oriented more toward such quantitative expansion than toward improving the effectiveness and quality of primary and secondary education. Until it could address itself more strenuously to making the system perform better, it tended to be outside the mainstream of educational activity and decisionmaking. However, the unit was unable to change the direction of its activities as quickly as it should have done because it lacked a research arm that could have provided it with good information on the quality of education in the schools, the possible underlying causes, and the remedial steps necessary. In brief, the recession underlined the need to pay more attention to qualitative issues, but the planning unit was not well equipped to deal with these. In consequence, it lost much of its importance and ceased to have the major advisory role that it had played in the past.

The Educational Reform Movement

The educational reform movement of 1974-78 was the culmination of efforts to expand educational provision in the immediate postindependence years, to remove conditions that led to unequal access, and to relate the content of education to independent Zambian society. The very development of the system in the years after 1964 had created a host of problems. The speed of its growth outstripped the supply of qualified and experienced teachers, particularly at the secondary level. After the first few years of massive growth, the rate of expansion slowed down, to the consternation of the public. Fears were expressed about a "serious decline in educational standards (judged by examination results)" (Jolly 1971, p. 54), and concern was growing about the increasing number of school-leavers who were being eliminated from the school system without adequate preparation for adult life. Concern was also expressed at the imbalances and inequalities that were developing in society and the role education might be playing in giving rise to

these. Several of these concerns surfaced at the First National Education Conference, held in 1969, and in his opening address to the Conference, President Kaunda called for a fundamental reform of educational policies.

Initial steps to reshape objectives and curricula were made during the period of the Second National Development Plan (1972-76), which faced up to the problem that for many years to come, most children would receive no more than seven years of full-time schooling and hence that the primary school must

> help children to prepare themselves for a productive life in their communities, whether rural or urban. It should foster children's self-confidence and self-reliance by arousing vocational interests and teaching practical skills, and by helping to make intelligible the social and economic changes which their communities are undergoing. The community itself should in fact become a major instrument of education (GRZ 1971, pp. 128-9).

Although curricula were diversified and a new Zambia Primary Course was introduced, the earlier problems persisted. In 1975 a representative group of educationists found that the education system encouraged white collar aspirations among young people, fostered social stratification based on educational attainment and income, paid too little attention to practical skills, tended to alienate children from their own environment, and did not involve the community in educating and training young people (Ministry of Education 1975).

It was against this background that the educational reform movement was launched in 1974, and culminated in 1978 in the publication of the government's definitive reform proposals, *Educational Reform, Proposals and Recommendations* (Ministry of Education 1977). The reform exercise, the national debate that formed an integral part of it, and the relationship of the final document to the draft statement on educational reform (Ministry of Education 1976a) have been the subject of extensive treatment in the educational literature. The issues that attracted the greatest attention were the ideological implications of the change from the radical draft proposals to the more conservative recommendations of the final document, and the process of formulating educational policy. The literature has paid less attention to the actual contents of the approved proposals beyond a tendency to write them off as a "restatement of the position prior to 1974" (O'Brien 1982, p. 229) or as a "comprehensive reversal of all the previous radical proposals" (Clarke 1979, p. 6). No attention was devoted to the greatly revised draft proposals that Ministry of Education officials and university personnel developed in response to public reaction during the national debate, or to the circumstances that led to the exclusion of these proposals from the final document

Essentially, the reforms are concerned with gradual changes in the established system. They pay special attention to the way the system's quality can be improved and its standards raised. They are not concerned with radical or revolutionary changes. The incrementalist model that this implies has been associated with the influence of elite groups. O'Brien (1982, p. 228) describes the final plan as representing "the interests of the emerging middle-class and those who had an interest in retaining the status quo," while Lungu writes that

> it is readily apparent that...elites or the well-to-do sections of the Zambian society have the upper hand in the formulation of educational policy. Evident, too, is the preference for gradual reform strategies rather than the officially declared "radical" changes (Lungu 1985, p. 294).

But it could hardly be otherwise. *Educational Reform* itself notes that "education is a social institution which will continue to reflect the characteristics of Zambian society" (p. 6), and one of the features of society in Zambia is the presence of an articulate and literate minority who greatly influence the decisions that affect the majority. Zambia is not alone in this, and history demonstrates that even when social differences are eradicated by radical measures, they reassert themselves in new forms, often through the system of formal education (Coombs 1985, pp. 216-7). Merely decrying the way in which decisionmaking must take cognizance of elites and power groups is not a productive exercise. Instead, trying to ensure that the rights and needs of the less powerful are well served and that they can share in the fruits of national development would be more useful.

The Educational Reform Movement and the Decline of the Economy

Although the economy was still reeling from the body blows inflicted by the general world recession and the collapse of copper prices, no sense of financial hardship restricted the activities or the scope of the reform movement. In 1975, education officials traveled to several foreign countries to study their educational reforms; seminars with over 100 participants were organized in 1976 and 1977; a large drafting committee spent two weeks "in retreat" at an expensive hotel in 1976 working on the initial document; over 40,000 copies of the 81-page draft statement were distributed free, and summaries were published in heavily subsidized local language newspapers; a second retreat group devoted more than three-quarters of their working days over a period of four-and-a-half months to the preparation of a new draft; and secretarial services, stationery, and transport were freely available at all times during the exercise.

If activities directed toward reform proposals could go ahead as if a worsening financial situation did not exist, so also the proposals themselves appeared to take little account of the harsh economic realities of Zambia's situation in 1976 and 1977. The draft statement spoke of the need to commit "ever-increasing public funds to cover the capital and recurrent costs of the new educational system," but stated categorically that school fees would not be introduced as the revenues they might realize "cannot offset educational costs significantly, unless fees are very high" (Ministry of Education 1976a, p. 49). Instead, it proposed that new sources of revenue be found for educational development by way of deductions from workers' salaries, a levy on the net profits of all business enterprises, and the revenues from school production activities. The approved reform proposals reiterated the need for an everincreasing allocation of public funds, but stated that although it encouraged parental contributions, the policy of completely free tuition and boarding would remain. Elsewhere the document indicated the scale of additional capital and recurrent funds that would be needed to implement its proposals on the provision of nine years' basic education. However, beyond the acknowledgment that this would be a formidable task, there was no recognition that the proposals would be affected by the worsening economic situation. This apparent indifference to financial realities was far removed from the minister of education's observations in January 1977:

> ...our reforms exercise is entering its final stage at a time of almost unparalleled financial difficulty.... It would be foolish to pretend that this grave situation has nothing to do with the proposed reforms, or that we can seriously propose changes in our educational system without regard for the

> economic and financial realities which stare us in the face and preoccupy our every working day (Goma 1977, p. 4).

The policymaker ack of attention to the financial stringencies means that even now several of the proposals, especially those concerned with extending nine years of education to all children, show no possibility of being implemented in the near future.

Content of the Educational Reforms

The salient features of the approved educational reforms are as follows:

- The aim of education is to develop people's potential to the full for their ov' well-being as well as that of society. Education must reflect t..e characteristics of society, but society must also be influenced by education.
- Production work and service to the school community and nation are to be among the main features of education and are to be emphasized in the curriculum. However, production is to be used principally as an educational tool and not as an economic measure.
- Universal basic education is to be provided through nine years of schooling for every child from the age of seven; the first step in attaining this goal is to enable every child to enter grade 1 and to proceed through to grade 7. The existing structure of seven years primary, three years junior secondary, and two years senior secondary (7 - 3 - 2) is to be changed, in the interim, into a 7 - 2 - 3 system, and eventually into a 6 - 3 - 3 system.
- Responsibility for programs outside the formal education system, such as literacy programs or those for out-of-school youth, should rest with ministries other than the Ministry of Education.
- The curriculum should consist of core subjects that provide a general education and optional subjects, including practical subjects, that are to be studied in greater depth.
- English should continue to be the medium of instruction from grade 1. The status of Zambian languages should be improved and the university should extend its work here.
- Examinations will continue to be used for certification and selection. They should serve to test knowledge and understanding, to provide an incentive for hard work, and to improve quality. Continuous assessment should be used in the teaching-learning process. It could also play a part in certification and, in borderline cases, in selection. Attitudes could be assessed, but such assessment should play no part in certification or selection.
- Preservice training of teachers should be for two years on a full-time basis. Because the success of the system depends on teachers' competence, commitment, and resourcefulness, efforts should be made to improve their status and encourage them to remain in the system.
- Appreciation is expressed for the role played by voluntary organizations and mission agencies in providing education, and their continued participation is encouraged. Private schools will be allowed, subject to compliance with regulations.
- Local participation in decisionmaking on educational matters is advocated, but before more serious responsibilities can be devolved on the local

community, it must show itself mature enough by its involvement in other matters, notably in self-help projects.

- There should be "positive discrimination" in favor of the handicapped in the provision of educational facilities and amenities.

Status of the Educational Reforms, 1978-84

After 1978 the educational reform movement made slow progress. Indeed, in many respects it ran out of steam, although whether this was because of disillusionment with the outcomes or because of the growing realization that the financial resources to implement the reforms were beyond the country's capacity is not clear. The education and training chapter of the Third National Development Plan (1979-83) was elaborated on the basis of the reforms, but significantly it spoke about beginning the implementation of only part of the reforms (GRZ 1979, p. 342), stressed the least capital-intensive aspects, set universal entry of seven-year-olds to grade 1 and automatic promotion from grade 4 to grade 5 as targets, and confined capital investment to the completion of earlier projects rather than to the commencement of new ones. Apart from the rather general statement of intent in the plan, there was no coherent attempt to translate the reform proposals from an agenda for action into a plan for implementation. Instead, the plan focused on specific issues that were assuming increasing importance because of the decline of real resources.

Almost all the issues that preoccupied education officials in the years after 1978 were related to quality aspects of educational provision. Thus, the Ministry of Education's annual reports referred increasingly to the difficulty of ensuring an adequate supply of textbooks and exercise books at the primary level. The first reference to inadequate equipment, furniture, and books at the primary level occurred in 1978, but thereafter the matter was mentioned every year. At the secondary level, the issues of concern were the deteriorating condition of school buildings, the need to use laboratories for regular class teaching, and the increasing difficulty in obtaining textbooks and science supplies. The quantitative aspects did, of course, also receive attention. Those that caused most concern were the inability to respond to the rising demand for increased access to education at all levels, overcrowding in urban primary classrooms, and "the abominable legacy" (Ministry of Education *Annual Report 1977*) of double sessions.

Nevertheless the system continued to expand and to outstrip the allocation of funds. In the absence of sufficient resources to meet all its needs, senior education officials were obliged to devote more of their attention to the multiple adjustments needed to keep the system operating. Problems that might have been dealt with expeditiously by a visit from a mid-level officer, or that might not have arisen if more resources had been available, tended to be directed to an unnecessarily high level for solution. An increasing amount of time had to be devoted to negotiations with suppliers of educational materials or with aid agencies anxious to help alleviate the shortages. Every decision that involved a commitment of funds required more careful scrutiny and a more cautious approach than would have been needed in easier financial times. The result was that education officials became so preoccupied with keeping the education system going that they did not have the time to think about its purpose or destination. Neither did they have the opportunity to develop a comprehensive plan to implement the reforms. At an early stage of the evolution of the reform proposals, the secretary general of UNIP had noted that a

feature of the Zambian education system was that

> ...the educational train is on a single track whose destination seems to be the school certificate examination, or even something beyond that. Yet, almost without stopping, the train attendants eject most of the passengers at points along the way (Ministry of Education 1976a, p. 79).

The main thrust of educational endeavors in the early 1980s appears to have been to keep this train on its track.

These comments are not intended as a criticism of the officials in the education ministries. Over several difficult years, their duty was to keep the education system operating as efficiently as possible, regardless of problems and shortages. They did so extraordinarily well, but they did not have the opportunity to reflect deeply on the 1977 reform proposals, to evaluate and criticize them in the light of changing financial circumstances, or to set about translating them into a comprehensive plan of operations. Neither could they undertake a thorough assessment of the entire educational process, although once they received the opportunity to do so, senior education policymakers showed their readiness to grasp the need for new directions.

An example of this was seen in January 1985 when the Economic Development Institute of the World Bank conducted a seminar in Nairobi. Officials from education, finance, and planning ministries in a number of anglophone African countries, including Zambia, participated. The seminar gave participants an opportunity to reflect on the financing of their education systems, the directions they were moving in, and possible options (Kelly 1985). Although one cannot point with certainty to a cause and effect relationship, the twelve-months following the seminar saw the implementation in Zambia of several of the proposals raised in Nairobi, for example, the reintroduction of boarding fees, the beginning of discussions about some form of payment by beneficiaries of higher education, a more vigorous encouragement of private schools, greater concern about the improvement of educational quality, a greater preoccupation with the problems inherent in the explosive growth of the school-aged population, and a generally welcoming attitude to the *Provision of Education for All* report (Kelly and others 1986), despite the many new departures that it proposed.

The Education Reform Implementation Project

In many ways, *The Provision of Education for All* (the Educational Reform Implementation Project or ERIP report) (Kelly and others 1986) rounded off the educational reform movement by its efforts to express some of the major reform proposals in operational form, with targets and costs spelled out on an annual basis up to the year 2000 and with concrete proposals on how to meet these costs. The document also shows how many teachers will be required on an annual basis and what must be done if output is to attain a desirable level of quantity and quality. There is considerable coverage of the examination system and of areas in which it can be reformed so that it can better serve intrinsic educational objectives. Quality, with special reference to educational materials and curriculum development, and relevance, with emphasis on the role of the community and parent teacher associations, are considered at length. The principal quantitative element of the report is that population growth is so rapid, the educational backlog so marked, and the economic prospects so poor that the only target that can be realistically aimed at is universal primary education by the year 2000. Hence it accords the highest

priority to the development of primary education (and of the supporting teacher education sector) so that every child can in time be assured of seven years of top quality, relevant education.

The ERIP report was transmitted to the Ministry of General Education and Culture in 1986, but the ministry has not commented on it formally as yet. However, the report is being used extensively in training sessions for education planning officers and senior education personnel, has had some of its recommendations, tables, and language incorporated in the 1987 annual plan, and has been used as the basis for the ministry's submission for the Fourth National Development Plan (1987-91). Although all this indicates that the report has been well received, its status will remain doubtful until the ministry makes a definite pronouncement. This uncertainty is inhibiting decisions not only of ministry personnel, but also of aid agencies.

Forms of Educational Decisionmaking

The foregoing account of the educational reform movement demonstrates that educational decisionmaking in Zambia takes many forms. Popular participation dominated in 1975-77 when the reforms were being elaborated. Decisionmaking in reaction to circumstances also occurs, for example, the decision to reintroduce boarding fees in schools. Here, in contrast to the open model of 1975-77, many of the deliberations took place behind closed doors. Decisionmaking by decrees made at a high political level is also found. Striking examples were the 1975 decision on establishing a federal university, when the policymaking bodies at the university were by-passed (Nyirenda 1986, p. 13), and the 1982 decision to establish a Ministry of Higher Education. Finally, there is decisionmaking by delegation, where evaluation studies are commissioned that will provide the basis for policy decisions. These have a long history in Zambia, from the Radford Commission, which recommended the direction educational development should take in what was to be Zambia (UNESCO 1964), and the Lockwood Commission, which advised on the establishment of the university (NRG 1964), to the ERIP report on the implementation of the educational reforms (Kelly and others 1986).

These methods of decisionmaking are not unique to education. Public involvement, reaction to circumstances, and commissioned evaluation studies have all played their part in guiding Zambia's decisions in the political and economic spheres, as well as in the educational sphere. However, direct public participation is problematic because it tends to be very costly. The cost could be reduced in the education sector by giving more formal recognition to groups such as parent teacher associations that would represent the public.

The Personnel Needed for Decisionmaking

Although the education sector as a whole has grown enormously, the staff of the education ministries has not increased accordingly. In 1975, the ministry headquarters had 278 staff members; in 1985 it had 275, with an additional 87 posts at the more recently established Ministry of Higher Education. Of this gross increase of 84 posts, 34 were secretarial positions and 23 were in the finance section. At the regional level, the number of posts declined overall.

Another striking feature of the education ministries is the large proportion of junior officers and the small proportion of mid-level and senior officials. The personnel structure of the ministries bears a close resemblance to the structure of

the education system itself: a pyramid with a very wide base that narrows rapidly.

Mere inspection of the establishment structures for the two ministries does not reveal the processes involved in formulating policy or in executing decisions, but the impression is that only a limited number of officers at headquarters can actually contribute to the formulation of proposals, the development of policy, or the execution of decisions. Much depends, however, on the mechanisms established for consultation within the ministries and on whether senior officers see themselves as playing an almost exclusively executive role or one that allows more scope for input to the decisionmaking process. The same holds true for chief education officers in charge of regional offices. Clearly, as the heads of educational administration at the regional level, these officers have executive responsibilities, but as they are in operational contact with teachers and institutions, they also have much to contribute to overall policy formulation and decisionmaking. It is not clear that much prominence has been given to this important function of the chief education officers.

The preponderance of low-level officers in the ministries, and the sluggish growth in the number of mid-level personnel in comparison to the growth of the education system as a whole, are probably among the factors that have contributed to an acknowledged slowing down in the ministries' handling of routine business. This inefficiency has resulted in considerable demoralization of teachers in the field, and in 1987 the minister for general education and culture pinpointed it as one of the causes of a teachers' strike:

> Teachers should bear with the ministry whose staff at headquarters could not cope with the growing teaching service.... (The Minister) apologized for the inconvenience caused to teachers and promised that the entire section at headquarters would be reorganized (*Times of Zambia*, March 10, 1987).

Reformed structures and procedures are doubtless needed within the education ministries. Education and training are also required (Lungu 1986). In the absence of these corrective measures, the weakness that pervades the administration of the entire education system, but that is concentrated at headquarters, will aggravate the financial difficulties and will frustrate efforts to deal with the economic problems.

16

Continuing Education Programs

In common with most countries, Zambia provides continuing education programs to complement or extend the education acquired in school, to enable young people and adults to acquire practical skills or useful knowledge, and to meet some of the needs for personal development and self-expression. Again, as in other countries, continuing education programs constitute a bewildering medley that involves various institutions. Some are of a formal nature and lead to clearly defined outcomes. Others are much less formally organized. No systematic attempt has been made to develop an inventory of nonschool educational and training opportunities or to estimate the resources devoted to providing them. Neither has any attempt been made to compile a register of training or further educational opportunities for school-leavers at various levels. Young people's knowledge of these programs is sketchy and is obtained in an informal and frequently incomplete way. This review does not set out to identify all the educational and training possibilities and their development in years of economic hardship. Instead it confines itself to the programs offered by the Department of Continuing Education in the Ministry of General Education and Culture and attempts to assess the impact the financial crisis has had on their availability and popularity.

The Department of Continuing Education

The main focus of the Department of Continuing Education is on formal education. It provides adults who may not have had an opportunity to undertake or complete formal education to do so through part-time study. It also provides those who have failed public examinations with an opportunity to prepare themselves for another attempt. Given the high premium that Zambian society places on credentials, it is not surprising that most of the students for which the department is responsible see its primary role as helping them to "obtain paper qualifications because society and employers demand these before they recognize the worth of an individual" (Ministry of Education 1977, p. 56).

The department is responsible for four types of educational activity:

- providing junior and senior secondary courses to students enrolled in the National Correspondence College;

- organizing and managing supervised study groups and providing them with learning materials produced by the National Correspondence College;
- organizing and teaching evening classes for adults;
- arranging training in specific skills for recent school-leavers and adults.

In addition, the department provides teaching and administrative staff for general education classes in all the major prisons.

The National Correspondence College

Notwithstanding the education ministry's financial problems and students' difficulties in getting the necessary fees, enrollment for correspondence programs has increased from about 21,000 in 1975 to some 36,500 in 1985. These figures can, however, give a misleading impression, since a very large proportion of the enrollees are inactive; they are formally registered for courses but do not participate. In 1976, about 73 percent of the students were active, but reports indicate that this figure dropped to 40 percent during the year.

Most correspondence students are located in urban centers, where postal services and study facilities are better than in rural areas. The Third National Development Plan envisaged moving the college from Luanshya, considered to be too remote to serve correspondence education effectively, to Lusaka. But, this move did not take place because of the lack of accommodation for staff in Lusaka. However, the college's location in Luanshya will not serve to promote its status or facilitate a more dynamic and professional use of the correspondence mode of educational delivery.

Supervised Study Groups

The supervised study group scheme was designed to give unemployed primary school-leavers who could not proceed to secondary school or to training institutions an opportunity for ongoing education. The scheme began in 1972 and initially covered the junior secondary level only, but in 1979 it was extended to include students preparing for O-level examinations. The scheme was clearly aimed at those who had completed grade 7, but were not selected for grade 8. The groups of 30 to 60 students study materials in regular secondary school subjects, sit the JSSLE after three years, and if they pass at a level comparable to full-time school candidates and are young enough, may be selected to enter a regular senior secondary school. The scheme is a self-study program, supervised but not actually taught by a trained teacher.

Enrollment records are inconsistent, but apparently enrollment has risen from about 9,200 in 1976 to 12,000 in 1985. Approximately 2,500 new students enroll each year. The success rate, in terms of examination performance, cannot be determined, since with the exception of 1980, candidates from this category were not distinguished from the other external candidates who took the JSSLE (some 10,000 to 15,000 students in all). In 1980, of 2,093 study group students who sat the JSSLE, 11 percent obtained full certificates and 13.7 percent failed completely (Ministry of Education and Culture 1980 *Annual Report*). This can be compared with the 7 percent of all external candidates who obtained full certificates during 1975 to 1979, and the 23.6 percent who failed completely. On the limited evidence of this one year, study group students perform better than external candidates as a whole, but

nowhere near as well as school candidates, whose pass rate averages about 60 percent.

In 1980, 3.5 percent of the study group students entered senior secondary school, but constituted less than 1 percent of the admissions at that level. Unfortunately, information on their subsequent performance at the School Certificate Examination is unavailable, thus an assessment of the scheme's overall success is not possible.

The scheme's development has been constrained by the lack of funds to pay supervisors and produce teaching materials in the quantity required. The number of groups tends to fluctuate from year to year depending on the availability of funds. Unfortunately, disaggregating the scheme's costs from other costs borne by the Department of Continuing Education is impossible. Hence we cannot compare the scheme's costs with those of regular schools, programs for those who study exclusively by correspondence, or evening classes.

Evening Classes

The department's most extensive activity is the provision of evening classes. These classes provide formal academic programs at the primary, junior secondary, and senior secondary levels. The enrollment is about 16,000 students, of whom approximately two-thirds are male. Participation in primary evening classes has been gradually giving way to participation at the secondary level, which may indicate that the regular school system is meeting the need for primary provision. Alternatively, it could indicate that uneducated adults no longer understand the benefits of obtaining a primary school education.

Enrollments in evening classes tend to vary in relation to the amount of funds allocated for this activity. Classes may have to be suspended because sufficient funds are not released to pay teachers, or because payment arrears carried forward from the previous year may reduce the funds available for the next year. The lack of stability in the allocation and availability of funds has an adverse effect on the morale of all who organize, teach, and study at evening classes. This is probably an additional reason for the decline in enrollments at the primary level, since the unsettling effect of uncertainty about the continuation of classes would not be offset by the prospect of gaining a certificate that will help obtain employment.

Schools for Continuing Education

Programs to teach specific skills are provided in 12 schools for continuing education. The objective of these schools is to teach locally useful skills, but at the same time the participants may be able to prepare themselves, as study group students, for formal examinations. The skills taught include leatherworking, pottery, tailoring, carpentry, and weaving, with schools concentrating on those skills for which human and material resources are available locally. Although the number of continuing education schools increased from 5 in 1979 to 12 in 1982, the enrollment dropped from 2,648 in 1977 to 2,173 in 1985. This reflects the financial problems that continually beset the Department of Continuing Education.

Conclusion

The general picture that emerges of the programs the Department of Continuing Education offers is that they are marginal to the mainstream of educational

provision in the country and that they enjoy a low priority in resource allocation. This has led to an irregular pattern of expansion and curtailment determined by the resources actually allocated, despite the enormous growth in the potential clientele for the department's services. The very factor that brings about the participation of many of the department's students, the opportunity to reenter the formal school system, necessarily subordinates the department to providing a second-chance role. This appears to have prevented it from attending to the wide issues of adult education or to the provision of opportunities to develop marketable skills.

There is no doubt that the department's activities have been hampered by financial problems. As these grew worse within the education sector as a whole, continuing education suffered badly, and was the only education subsector obliged to offer educational services in so erratic a fashion. It might not have suffered so badly if it had not been viewed as a parallel system, perceived by many as second-best, and patronized largely by those who wanted to get out of it as quickly as possible. Hence, the adverse effect of the declining economy on the department's activities may be as much a reflection of the image the department projects as of the financial problems themselves.

17

The University of Zambia During the Years of Economic Difficulty

The University of Zambia opened in March 1966 with 310 full-time students, 20 percent of them female, registered in degree studies in the natural sciences and education and in a diploma in social work. At that time the university functioned on two sites in Lusaka, the Ridgeway Campus for teaching and the site of the former Rhodes-Livingstone Institute for research.

Twenty-one years later, the university had grown into a federal structure, with constituent institutions in Lusaka and Kitwe; operated from three sites in Lusaka, one in Kitwe and, through its extension wing, one site in each province; had an enrollment of 3,831 full-time undergraduate students (with a further 167 part-time students and 621 taking correspondence courses), of whom 17.8 percent were female, and 207 postgraduate students; was organized into 11 teaching schools and a Centre for Continuing Education; and had five research institutes.[1]

During its existence, the university has conferred a total of 491 postgraduate awards, 8,057 undergraduate first degrees, 609 diplomas, and 515 certificates. It has raised the proportion of Zambians on its teaching and research staff from a tiny minority in 1966 to almost 50 percent, and has Zambianized most of the administrative, technical, and support posts. To accomplish this it has devoted over one-tenth of its annual budget to a staff development program that has provided more than 2,500 staff-years of training for academic and senior administrative staff and over 600 for staff at other levels.

The analysis that follows seeks to understand these developments in the light of the guiding principles set out for the university at the time of its establishment, bearing in mind the financial constraints that have become so pronounced since 1975. The Lockwood Report enunciated these principles when it stated that the university "must be responsive to the real needs of the country (and) secondly it must be an institution which on merit will win the respect and recognition of the university world" (NRG 1964, p. 1).

1. This chapter was drafted before the announcement in July 1987 that the federal structure of the university was to be dissolved and that separate universities were to be established, one in Lusaka and the other on the Copperbelt.

Admissions and Enrollments

Each year the university admits 900 to 1,100 students on a full-time basis for degree, diploma, and certificate courses in Lusaka or Kitwe, together with an additional 150 to 200 students for correspondence courses. About 80 percent of the admissions are school-leavers. Thus, the university admits annually about 880 of the roughly 8,000 students who pass the School Certificate Examination. But even this highly selective procedure does not ensure enough suitably qualified candidates in the sciences because of the low levels of performance in mathematics and science at school. For school-leavers, admission is based on their performance in five acceptable subjects. This criterion is rigidly applied, even in borderline cases, despite the notoriously unreliable nature of these grades (see Wilmott and Nuttall 1975).

Of the remaining 20 percent who are admitted to the university, 80 percent apply for direct admission on the basis of qualifications obtained outside the school system. A significant proportion of these hold diplomas underwritten by the university, especially in education and agriculture. Another 16 percent are nurses entering the nursing education and nursing degree programs. The final 4 percent fall into the mature student category. These candidates, who must be of a certain minimum age, are selected for admission on the basis of a special examination administered by the university. In principle they should be candidates whose progression through the education system was hindered by the lack of facilities. In practice they are often candidates making their final desperate attempt to gain admission to the university. The number of mature applicants is large: over 1,700 in 1983, of whom 26 were admitted for full-time studies and 70 for study by correspondence.

The University and Development Needs

Two aspects of student enrollment are of particular interest in relation to Zambia's developmental needs, namely, the numbers enrolled in areas of national need and the proportion of female students. Because of the highly developed industrial and mining sector, and because so much faith is pinned on scientific and technological development, the government considered that the university should give priority to the sciences in terms of enrollment and resources. However, bringing this about has not been easy, partly because of the cost of developing and maintaining science fields of study, but more so because the supply of suitably qualified candidates for admission to scientific studies has always been inadequate, as already discussed. In order to augment the supply, in 1981 the university established a pre-university science program to upgrade marginal candidates (since 1982 this program has been funded by the United Nations Financing System for Science and Technology for Development). The program has increased somewhat the number of students admitted annually to science-based programs, but the number is still below the university's capacity.

Thus, the university is not yet producing the number of science and technology graduates Zambia needs. However, commendable progress has been made, with the proportion of science students increasing significantly: for full-time undergraduates, this proportion grew from 35.2 percent in 1979/80 to 50.3 percent in 1986/87 (table 17.1). The university is now aiming for 60 percent of the enrollment to be in scientific subjects in line with the country's projected manpower needs (Ministry of Education and Culture 1980 *Annual Report*).

Table 17.1 University Enrollments by Sex and Principal Field of Study, 1979-86

Year	Science schools			Non-science schools[a]			All schools			Percentage of students in science schools
	No. of men	No. of women	Percentage of women	No. of men	No. of women	Percentage of women	No. of men	No. of women	Percentage of women	
1979	928	98	9.6	1,312	576	30.5	2,240	674	23.1	35.2
1982	1,378	190	12.1	1,271	569	30.9	2,649	759	22.3	46.0
1983	1,478	151	9.3	1,205	557	31.6	2,675	708	20.9	47.9
1984	1,627	178	9.9	1,379	504	26.8	3,006	602	18.5	48.9
1985	1,694	264	13.5	1,334	504	27.4	3,028	768	20.2	51.6
1986	1,739	184	9.6	1,403	494	26.0	3,142	678	17.7	50.3

Note: Data were not available for 1980 and 1981.

a. Non-science schools include the humanities, social sciences, law, and education schools.

Source: University Planning Office.

Table 17.2 University of Zambia Graduates by Sex and Principal Field of Study, 1974-85

Year	Science degrees			Non-science degrees[a]			All degrees			Percentage of students obtaining science degree
	No. of men	No. of women	Percentage of women	No. of men	No. of women	Percentage of women	No. of men	No. of women	Percentage of women	
1974	163	10	5.8	205	55	21.2	368	65	15.1	40.0
1975	152	6	3.8	201	45	18.3	353	51	12.6	39.1
1976	166	14	7.8	305	50	14.1	471	64	12.0	33.6
1977	151	20	11.7	265	91	25.6	416	111	21.1	32.4
1978	116	12	9.4	259	77	22.9	375	89	19.2	27.6
1979	242	11	4.3	317	99	23.8	559	110	16.4	37.8
1980	172	17	9.0	397	124	23.8	569	137	19.4	26.8
1981	223	20	8.2	381	154	28.8	604	174	22.4	31.2
1982	174	14	7.4	368	161	30.4	542	175	24.4	26.2
1983	239	17	6.6	265	110	29.3	504	127	20.1	40.6
1984	257	54	17.4	152[a]	87[b]	36.4[b]	409[a]	141[a]	25.6[a]	44.2
1985	278	41	12.9	308	129	29.5	586	170	22.5	42.2

a. Non-science degrees include the humanities, social sciences, law, and education degrees.

b. Does not include 154 education degrees not analyzed by sex.

Source: University Planning Office.

The inadequate supply of science students has required the university to admit candidates who, on paper, may not be well qualified. As a result, the scientific subjects experience very high and costly failure rates, especially at the end of the first year. The failure rates are particularly high in physics, although recent years have seen some improvement.

The School of Agricultural Sciences

The Lockwood Report singled out agriculture as a high priority area. Yet it took a singularly long time for the university to give this subject the recognition it deserved. To some extent this delay was caused by doubts about the most suitable location for the agricultural school, but even these doubts are indicative of the inferior status that the university accorded to agriculture for several years. The school's status was further depressed by the system that existed up to 1979 whereby at the end of the first year in the School of Natural Sciences, students were allocated, on the basis of performance and preference, to the various science-based degree programs. Students had a poor view of agriculture and science education, hence these rarely featured among first preferences. In consequence, the agriculture and science education programs usually received a large proportion of very weak and unwilling students. The high wastage to which this gave rise, in the form of dropouts, failures, and subsequent abandonment of agricultural and teaching careers, led the university to reconsider the procedure and to adopt a system whereby students could be allocated to agriculture and education on the basis of preferences expressed before admission to the university. The initial years of this new arrangement saw some difficulties, especially in the form of candidates who thought that they could switch programs once admitted. However, current attitudes toward agriculture and education are now more positive, although they both still receive a large proportion of weak students. Possibly a contributing factor to the improved attitude is the perception of likely job security in both these areas.

The increasing priority given to agriculture by the university is demonstrated by the increase in the proportion of full-time students in the school from 4.9 percent of the university's enrollment in 1981 to 6.5 percent in 1987 and in the proportion of the funds it receives: from 7.4 percent in 1975, to 11.1 percent in 1980, to 12.3 percent in 1984. These latter proportions actually seriously underestimate the share of resources agriculture receives since they do not take into account the large amount of technical assistance the school receives from various governments and other sources. To date 331 students have graduated from the school.

The School of Engineering

Engineering was also accorded priority early in the university's history, demonstrated by the use of a World Bank loan to build the school. The school offers regular degree programs in civil, electrical, and mechanical engineering, and receives technical assistance from SIDA for specialized programs in telecommunications and land surveying. Its enrollment is increasing gradually, but is limited by the number of candidates suitably qualified in mathematics and physics. The school has awarded a total of 552 engineering degrees, while the allied School of Mines has conferred 301 degrees in mining engineering, geology, and metallurgy.

The School of Education

A third area that has been given priority since the university's earliest days is education. The preparation of graduate teachers for the senior classes of secondary schools has always accounted for a substantial proportion of university resources. Some 20 percent of the full-time students and 60 percent of correspondence course students are enrolled in this school, although it is receiving a declining proportion of funds. Some of this decline is due to organizational changes within the university, such as the transfer of the Geography Department out of the education school and into natural sciences in 1983, but even allowing for this change, education and other humanities-based schools have been receiving a smaller proportion of the university's teaching funds. The school has graduated over 2,000 teachers, 484 in science education and 1,563 in arts subjects, but as already discussed, less than half of these are still teaching in the secondary schools.

The School of Business and Industrial Studies

A final area that the government considers very important is accounting. Training in accounting is conducted in Kitwe in the School of Business and Industrial Studies. This school currently enrolls over 7 percent of all full-time students at the university, though it receives only about 4 percent of the teaching funds. About 75 percent of the students in the school are enrolled in the accounting program. A degree in accounting does not qualify the holder for professional membership of the Zambia Institute of Accountancy, but it confers advanced standing in relation to professional examinations. Since the school was opened in 1978, the Bachelor of Accountancy has been conferred on 371 graduates.

The University's Response to Manpower Needs

On the basis of the sheer number of graduates, both in the priority fields already noted and in other areas, the university appears to have responded well to its mandate to produce high-level manpower for the country's needs, although Shaw (1980) maintained that university outputs during 1973 to 1978 did not always accurately reflect the national manpower priorities. The university's efforts to respond to national needs continue, although they are undoubtedly hampered by financial problems. There is no decline in student numbers at any level; instead, there is a slow but steady growth in enrollments. The university has also attempted to diversify the programs offered and to introduce new fields of study, such as veterinary medicine, that are considered to be of national importance.

The question of whether the university's numerical output of graduates really meets national manpower requirements is worth addressing. To begin with, there is no clear picture of what those requirements are. No recent survey of manpower needs has been carried out and given to the university to guide it in planning its programs and enrollments. In the absence of such a survey, the emphasis given to certain programs will vary with the perceptions of the university authorities. In such circumstances outputs will tend to match real needs only fortuitously and not in a systematic way. At the very least, there should be closer liaison between the manpower planning section of the National Commission for Development Planning and the university authorities.

There should also be closer contact between the teaching departments and those who hire graduates, whether in the public, parastatal, or private sector. Admittedly the "consumers" of the university's graduate output are usually represented on the

Boards of Studies, which organize the structure and content of study programs, but this participation is often of a very formalized nature. Much closer contact and interaction are needed at an earlier stage so that the consumers' needs can be understood and built into the program of instruction and study.

Attaining these goals implies two things that may prove a stumbling block for the university. One is that to enable it to respond quickly and effectively to needs as they are identified, the university will have to restructure its procedures and bureaucracy. The slowness with which the institution can adapt itself to accepted priorities has reduced its credibility in a number of public sectors and has caused a notable degree of demoralization among its own staff. An example is the proposal to refashion the School of Education into a professional school that caters to a variety of pressing needs in the educational field, without being confined just to producing secondary school teachers. The proposal was thoroughly considered and researched six years ago, but has not yet been implemented (or rejected).

Second, if the university's programs are to be tailored to fit users' needs more closely, academic standards may have to be redefined. From the outset, the university adopted wholeheartedly the Lockwood charter that it be "an institution which on merit (would) win the respect and proper recognition of the academic world" (NRG 1964, p. 1). However, the university seems to have interpreted this principle in such a restrictive way, that formal academic requirements have come to play a more important role than the substance that underlies them. For example, five O-level passes in a suitable combination ensure admission, but adequate allowance is not made for other forms of pre-university preparation, especially work experience. This had led to the phenomenon of applicants who have been denied admission to the university on the grounds that they are not suitably qualified, seeking and gaining admission to institutions abroad where they are given advanced standing for earlier training or experience, and where they complete their studies successfully.

The same restrictive view of academic requirements is seen in the university promotion procedures, which place heavy stress on traditional forms of scholarly publication, but less on thoroughly researched technical reports and internal seminar papers, and even less on accomplishments as a university teacher. Responsiveness to the nation's real needs requires considerably more flexibility in admission requirements, the appointment and promotion of staff, and the content of programs.

The Quality of Graduates

The university could pay more attention to another Lockwood principle, that "the evident quality and subsequent performance of the men and women to whom degrees have been awarded will end all remaining argument about the international recognition of the University's awards" (NRG 1964, p. 2). The university is now sufficiently mature not to be unduly concerned about international standards. Moreover, the performance of its students in postgraduate studies abroad has to some extent validated its programs However, some people have expressed concern about the mediocre quality of some of those who do not go abroad and their inability to respond flexibly, creatively, and competently to the responsibilities that are placed on their shoulders. University staff are aware of this problem and of the challenges that graduates face, but many of them feel that they cannot adequately prepare their students for their future responsibilities because they are tied, by the students themselves, to a method of teaching that does

not go much beyond the expository method of school teaching; because students perceive university learning as consisting primarily of the reproduction of poorly assimilated lecture material; and because resources (textbooks, library materials, reproduction facilities, science supplies) are so limited that a teaching style that forces students to think and penalizes those who do not cannot in fairness be adopted.

The introduction of courses for staff in university teaching methods might help to improve the situation, although significant improvements may not be possible while textbooks and teaching materials remain so scarce. In addition, the university might consider adopting much more rigorous standards for student progress, particularly by restricting the possibility of repeating courses and examinations. The present system of gradually accumulating course credits enables students to meet degree requirements over a long period of time, but the course of study is likely to be so disjointed that it provides only students of exceptional quality with a sound, all-round university education.

Female Students

As noted earlier, the higher one ascends the educational ladder, the lower the female participation rate. This is all too true of the university. Although the records showing enrollment by sex and field of study are incomplete, enough are available to show that women students seldom constitute more than 20 percent of the undergraduate enrollment (table 17.1). The proportion of graduating female students is higher than their proportion in the enrollment warrants (table 17.2), but this is accounted for by the preponderance of female students in some diploma and certificate courses that last for only one or two years and that have a high passing rate. At the degree level there is no evidence to suggest that female students do any better or worse than their male counterparts.

In addition to being underrepresented in the overall enrollment, female students are severely underrepresented in the sciences. Between 1982 and 1987 they averaged just 10.9 percent of the total enrollment in science-based disciplines, whereas they formed 28.5 percent of those in the humanities. In the sciences they are most strongly represented in the medical school where, in addition to the medical degree program, they can enroll in nursing degrees and diplomas. However, there has never been a female student in the mining school, and only two have ever registered for engineering. In education they constitute about 25 percent of the full-time enrollment, but their largest representation is in humanities and social sciences where they account for 37 percent of the enrollment. At the degree level, between 1974 and 1985, 9.2 percent of the science degrees awarded and 19.7 percent of the humanities degrees were to women.

This severe underrepresentation of female students has its origins in the underrepresentation of girls at the upper primary level, the further contraction of their proportion at the selection points for junior and senior secondary school, and the consistently lower level at which girls perform in public examinations. In the majority of cases, the university admits applicants on the sole basis of performance in these examinations and has no special quota to ensure the balanced representation of girls. The fact that so few women qualify for university training, especially in the sciences, is a cause for concern. Although the remedy does not lie with the university, but much earlier, with the society and the education system, examination of the roots of the problem by the university might be helpful.

Staffing

In common with several developing countries, the university has difficulty in attracting and retaining academic staff in the numbers and specialties required. Because so little development of high level manpower had taken place at the time of Zambia's independence in 1964, the process of building up a cadre of local teaching and research staff was slow, and is not yet over. Approximately half the teaching and research staff are now Zambians; the remainder are recruited from abroad.

The university has never been able to fill all its posts. Even in 1975, before the effects of the economic crisis were felt, only some three-quarters of the posts were filled, and this ratio has declined to about two-thirds during the past five years. The decline has not come about because of any significant drop in the number of expatriate lecturers, but is due principally to additional posts called for by the increased number of students and the introduction of new subjects.

Given the number of approved posts, the theoretical staff to student ratio of one to seven is very generous (table 17.3). However, given the number of unfilled posts, the actual staffing ratios of 1 to 10 or 11 are less generous. They also vary from one school to another. In general the science schools have more generous ratios than the humanities schools, but again the ratios vary with the subject. In the science area, natural science and environmental studies lack staff, as do business studies and education on the humanities side. Thus, although in broad terms the university does not suffer from gross understaffing, human resources are unevenly distributed, leading to individual schools, departments, and disciplines being inadequately catered for.

The number of expatriate staff has remained steady for several years. Part of the reason for this is the support received from donor countries: in 1986, about half the expatriate staff were completely or partly supported by aid arrangements with various countries. The remainder of the non-Zambian staff were hired on the same basis as Zambians, but with provision for the university to pay terminal gratuities and for the banking system to transfer funds abroad. Difficulties over the latter arrangement, arising from Zambia's shortage of foreign exchange, may precipitate the departure of some of the unaided expatriate staff. Expatriates still form a disproportionately large component of the senior staff, accounting for more than three-quarters of those at the level of senior lecturer and above in 1983. To some extent this is because the aid agencies have tended to give preference to experienced teachers who could help build up the capabilities of the departments in which they were located.

The Staff Development Program

Although the university's staffing situation is not perfect, it could not be at its present strength were it not for the vigorous staff development program into which it has injected over one-tenth of its annual budget since 1975. At the program's peak in 1982, the number of trainees for academic posts was the equivalent of about two-thirds of those actually in post that year. If there was no wastage among current staff and trainees, and no need for further training of existing staff, the program as it stands in 1987 would see the Zambianization of staff almost completed.

From 1970 to 1987, the program provided 1,022 man-years of training for academic staff at the Ph.D. level and for a few senior administrative staff; 1,493 man-years for first degree holders who have shown potential as members of the academic staff, usually to enable them to complete master's degrees; and 641 man-

Table 17.3 Academic and Nonacademic Staffing Ratios, University of Zambia, 1975-85

Year	*No. of full-time students*	*Approved no. of teaching posts*	*No. of students per teaching post*	*Filled teaching posts*	*No. of students per filled teaching post*	*Filled nonteaching posts*	*No. of students per nonteaching staff*
1975	2,587	324	8.0	250	10.3	n.a.	n.a.
1976	2,326	325	7.2	235	9.9	1,677	1.4
1977	3,351	348	9.6	264	12.7	1,930	1.7
1978	3,529	402	8.8	n.a.	n.a.	n.a.	n.a.
1979	3,761	465	8.1	335	11.2	2,028	1.9
1980	3,813	445	8.6	348	11.0	2,034	1.9
1981	3,897	491	7.9	334	11.7	2,249	1.7
1982	3,828	497	7.7	347	11.0	2,093	1.8
1983	3,975	587	6.8	386	10.3	2,272	1.7
1984	4,174	591	7.1	436	9.6	2,573	1.6
1985	4,352	625	7.0	410	10.6	2,528	1.7

n.a. = not available

Source: University 1975-85, *Annual Reports*.

years for staff in technical and other support areas. The exact number of trainees in the different categories is not known, but the number of awards is estimated at 225 for Ph.D. and comparable studies, 600 for master's programs, and 170 for other forms of training.

The staff development program has helped raise the level of Zambianization from 9.6 percent in 1975 to 47.3 percent in 1985. Most of the training was conducted at universities abroad, principally in the United States, the United Kingdom, and Canada. The staff development award covers all program-related expenses: fees, travel (including the family of a married trainee), equipment and books, living allowance, and research expenses. If trainees are already on the university's staff, they retain their salary; otherwise they are appointed on a special staff development salary scale.

In addition to its own resources, the university was able to call upon fellowships awarded under technical assistance, cultural exchange, and scholarship arrangements to help defray the costs of the program. It could not have accomplished as much as it did without this form of aid, which in May 1987 was helping to support 98 of the 209 on the program. The cost per fellow has increased dramatically in recent years, the real cost in 1986 being more than twice what it had been three years earlier. In part, this reflects the rising real costs of university fees abroad, especially in the United Kingdom, of transport, and of living allowances, but it also reflects the higher salaries the university must pay to catch up on inflation at home, as well as the larger number of senior persons in the program.

The staff development program is one of the university's success stories and a tribute to the foresight of its originators, the commitment of the university's chief executives, and the dedication of the program's administrators. Although the university did not escape the financial hardships that struck the rest of the country, it was able to maintain and expand this program steadily, and always received the necessary cooperation from government and banking authorities to transfer funds abroad.

However, success has come at a price. The regular commitment to the program of over 10 percent of the university's resources has been a serious drain. No comparable commitment was made to develop the library, purchase textbooks, or obtain apparatus and supplies for the sciences. Even more costly were some of the program's backwash effects, especially the adverse way it affected the development of postgraduate work at the university. Each year the cream of the year's graduate crop was appointed to the program and sent abroad to pursue master's studies. A few stayed at the university, but in 1987, only 19 out of 209 fellows were studying locally. Clearly, the development of local postgraduate programs was inhibited by the practice of sending the best qualified candidates abroad. Some interaction with the academic world outside Zambia is obviously desirable, and clearly Zambia could not provide training in every specialty it needed. Nevertheless, more effort and more resources could have been devoted to the development of local postgraduate programs. This can still be done by redirecting some of the resources and aid going to the staff development program.

Staff Attrition

The vigorous development of local postgraduate programs, and the institutional and resource growth that this would imply, would help to remove one of the sources of staff discontent at the university and one of the factors contributing to staff wastage, namely, the lack of opportunity and incentive for research. The loss of

staff, especially more experienced and highly qualified staff, has caused concern in recent years. Up to May 1987, the university had lost a total of 123 academic staff members, roughly half of them since the beginning of 1983. The high attrition figures in recent years are partly due to the larger number of Zambian staff who, as highly qualified nationals, can readily obtain rewarding and challenging employment in areas outside the university. Of the staff who left, about half resigned, a quarter were granted leave of absence or were seconded to government service, and a quarter had their services terminated (mostly, for failing to return after postgraduate studies). Information on the subsequent activities of more than half of those who left is also available: about 30 percent went into government service, 25 percent secured positions with international bodies and United Nations agencies (mostly outside Zambia), and 25 percent found employment in other countries in southern Africa.

Various factors have led to these losses, some, but not all, outside the university's control. The reasons cited by staff for leaving include dissatisfaction with salaries and conditions of service, especially with regard to loans and accommodation; frustration with insensitivity to personal problems; exasperation with the apparent subordination of teaching and research to administrative concerns; excessively high teaching loads; and poor research facilities.

At the level of those supported for master's studies, the total recorded loss since the staff development program began is 45 (some 3 percent): 14 failed their programs entirely, 14 did not return after their studies, 6 had their fellowships terminated, and 11 resigned for various reasons. The rate of loss from the program is small. That speaks well for the caliber of those sent for studies and for their loyalty to the university and the country.

The subsequent loss of Zambian lecturing staff (6 percent per year) is more serious. The loss of these staff members is all the more keenly felt because many of them were senior staff. To the extent that deteriorating financial conditions within Zambia as a whole, as well as comparatively low university salaries, have contributed to these losses, they can be seen as a function of Zambia's economic problems. Their increase in recent years suggests that if conditions grow worse, the university may sustain even greater losses.

Financing the University

The most striking feature about the university's financing is that its income did not decline in real terms during the years of shrinking national resources. Instead, it increased substantially, with the government grant during the years 1982-85 being almost 50 percent higher than that during 1977-80 (table 17.4). Not all this increase was accounted for by increased enrollment: the expenditure per student, at constant prices, was 10 percent higher in 1984 than it had been in 1977 (table 17.5). The university's income from all sources has grown in real terms since 1977 at an annual average rate of 4.7 percent, but the number of full-time students grew at a rate of no more than 2.5 percent.

Government provides funds to the university in two ways: as a grant in aid for running costs and in the form of student bursaries. The annual grant has remained stable at about 77 percent of the university's income since 1979, but between 1979 and 1984, bursary payments increased from 13 to 15 percent of the university income. Hence, over 90 percent of the university's income originates directly from public funds, and this proportion is increasing. The balance of the income comes from fees from nongovernment sources, from interest on

Table 17.4 Government Grant to the University, 1975-85

Year	*Grant in current kwacha*	*Grant in 1977 kwacha*
1975	5,887,500	--
1976	8,640,000	--
1977	9,000,000	9,000,000
1978	9,600,000	8,672,000
1979	11,280,000	9,148,000
1980	12,900,024	9,402,000
1981	19,707,011	12,957,000
1982	27,25[illegible],454	15,848,000
1983	22,465,809	11,061,000
1984	27,813,276	12,433,000
1985	34,835,581	14,190,000

-- = not applicable

Source: GRZ 1975-85, *Financial Reports*.

Table 17.5 University Expenditure per Student, 1975-84

Year	*Actual expenditure (kwacha)*	*Number of full-time students*	*Expenditure per full-time student*	
			Current kwacha	*1977 kwacha*
1974	7,575,167	2,882	2,628	--
1975	7,844,932	2,587	3,032	--
1976	9,769,817	2,326	4,200	--
1977	11,712,541	3,351	3,495	3,495
1978	11,969,233	3,529	3,392	3,064
1979	14,786,491	3,761	3,932	3,189
1980	16,960,582	3,813	4,480	3,242
1981	21,616,039	3,897	5,547	3,647
1982	26,585,774	3,828	6,945	4,038
1983	31,761,886	3,975	7,990	3,934
1984	36,484,06[illegible]	4,174	8,741	3,907

-- = not applicable

Source: University of Zambia data.

investments, from rents on property, from the university farm (about 0.8 percent of the total income), and from sundry other sources.

During the first few years of the economic setbacks, the university, like other institutions, was thrown into a state of financial disarray. Expenditure exceeded

income in 1975 and 1977 through 1979, but this state of affairs did not occur again until 1984, by which time the university had accumulated sufficient surplus funds to cushion the excess. To keep the deficit within manageable proportions during the earlier years, and to facilitate its financial operations during other years, the institution resorted to some undesirable financial procedures: financing recurrent expenditure from the capital account, using earmarked funds for normal operations, running a bank overdraft that was too large for a noncommercial undertaking (over K979,000 in 1980), retaining taxes deducted from staff salaries for operating expenses instead of passing them on to the income tax authority (about K1 million by 1981), and delaying before settling debts (Nyirenda 1986). However, this downward slide into financial anarchy was arrested after 1981 by the provision of larger government grants that enabled the university to straighten out most of its accounts. Thereafter its financial position improved, but the heavy dependence on government funds remained. The university itself was not very successful in generating income, despite considerable rhetoric on the subject.

The university's actual annual costs are considerably higher than the published figures. This is because they do not include items paid for by technical assistance: complete support for around 50 members of staff, partial support for 50 or so more, equipment, transport, teaching materials, books, and training awards for those on the staff development program. Neither do the published figures reflect all the support provided by aid and other agencies for research and publishing undertakings and for participation in conferences locally and abroad.

The Use of Funds

The proportion of funds used by the teaching schools has declined from year to year, from 39.2 percent in 1974 to 29.9 percent in 1984 (table 17.6). At the same time, the proportion used for administration and support services (estates organization, material resources center, computer center, horticultural office, and so on) grew

Table 17.6 Distribution of University Expenditures, 1974-84

Year	*Administration and support services*	*Staff development*	*Student accommodation*	*Teaching schools*	*Research*	*Library*
1974	29.4	7.7	18.5	39.2	2.3	2.9
1975	29.0	10.1	15.0	40.1	2.5	3.2
1976	28.6	10.9	15.7	39.4	2.7	2.8
1977	28.5	12.9	16.4	38.0	2.1	2.1
1978	30.2	12.2	13.7	39.3	1.7	2.4
1979	29.9	13.0	16.6	33.1	1.5	3.3
1980	34.4	12.7	14.3	34.9	2.1	1.7
1981	36.8	11.6	14.4	32.7	2.3	2.1
1982	38.2	11.4	13.6	32.6	2.1	2.0
1983	40.2	11.2	13.2	29.8	2.3	3.3
1984	38.6	12.6	13.3	29.9	2.7	2.7

Source: University audited accounts, 1974-84.

from 29.4 percent in 1974 to 38.6 percent in 1984 (with a high of 40.2 percent in 1983). Research activities have accounted for a little over 2 percent of the university's annual spending, while about 2.5 percent is used for the library.

As table 17.6 shows, the allocation of resources shifted in 1979-80 away from the teaching schools and into administration and services. This shift coincided with the establishment of the University Federal Office in January 1980, following the appointment of the chief executives in November 1979. The obvious conclusion is that the development of the federal structure and the resulting increase in administrative and service costs led to a distorted use of university funds, with an everdeclining proportion going to the teaching schools while the number of undergraduate and postgraduate students was growing steadily, if slowly, and when two new schools of study were coming into existence (in Kitwe). These facts lend strong weight to staff concern that the university's teaching activities have been subordinated to administration.

A further index of the unbalanced use of university resources is the large number of nonteaching and nonresearch staff. The university averages three such staff for every two full-time students, or about six for every member of the teaching and research staff. This clearly absorbs a considerable proportion of the university's budget. Some of the staff concerned belong to the teaching schools and research units as administrators, secretaries, or technicians, but this number has remained relatively steady. Overall, however, since 1979, the nonteaching workforce has been growing at an annual rate of 3.7 percent. During the same period the teaching staff actually in post grew at 3.4 percent and the number of full-time students at 1.4 percent. It is significant that the number of ancillary staff was allowed to grow so rapidly when restraints were being experienced in the economy and when the university could not supply the teaching schools with necessary materials.

Even though enrollments in the science schools are smaller, these schools account for a larger proportion of the spending. Thus, in 1975, a year when 39.1 percent of the graduates received science degrees, the science schools accounted for 24.2 percent of the university's spending, and the humanities schools, with 60.9 percent of the graduates, accounted for 15.6 percent. By 1984 the proportions for each group had fallen, reflecting the shift away from spending on the teaching schools, but the gap between the sciences and humanities had widened, reflecting the larger number of science schools and the increase in the proportion of students taking science programs: science schools, with 48.9 percent of the enrollment of full-time students, accounted for 19.7 percent of the total university expenditure for 1984, while the humanities schools, with 51.1 percent of the enrollment, accounted for 10.2 percent. The ratio of the expenditure on the science schools to that on the humanities increased from approximately 1.5 in 1974 to 1.9 in 1984. The university, therefore, spends almost twice as much on the science schools as it does on the humanities, even though the enrollments are smaller in the sciences. This shows that in the allocation of resources the university is successfully pursuing its policy of according priority to the sciences, even though the allocation to all the teaching areas taken together represents less than a third of its total budget.

The Cost of a University Graduate

For the period 1982 through 1984, the average teaching expenditure per student was highest in medicine (K6,800 per annum), followed by agriculture (K4,900 per annum). It was lowest in business and industrial studies (K950 per annum),

followed by education (K1,240 per annum). These figures show no more than the teaching costs. To arrive at the full annual cost of a student in the different schools we must add the expenditure incurred by the university in all other areas. Let us assume that this expenditure is shared equally over all schools and all students, except for expenditure on the library and research, since these are academic areas in their own right. The remaining nonacademic expenditure incurred by the university averaged K4,868 per student per year during 1982 through 1984. (Note that the nonteaching expenditure per student is more than five times the per student teaching cost in business and industrial studies.)

Using these figures and considering the duration of a degree program, we can estimate the approximate cost of producing a graduate in each discipline (at 1982-84 prices). This ranged from K74,000 for a full medical degree to less than K25,000 for a B.A., a B.A. with education, or a degree in business administration. A science degree cost some K30,000, and degrees in engineering or mining ran at K38,000.

The size of the estimated annual cost needs to be borne in mind when considering student wastage from the university. Each "student failure year" implies a loss of some K6,000 for a humanities student and K8,000 for a science student. During the period 1979 through 1986, such losses amounted to a total of over K7 million. In addition, costs are incurred if a student takes longer than the minimum period to graduate. Only 50 percent of the students taking science degrees, whether the straight B.Sc. or the B.Sc. with education, graduate after four years, and some take six or more years. While they do not spend all these years in full-time studies at the university, their participation as part-time students nevertheless constitutes a cost.

The magnitude of the cost of producing a graduate is relevant to all discussions about passing on some of the costs of university education. If the full cost were to be passed on to students, it would clearly impose an intolerable burden, since few students could raise the amounts needed or would be willing to begin their working life shouldered with a debt of the size implied (at least three times the starting salary of the graduate entering government service). If prospective employers were required to compensate the government or the university for the costs of employees' degrees, the likely result would be a lower demand for graduates (though this would not be altogether undesirable in areas where graduates are employed because of their paper qualifications and not because of their expertise). A more workable solution might be for students to be personally responsible, by direct payment or through a loan, for all personal expenses (accommodation, allowance, transport, books, stationery), for a future employer (or self-employed graduate) to be responsible for the teaching expenses, and for the university to be responsible for all nonteaching expenses and library costs.

The Cost of University Closures

Major student disturbances led to closures of the university for a total of 400 days in 1976, 1982, 1984, and 1986. In addition, minor disturbances disrupted teaching on numerous occasions. Nyirenda (1986) has analyzed the issues involved in the 1982 closure, but the factors underlying the more recent disturbances still await a comprehensive investigation. We do not propose to go into these here, our task being the simpler one of estimating the financial cost of the four major university closures. Knowing how costly these were might help the government and the university to work harder to prevent any further closures. It might also stimulate

both authorities to work with a greater sense of urgency for the speedy reopening of the university, in the event of another closure.

We estimate the cost of closures by treating as loss the costs of paying staff and maintaining nonteaching operations during closure periods. These costs were not a complete write-off since some of the university's normal work, such as its research and the teaching of correspondence and postgraduate students, continued during these periods. But since the university's foremost activity is the direct teaching of undergraduates, the method gives an estimate of how great a loss was incurred. Taking account of the daily running costs at the time of the four major closures, the total loss was about K67 million (at 1986 prices). If we generously allowed that such teaching, research, and consultancy activities as continued during the closures accounted for half the daily cost, the four closures since 1976 still entailed a loss in excess of K30 million.

The government bore the greater part of this loss, since the government is the principal source of funds for the university. That a loss of such magnitude could occur, almost without question, is remarkable. That it could occur during a period when public funds could not be found to provide adequate support for primary and secondary schools reveals the willingness to direct resources to higher education that could be used more profitably at other levels. The steady, unquestioning financial support of the university when closures prevented it from performing its primary teaching task manifests very clearly how powerful an institution the university is when scarce resources are being allocated.

The Salaries of Teaching Staff

This section will examine faculty salaries from 1975 to 1985. It will not take account of the new scales that became operative in April 1987. University salaries have grown very rapidly at current prices. By 1985, the entry salary at the lowest level of academic appointment was higher than a trained graduate could earn after eight years of government service. This explains why university appointments are coveted. It also explains why members of the public, and civil servants in particular, tend to look askance on claims by university academics that their salaries are poor. University salaries have always tended to be high, whether in relation to other sectors or to the GDP. There is also a tendency for them to improve more rapidly than salaries in other areas. In 1975 academic salaries ranged between 11 and 21.5 times the per capita GDP; in 1985 the range had become 14.1 to 28.2 (table 17.7).

The development of university salaries in real terms has varied with the level of appointment. The salary of a professor lost almost none of its purchasing power between 1977 and 1985, while that of a senior lecturer was higher in 1985 than it had been in 1977 (though lower than it had been in 1981). Salaries at all other levels declined 3 to 9 percent between 1977 and 1985. During the same period the per capita GDP lost 24 percent of its 1977 value, and the salaries of most senior public officials lost 50 percent or more of their value. Although these comparisons imply that university staff have been very favorably treated, academics are quick to draw comparisons with salaries outside the country. In these terms, the university salaries are not high. In real dollar terms, a professor received US$11,400 in 1975 and US$7,400 in 1985. The lowest level of lecturer received US$5,000 in 1975 and US$3,700 in 1985. The low value of university salaries, when converted into dollars, is a major contributor to the problem of staff wastage.

Salaries are frequently viewed in the context of overall conditions of service. Probably the most favorable aspect of these at the university relates to leave. Three months leave on full salary are provided every second year, with two weeks "local leave" in the intervening years. In addition, since 1982 upon completion of seven years of service, an academic member of staff has been able to enjoy sabbatical leave, on full pay, for an entire academic year. Housing is provided at below market rents, though with the increase in numbers, staff may face a long delay

Table 17.7 University Teaching Staff Starting Salaries, Selected Years

Position	*1975*	*1977*	*1981*	*1984*	*1985*	*1987*
a. In current kwacha						
Professor	7,400	8,232	13,800	14,208	20,160	31,680
Associate professor	6,800	7,812	12,060	12,420	17,760	26,640
Senior lecturer	5,600	6,324	10,080	10,500	15,696	22,644
Lecturer I	4,000	5,700	9,600	10,056	13,044	20,388
Lecturer II		4,956	7,980	8,400	11,100	16,884
Lecturer III	3,200	4,248	7,164	7,584	10,092	15,228
b. In 1977 prices		*1977*	*1981*	*1984*	*1985*	
Professor		8,232	9,073	6,351	8,212	
Associate professor		7,812	7,929	5,552	7,234	
Senior lecturer		6,324	6,627	4,694	6,393	
Lecturer I		5,700	6,312	4,495	5,313	
Lecturer II		4,956	5,247	3,755	4,521	
Lecturer III		4,248	4,710	3,390	4,111	
c. As multiple of the per capita GDP		*1977*			*1985*	
Professor		21.5			28.2	
Associate professor		20.5			24.4	
Senior lecturer		16.6			22.0	
Lecturer I		14.9			18.3	
Lecturer II		13.0			15.6	
Lecturer III		11.1			14.1	

Source: University contract documents.

before a house becomes available. Loans are not as readily available as in some parastatals, largely because the university does not have enough liquidity. Moreover, parastatal employees enjoy fringe benefits such as transport, entertainment allowances, and service charges that their university colleagues do not enjoy. Salaries in the parastatals may also be much higher (Bardouille 1987). Hence, although university salaries have more or less maintained their 1977 value

and conditions of service have been upgraded, the overall position of a university staff member does not compare favorably with that of some parastatal staff.

Postgraduate Studies and Research

As already noted, the practice of appointing outstanding graduates to the staff development program and sending them abroad for master's studies has had the counterproductive effect of slowing down the development of postgraduate studies at the university. In addition, the development of postgraduate work was hampered by the lack of continuity of senior staff, most of whom were expatriates on relatively short contracts, and the inadequacy of resources, such as books, journals, and scientific equipment. The development of programs at this level was also effectively discouraged by the absence of any policy governing financial support for postgraduate students. Within the university, the development of postgraduate studies never appears to have received the sustained care and concern that were required to get them properly off the ground. The lack of urgency with which the university views postgraduate work comes through in the length of time it takes to process students starting and completing postgraduate studies.

In part reflecting the lethargic development of postgraduate work and in part contributing to it is the university's generally weak research base. Excellent research has, of course, been conducted by individuals and by research institutes, but there has not been enough of it, and to too great an extent it has depended on the interests of individual researchers and not enough on comprehensive research programs developed by departments in response to national needs. Moreover, because of the limited resources that the university can make available for research, much is being undertaken at the request of external agencies who can provide funds. In many respects this has turned much of the university's research work into a series of consultancies. No doubt these are valuable and possibly even necessary, but they do not always fit into a coherent program of research adopted by a research unit or a school, and mean that the initiative for undertaking research lies outside the university.

The conduct of worthwhile research has probably also been inhibited by remoteness from the government and other bodies that might use the outcomes of such research. Where close contact has been established, as between the Rural Development Studies Bureau and the Ministry of Agriculture, or between departments in the medical school and the Ministry of Health, research is actively pursued and its outcomes used. Where this contact is lacking, the research is often more haphazard and projects originate and terminate without significant impact on bodies outside the university. Perhaps the need to see research ending with publication in a scholarly journal, and not merely with a technical report relevant only locally, has led staff to concentrate more on what is acceptable in the international, scholarly world and less on what is needed in Zambia. If this evaluation is correct, then it would indicate that too rigid an interpretation of Lockwood's view of the university as "a seat of learning, a treasure-house of knowledge and a creative centre of research" (NRG 1964, p. 1) has tended to overshadow the complementary view that the university must be responsive to the country's needs.

Limitation of resources is a further and very real inhibiting factor on the amount of university-initiated research that is undertaken. In many areas the chief resource that is lacking is time, although the recent granting of the sabbatical year will provide some relief. But staff are generally so tied down with teaching

activities, with bureaucratic procedures, and with the need to attend personally to countless small details and arrangements that should be taken care of by a competent administrative and secretarial staff, that they have little time left during the teaching year to undertake meaningful research. Supervision of student activities during vacations or teaching of correspondence students may make such inroads into vacation periods that little time remains for major research. The problems of payments abroad make it difficult to ensure the supply of journals, books, equipment and materials needed to support and stimulate good research, while the rapid increases in local costs have not been accompanied by corresponding increases in local research grants. Hence the volume of research has been affected by the financial difficulties, although these are only one among many factors that have a bearing on the somewhat haphazard and uneven flow of good research from the university.

Conclusion

This review of university activities during the time of financial hardship was not intended to be comprehensive. An exhaustive study would look more closely at the work of the individual schools and research units. It would also analyze the very structure of the university. This review has concentrated primarily on the way the university has used its resources to produce high-level manpower, and secondarily on postgraduate studies and research.

The production of manpower received the highest priority, and in terms of numerical output, the university's impressive record has not been impaired by the economic problems experienced in other sectors. In the absence of good information on precise manpower needs, assessing the match between output and actual needs is not easy, but the supply in several major areas of need has been large and continues to grow. Likewise, in the absence of a thorough survey of employers' perceptions and experiences, determining how well graduates perform, or are equipped to perform, when in employment, is not easy. However, some staff misgivings about student learning behavior coincide with informal reports that a significant proportion of graduates are ill-equipped to perform competently and flexibly. The growing scarcity of teaching resources is likely to aggravate this problem.

Several circumstances combined to underplay the need for developing vigorous postgraduate programs. The low priority accorded to postgraduate studies was accompanied by a relatively low priority in fostering research, notwithstanding the establishment of additional research units. The growth within the university of a locally developed sand relevant research program appears to be in danger of being frustrated by the scarcity of resources for local initiatives.

During the years of financial difficulty the university fared very well. Its financial and real resources increased enormously during years when other national institutions were struggling to survive. Although greatly concerned with its own financial management, the university has not shown equal concern for the efficient use of its resources to meet its objectives. This has shown itself in the remarkable shift of expenditure away from the teaching sectors and into the administrative and service sections and in apparent indifference to the financial costs of university closures.

Ironically, too great a concern with standards may be preventing the university from providing as much service as it could to national needs. Good quality work that is pertinent to national needs is probably more of a priority than research and publications that are too esoteric to address actual requirements. Closer

relationships with the users of university products would very likely help the institution perform better as a producer of manpower and of high-quality research. At the same time, students may need to be evaluated more rigorously, with some investigation of whether the present system of qualification by an accumulation of course credits is sufficiently discriminating.

The channeling of more resources to teaching and research activities, in the form of staff, books, journals, stationery, transport, equipment and materials, and a clearer orientation of the university's resources to its primary teaching and research objectives, should permit more imaginative teaching of students. Such a reordering of priorities does not entail additional financial resources; it does entail a clear perception of the need to use resources in accordance with priorities.

18

The General Level of Education

Before concluding this book, a review of the general educational and literary levels of the population is appropriate. Such information helps to provide a context for the accomplishments of the past and to delineate the magnitude of what still remains to be accomplished. The principal source of information is the 1980 census.

The Educational Level of the Population

In general, the educational level of the Zambian population is low. In 1980, 42.2 percent of the population aged five years and above were reported as having had no schooling, while no more than about 10 percent had a secondary or higher education. Yet the situation has improved significantly since 1969, when more than 50 percent had no schooling and when less than five percent had a secondary or higher education. The improvements between 1969 and 1980 occurred when the population was growing very fast, hence the higher proportions reported for 1980 represent very large increases in absolute numbers.

The seemingly large proportion of 42.2 percent with no schooling should be looked at in the light of what was stated earlier about the age of primary school children. The legal school entry age is seven or eight, but many children do not begin school until they are much older. This inflates the number of children among those with no schooling and distorts the figures. We can obtain a better picture by considering a more adult population, namely, those aged 15 and above. Of this group, 35.8 percent had no schooling, 47.1 percent had a primary education only, 15.9 percent had a secondary education, and 0.14 percent had a university education (table 18.1). Even in these terms the educational level is low, and clearly much remains to be done.

As table 18.1 shows, sex differences in educational attainment are pronounced: at every level the position of males is more favorable than that of females. Similar differences are found in the population's educational profile when it is classified as rural or urban: the rural population is generally less well educated than the urban population. A larger proportion of the rural people had no education, and a smaller proportion had a secondary or higher education. The most seriously affected rural areas were the North-Western province, where 60.7 percent had no schooling, the Eastern (58.5 percent), and the Western (56.0 percent). The most favored urban

Table 18.1 The Educational Level of Zambians Over the Age of 15 as of August 1980

Educational Level	*Total*	*Male*	*Female*	*Rural residents*	*Urban residents*
No schooling	982,354	317,321	665,033	779,439	202,915
Primary	1,293,210	681,481	611,729	758,776	534,434
Secondary	436,492	292,759	143,733	137,898	298,594
Higher education	3,740	2,758	982	524	3,216
Not stated	27,645	16,112	11,533	13,271	14,374
Total	2,743,441	1,310,431	1,433,010	1,689,908	1,053,533
Percentage distribution	*Total*	*Male*	*Female*	*Rural*	*Urban*
No schooling	35.80	24.20	46.40	46.10	19.30
Primary	47.10	52.00	42.70	44.90	50.70
Secondary	15.90	22.30	10.00	8.20	28.30
Higher education	0.14	0.21	0.07	0.03	0.31

Source: CSO (1985a, table 4.3).

areas were in the Central province, where the proportion having no schooling was as low as 27.4 percent, in the Copperbelt (28.3 percent), and in the Luapula province (30.1 percent).

This rural-urban dichotomy appears also at the level of those with primary education. The proportion with educational attainment limited to grades 1 to 4 is higher in rural than in urban areas, but for each of the upper primary grades, 5 to 7, the proportions in the urban areas are always higher. Thus, in addition to a high percentage of the rural population having no schooling, 56.9 percent had only four years of schooling or less, and only 19 percent had the full seven years of primary school. Much of this imbalance is due to the bottleneck that still prevents rural grade 4 children from enjoying automatic promotion to grade 5.

The educational impoverishment of the rural areas is also seen at the secondary and tertiary levels. It is remarkable that although secondary schools are not concentrated in urban areas, some two-thirds of all those who had a secondary education were found in urban areas. Clearly there must be a considerable influx of secondary school-leavers from the rural areas into the towns. Similarly, although no more than 10 percent of the intake to the University of Zambia comes from Lusaka, more than half the 1980 population with a university education was based in the urban parts of Lusaka province. The prospect of better job opportunities in urban areas clearly attracts the more highly qualified individuals. In the process rural areas are being drained of many of their most promising young people, and those best qualified to promote their development. There is no way of knowing whether this movement is continuing, or whether the more difficult economic conditions of recent years have affected it in any way. The 1990 census should help answer these questions.

Finally, the proportion of the population with higher education fell from 0.3 percent in 1969 to 0.2 percent in 1980. Given the high rate of population growth, such

a fall in proportions is perfectly feasible, even with a substantial increase in absolute numbers. However, the reported fall in proportions should also be interpreted in the light of the criterion used for higher education. The 1969 census indicated that 2,052 Zambians had completed technical or higher education, where higher education included those who had completed 12 years of schooling and some additional technical or professional training. The criterion for inclusion in higher education was therefore very broad. The 1980 census, however, using the more stringent criterion of 12 years of schooling and university level attainment, recorded 3,766 Zambian-born persons as having higher education (CSO 1985a, table 4.3). Not surprisingly, only 26 percent of these were female and only 14 percent lived in rural areas.

Literacy

No direct measures have been made of the extent of illiteracy in Zambia. Instead, indirect measures are derived from census data on the numbers who have had no schooling. This method overlooks those who might have become literate outside the formal school system, in particular, those who might have become literate through literacy classes. The number who became literate through their own informal efforts is probably very small, since such resources as reading and writing materials are not sufficiently widespread to support such efforts in an extensive way. But the number who have participated in literacy classes over the years is significant. Their exclusion from the estimates of the literate population means that this estimate may understate the true figure.

At the same time, many of those who complete the lower primary cycle but proceed no further in school probably relapse into illiteracy, partly because of the poor foundation the primary school can lay, partly because of the absence of suitable reading and writing materials in the home environment after leaving school and the lack of stimulation to use those that may be available. In a study of grade 7 school-leavers, Hoppers (1979, p. 14) referred to "their education withering away...even though it was often carefully nourished by re-reading the contents of their exercise-books." This is even more likely for grade 4 leavers. Between 1975 and 1979 approximately 112,000 children terminated their formal education at the end of grade 4. These and all the others who in earlier years had had no more than four years of primary education should probably be considered illiterate. Studies from other countries, such as Kenya, show that a large proportion of the participants in literacy classes are individuals who had completed some years of primary school, and that these individuals are no more proficient than their unschooled colleagues in acquiring (or reacquiring) literacy skills.

Thus, the illiterate population is taken to comprise all those with no schooling or with no more than a grade 4 education. In accordance with UNESCO recommendations, the literacy rate is determined on the basis of the population aged 15 and above. With these criteria Zambia's illiteracy rate in 1980 was 47.0 percent. This estimate is based on data provided in the census report (CSO 1985b, table 6.7), but does not agree with the estimate provided in the report itself. This latter extends the estimate of literacy to include those who had received as little as one year of schooling, and comes up with an illiteracy rate for 1980 of 36.2 percent, but admits that this is according to a rather broad criterion (CSO 1985b, p. 185).

The literacy rate for males is higher than that for females: 64.3 percent of the male adult population was literate, but only 42.6 percent of the female population.

The largest proportion of illiterate males is found among those aged 45 and above, whereas for the females the most illiterate group is mothers, aged 25 to 44.

Literacy Programs

The principal method Zambia is using to attack illiteracy is through the formal school system and the extension of primary education to all children. However, this approach can only be effective for the young and for future generations. For the existing population of illiterate adults two forms of literacy programs, basic and functional, are available. The basic literacy program concentrates on the direct teaching and learning of reading, writing, and simple arithmetic. In the functional program, literacy skills are taught as the vehicle for certain practical skills with immediate application to daily life, such as those relating to agriculture, health, and hygiene. Neither program has reached a very large audience: the total enrollment in the basic literacy program from 1966 to 1985 was just over 106,000, while the total enrollment in the functional literacy program from the time of its inception in 1971 up to 1985 was 53,680. Women have outnumbered men by four to one in each program, probably because of the higher rate of illiteracy among women.

The financial commitment to the eradication of illiteracy has always been very small, notwithstanding the strong verbal support provided by policy statements. Since 1975, the budget for literacy programs has fallen so sharply, that by 1985 it had been reduced to a mere 10 percent of its 1977 value. The rapid decline is probably attributable as much to a lack of real commitment to the eradication of adult literacy as to the decline in the availability of resources. Even during the years of prosperity, in the late 1960s and early 1970s, funds allocated to the literacy program were progressively reduced.

Why were more funds not made available to the functional literacy program? Early results were promising. In the year of its commencement, when it was applied to maize growing, the yields obtained by functional literacy students exceeded those of subsistence farmers by 300 percent and of small-scale commercial farmers by 25 percent, and in isolated cases the yields even exceeded those of large-scale farmers (Mwamba 1986). Although the intention was to extend the program countrywide, and texts were prepared for it in seven local languages, other priorities gobbled up the resources and the literacy program was allowed to decline. Its low status today suggests that an extensive attack on adult illiteracy is unlikely. Rather, the government seems to accept that with the passage of time and the extension of formal education to all young people the problem of adult illiteracy will eventually fade away. The draft statement on educational reform had recommended that responsibility for literacy education should be assumed by the Ministry of Education, and that an all-out campaign be launched to eradicate illiteracy in the shortest possible time (Ministry of Education 1976, pp. 20-23). Unfortunately neither proposal survived the subsequent rewriting of the draft.

19

The Robustness of the Education System

The foregoing analysis of aspects of Zambia's education system suppc .s most of the hypotheses outlined in the first chapter. Total resources for education have increased, but these increases were not commensurate with the system's growth. Consequently, the real amount spent on education declined at most levels, but not all sectors suffered equally. The more vulnerable areas bore the brunt of the cutbacks that had to be made in real terms: primary schools, teacher education, continuing education, out of school youth, literacy education. Such improvements as occurred were experienced by the more powerful and prestigious areas, namely, the university and some aspects of secondary provision. A small shift in the allocation of resources occurred away from the lower levels and toward the higher. In addition, structural changes occurred in the use of funds. At almost all levels an everincreasing proportion was reserved for salaries and an eversmaller amount for operating purposes and supplies; and at the university, an everincreasing proportion was used to provide administrative and other services and an eversmaller proportion was devoted to teaching and research activities.

At the same time, the government increasingly relied on the private sector for support, even though this necessitated some changes in cherished policies. The authorities explored almost every method of raising educational revenue from the public except directly charging tuition fees for public education. There was also increasing recourse to aid agencies for very diverse forms of assistance, ranging from capital investments to operating expenses.

The authorities tended to pay more attention and devote more resources to getting children into schools than on their accomplishments once there. Educational quality fell, and educational achievement, as measured by examination results, was mediocre. A relatively low level of performance persisted, with few signs of improvement, but with some signs of deterioration.

Despite all this, the system displayed a certain robustness. Indeed, one of the most striking features to emerge is the resilience of the education system. Notwithstanding the very severe decline in resources, it managed to stay afloat and continue doing what it was supposed to do. In the first few years of the setbacks, signs of considerable strain and disorientation appeared, but when education personnel and the general public had adjusted, things were brought back on course again. Quantitative expansion resumed its pace and educational opportunities were offered to the country's children in a way that had never been attempted before.

At the same time, the authorities exhibited an increased awareness of the need to improve quality.

Above all, there were the very encouraging signs that the teaching profession was standing up to the serious problems it had encountered and was developing strategies for dealing with financial problems and shortages. Self-reliance, self-help, self-renewal, and resourcefulness all became important key words in the educational world during the past decade, but more especially during the past five or six years. Although the odds were against them, some efforts were made to maintain standards, and even to improve them. But regardless of the standards, regardless of the quality, the people's faith in education's ability to deliver them and their children from the oppression of poverty remained as strong as ever. They not only continued to make sacrifices for it, but they undertook to support the education system in a way that would not have been thought possible in earlier years.

These considerations give rise to considerable optimism despite the gloomy economic prospects. What can the authorities do to capitalize on so much goodwill and readiness to assist? One thing, surely is to share responsibility where financing is shared. The community has effectively been cut off from the school, from what really goes on within its walls and from its professional life and activities. This divorce has been accentuated by an examination system whose aim is to select a small percentage of students to progress to the next stage of education, and which fosters a curriculum that turns its back on the community. This has led to many justifiable charges that the education the schools provide is irrelevant and alienates young people from their surroundings.

Thus, the community needs to be involved more directly in the total life of the school, including its professional affairs and, on occasion, even its actual teaching. This latter is probably essential if education is "to restore to their rightful status the African cultural heritage and the traditional social and human values that hold potential for the future and for progress" (Cisse 1986, p. 21). Community involvement and the redesign of the examination system so that it serves educational purposes and not merely selective, administrative functions, are prerequisites for the development of an education that is truly responsive to the people's needs.

The government must also recognize that nine years of education for all children, though a noble and praiseworthy goal, is something that it simply cannot accomplish with current or likely future resources. Instead, every effort should be channeled toward that sector of education where the majority of children are found: the primary sector. In other words, seven years of primary education are all that can be made universally available for at least a generation to come. Success in national development will depend more on success here than in any other educational sphere, and failure here will condemn the country to perpetual underdevelopment.

A further need in the education system is for more data about the system and for the use of such information in guiding policymakers' decisions.

Finally, and most difficult of all, is the clear need to finance education in ways that have not been practiced up to now, and the need to consider offering education in ways that have not been conventional up to now. The pincer squeeze of declining finances and increasing population make such considerations necessary. If Zambia is to achieve universal primary education by the end of this century, an additional 1.26 million primary school places will be needed if every child is to be assured of seven years of primary education. The government is unlikely to

achieve this by relying on conventional methods. Very few new sources for educational finances exist, and those that do will bring no more than marginal relief, particularly as they must originate from a population that is impoverished and from an economy that is in decline. Until efforts are directed to the design of these new methods, there is no way of knowing what form they might take, but it would be surprising if they did not make liberal use of the one resource that is available in abundance, the people of the country, who in the days before the introduction of formal education succeeded in equipping young people with an education that was both meaningful and satisfying.

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