

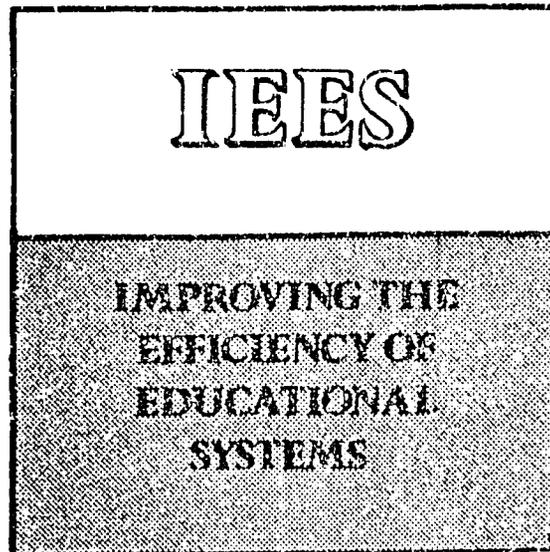
PART 10
89568

BOTSWANA

Sector Assessment

Executive Summary

June 1984



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Institute for International Research
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Agency for International Development
Contract No. DPE-5823-C-00-4013-00

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BOTSWANA SECTOR ASSESSMENT UPDATE

EXECUTIVE SUMMARY

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This assessment of the education and human resources (EHR) sector in Botswana reviews the country's education and training system in connection with national goals, needs, constraints, and opportunities. The study has been coordinated by an inter-ministerial Steering Committee chaired by the Ministry of Education (MOE). A team of USAID-sponsored specialists prepared this report in collaboration with professional staff of the concerned ministries and other public and private sector organizations.

The purpose of the assessment is to:

- strengthen the base for systematic planning of Botswana's human resource development;
- identify priority areas of education and training for the investment of internal and external resources;
- focus attention on the constraints affecting such investments; and
- provide a sounder basis for monitoring system performance.

The assessment begins with an examination of the capacity of the EHR system. This includes an economic and financial analysis of human resource development focusing on economic characteristics and performance, fiscal capacity, manpower demand and supply, and EHR program costs and rates of return. The sector-wide economic study and

comparative unit cost analysis result in a set of conclusions and recommendations which foreshadow findings throughout the assessment. The review of EHR system capacity also includes consideration of the country's management capability and its needs in this regard.

The assessment next addresses the formal education system, encompassing primary, secondary, and teacher education, and higher education. An assessment of vocational and technical education follows, with consideration of formal (in-school and government-operated) and nonformal programs, as well as those offered by private sector employers and proprietary institutions. The final part of the report examines nonformal education. This focuses, though not exclusively, on the national extension system and the delivery of education and services in the areas of health, agriculture, and basic life skills (e.g., literacy and income generation skills).

Each subsector assessment first presents a status overview covering goals and strategies, and current programs. It then identifies needs, constraints, and plans, and analyzes present strategies with respect to national goals and system capacity. This analysis is used as a basis for summary conclusions and a set of priority-ordered recommendations.

1.2 NATIONAL POLICIES, PLANNING OBJECTIVES, AND STRATEGIES

Government's policies are founded on four national principles rooted in traditional Botswana culture: democracy, development, self-reliance, and unity. Related to these principles and to the

country's political and economic situation are four main planning objectives:

- Rapid economic growth
- Social justice
- Economic independence
- Sustained development

To achieve these objectives, government's strategy remains to:

- achieve rapid and large returns from intensive capital investment in mining, and
- reinvest those returns so as to improve the living standards of those who do not benefit directly from mining sector expansion.

Particular emphasis is given to expanding rural work opportunities via employment creation and rural development.

The National Development Plan, 1979-85 (NDP V) further specifies the following four objectives for education:

- To increase educational opportunities, and to reduce inequalities of educational opportunities, so far as resources permit;
- To contribute to the balanced economic development of Botswana by seeking to satisfy manpower requirements for all sectors, emphasizing particularly the needs of rural development and employment generation;
- To promote personal qualities such as respect for national ideals, self-reliance and concern for other people, and to encourage full development of individual talents;
- To extend the role of schools and colleges in the local community and vice versa.

In the NDP V three education priorities are identified:

- (1) Improve the quality of and access to primary education;

- (2) Develop technical education to meet the country's needs; and
- (3) Increase the numbers of Form V secondary school leavers who are well qualified in mathematics and science.

In addition, priority is being given to rapidly expanding access to two years of junior secondary school. Furthermore, "The Midterm Review of NDP V" (Draft, May 4, 1983) by the Ministry of Finance and Development Planning signals that increased vocational and technical training is to be provided at the post-junior certificate (JC) level.

These objectives and strategies remain generally valid for reasons detailed in the body of this report. The means by which they will become operational, however, and the trade-offs that will be required in pursuing them are amplified later in this summary and form the main points in the chapters which follow.

1.3 POLITICAL AND SOCIAL SETTING

From 1885 until independence in 1966, Botswana was the Bechuanaland Protectorate under British rule. Botswana is noteworthy in Africa for its democratic parliamentary government. The constitution, which dates from 1965, calls for a unicameral legislature, the National Assembly, with members elected from 32 constituencies. The President is the candidate whose declared supporters form the majority of elected members of Parliament. There is universal suffrage and general elections must be held at least every five years. A House of Chiefs represents the principal tribes and serves as an advisory body to government.

Central Government, based in Gaborone, comprises the Office of the President, the Department of External Affairs, and the Ministries of Finance and Development Planning, Agriculture, Education, Health, Home Affairs, Industry and Commerce, Mineral Resources and Water Affairs, Local Government and Lands, and Works and Communications. Local government is managed by nine district councils and five town councils, with executive authority vested in the district commissioner who is centrally appointed.

Situated in the center of the Southern Africa Plateau, Botswana comprises 582,000 square kilometers and borders with Namibia, the Republic of South Africa, and Zimbabwe. The nearest coastline is about 600 kilometers from Botswana's borders. Most Botswana citizens belong to Setswana-speaking tribes or clans. The official languages are Setswana and English, the latter the main language of government. Minority groups include the Bakalanga in the north, Basarwa (Bushman) and other semi-nomadic groups in remoter areas, the Baherero in the west, and a small number of citizens of European origin.

The 1981 census counted a de facto population of 941,027, with an additional 42,000, many of whom live and work in South Africa, forming the de jure population. While this makes Botswana the least densely populated country in Africa (1.6/sq. km.), such figures are misleading. The Kalahari Desert covers more than two-thirds of the country's land area, relegating most of the population to a band along the eastern rail corridor. About 16 percent of the population dwells in towns, about 20 percent in major villages, and the rest in smaller

settlements. Although little more than 5 percent of Botswana's land is cultivable with current technology, the traditional sector is responsible for nearly three-quarters of the population. The 1979 Crop and Livestock Survey tallied 78,000 traditional tenure (primarily subsistence) farms and 340 freehold (commercial) farms, plus a total of nearly 3 million cattle, most raised through traditional husbandry. Sorghum is the main staple; most of the 12 percent of the Gross Domestic Product (GDP) from agriculture is accounted for by the cattle industry.

Unique to Botswana, a three-site system of farming remains in use, though decreasingly so, by the majority of rural inhabitants. This system results in families living together in villages only from about June to November. Generally, for the rest of the year the men and boys live at cattle posts, and the women and girls live on small farms ("the lands") away from the village. This poses some problems for providing education and other government services.

From 1971 to 1981 the population growth rate averaged 5 percent per annum (in 1983 it was estimated at 3.3%), one of the fastest growth rates in the world. Nearly half of the population is under 15 years of age; life expectancy at birth is about 55 years. Only half of the population has access to safe drinking water. The adult literacy rate is estimated at 35 percent but this should rapidly increase, since primary schools now enroll about 83 percent of the age cohort.

1.4 ECONOMIC AND FINANCIAL CONDITIONS

Six major characteristics describe Botswana's economy, and constitute a set of opportunities and constraints in government's attempt to promote aggregate national development and a more equitable distribution of income.

- o Dual economic bases of mining and agriculture--the former the driving force for aggregate economic growth and the accumulation of foreign reserves, and the latter the provider of livelihood for an estimated three-quarters of the population.
- o Interdependence of the traditional and modern sectors--seen in extended family arrangements which allow a majority of Botswana workers to benefit from both family agriculture and wage employment. This also is evident in a macro-social context wherein the agriculture sector is dependent on the mining sector specifically, and the modern sector generally, to provide the resources for improvement in access to and use of land, irrigation, training, and technology--while the modern sector is dependent on the traditional sector to ease the employment burden which would result from mass urban migration.
- o Political stability and conservative fiscal management--which resulted in a surplus of receipts over expenditures throughout the 1970s and in 1982 resulted in sufficient foreign reserves to cover four to six months of imports.
- o Environmental fragility--manifest by periodic drought and the fact that 75 percent of the country's water needs are supplied by subterranean water sources, dramatically affecting the 5 percent of the land area suitable for cultivation.
- o External dependence--upon the ports of other southern African countries for export of minerals and beef, for repatriated payments and reduced employment pressures at home, for demand for its products, for foreign assistance to finance development expenditures, and especially on professional and technical expatriate personnel in both public and private sectors.
- o Manpower imbalances--evident in a gross surplus of workers relative to jobs while there are simultaneous shortages in trade, technical, scientific, and managerial skills.

The analysis of Botswana's fiscal capacity related to the education and human resources sector highlights the expectation that aggregate growth of the sector will be dominated by the funding of the expansion of secondary education and smaller but equally important improvements in technical training and higher education. Over the next five to ten years, the emphasis will be placed on improved internal efficiency in the use of funds and a careful selection of new initiatives. The secondary system will require special attention to prevent losses in quality while achieving gains in quantity. The vocational and technical training system will have to look toward the private sector for greater direction and coordination and for support of expanded post-Junior Certificate and post-secondary training. It will be important to examine the option of subsidizing training by private sector firms as an alternative to the costly development and recurrent budget burdens of institutionalized government-financed programs. Fiscal issues are expected to remain a constraint on EHR development through the 1980s but not so severe as to prevent substantial progress in the sector by 1990.

1.5 LABOR MARKET OVERVIEW

About 97,100 persons were employed in the formal sector of the economy in 1981. While in the same year there was an estimated gross surplus of over 126,000 workers relative to formal sector demand, shortages of workers existed at the Junior Certificate level and above. Almost 10,000 Junior Certificate holders, almost 4,000

Cambridge-level graduates, and slightly more than 1,000 university and post-university degree holders were in demand but unavailable.

Expatriates constituted about 5 percent of formal sector employment the same year (roughly equal to the number of Cambridge and university degree holders in unmet demand), concentrated in occupations with the highest skill requirements.

A comparison of manpower supply estimates to the net demand projections for the rest of the decade points to four themes. First, through 1989 a shortage of employment opportunities will continue for those with only a primary school education, as will a surplus of positions for those with higher levels of education. The surplus of Standard 7 leavers, expected to reach 176,000 in 1989, is the most dramatic pattern projected for formal sector employment for the decade. Within secondary education levels, internal imbalances in employment opportunities will exist, with surpluses of those graduates having only formal schooling, and shortages of graduates who have supplemented their schooling with training.

Second, long-term effects of the educational expansion should be to reduce relative demand for expatriate personnel in the economy. In the short run, however, absolute numbers of expatriates may increase and a higher concentration of expatriates is expected to be necessary in the technical, scientific, and management occupations. While teacher demand and supply appears in reasonable balance through 1989 except at the senior secondary level (especially in science and

mathematics), the junior secondary expansion will temporarily slow the process of localizing the teaching force.

Third, localization (the assumption by trained Batswana of positions held by expatriates) will remain a significant issue through the 1990s. In the public sector, where 61 percent of the professional cadre in government (excluding the MOE) consists of expatriates, the greatest need is for their increased use in training as well as operational roles. Also necessary is a greater overlap on the job between expatriates and Batswana replacements. In the private sector, where almost 40 percent of professional and technical workers and over 50 percent of managerial personnel are expatriates, it will be increasingly important for government to make available to the sector an appropriate number of highly educated Batswana during their period of bonded service.

Fourth, future manpower planning requires special kinds of data. The National Manpower Survey proposed by the Ministry of Finance and Development Planning deserves support and should include focus on private sector, on-the-job training capacity and the job search behavior of recent school leavers.

1.6 EDUCATION FINANCING AND UNIT COST SUMMARY

Several considerations emerge from the review of enrollments, funding sources, recurrent costs, and capital expenditures associated with the major levels and types of schooling. At the primary level,

while government policy has successfully precluded a concentration of untrained teachers in particular locations, the large number of untrained teachers continues to devalue current public and private investments in schooling. At the secondary level, the lack of parity between government spending levels (and therefore total investments in students) at Government Schools and Community Junior Secondary Schools (CJSSs) is compounded by the quality differences in prior student learning, teachers, and material resources and facilities. This dual system of junior secondary schooling is the result of a difficult choice between types of equity--a more equitable access to secondary education and a more equitable distribution of inputs. However, the persistence of such a system beyond the current expansion period may carry heavy social costs, in foregone opportunities for alternative educational investments and in reduced quality of manpower in the future. At the vocational/technical and post-secondary level, the cost inefficiencies exist in terms of low student/teacher ratios and low utilization of buildings.

Differences in the unit costs and cycle costs for the different types and levels of schooling are dramatic. The unit cost for primary schooling, a seven-year cycle, is moderate at P189 per annum. However, it takes 21.4 years of investment (P4,045) to produce one student with an A or B pass on the Primary School Leaving Examination which permits continuation to secondary school. To produce one graduate with an A, B, or C pass requires 10.3 years of investment (P1,947).

At the secondary level, nearly two and a half times as much is invested per annum in non-boarding students in Government Schools (P833), and one and a third times as much in those in Government-Aided Schools (P460), as in those in Community Junior Secondary Schools (P349). However, the total cost per graduate produced at the CJSS is more (1.3 times as much as at a Government School and 2.3 times as much at an Aided School). This is because three times as many student years are required to produce a single CJSS graduate as to produce a graduate of a Government/Aided School. Moreover, while students pay only 10 percent, approximately, of the total cost for Government School, and 14 percent for Government-Aided School, they pay approximately 62 percent of the cost of CJSS.

Annual unit cost figures based on government support for selected vocational/technical programs are as follows: Brigades, P1,000; Botswana Polytechnic, P2,955; Automotive Trades Training School, P2,428; Botswana Institute of Administration and Commerce, P987. For the Brigades and ATTS, total unit costs, which also would include nongovernment support, are probably twice these figures. For reasons detailed in Chapter 8.0, the differences in costs cannot be interpreted as indicating relative efficiency in the conduct of training.

Unit cost at the University of Botswana, including all recurrent expenditures, is estimated at P7,143 per annum, of which P3,600 represents the per student cost of the academic salaries. Unit costs for the teacher training colleges average P938 annually.

1.7 CONSTRAINTS

The major constraint to development of the education and human resources sector is the shortage of Batswana trained to assume professional and technical positions as a basis for eventual promotion to senior administrative positions. Although the administration of the public sector is characterized by a high level of efficiency, it has been achieved through substantial and continuing reliance on expatriate personnel. In 1981, expatriates filled the following proportions of technical and managerial positions: superscale, 30%; general administrative, 3%; professional, 58%; technical, T1-T3, 35%; technical, T4-T5, 2%. Because expatriates fill many senior and technically demanding positions, the demands on the EHR system to provide well-educated Batswana to replace the expatriates will be especially severe.

The problems of localization of management positions in the private sector are enormous, as well. In the past, university graduates have been bonded for public employment as a condition of their bursaries. Private sector firms therefore have had less access to the most highly qualified Batswana.

A second constraint on the EHR sector has been the shortage of effective staff development programs in public and private sector organizations. The new Botswana Workforce and Skills Training (BWAST) Project will assist selected government agencies in staff development. This assistance needs to be generalized throughout government and into private and parastatal organizations.

A third possible constraint concerns the organizational conditions of several EHR ministries which serve to converge decision-making responsibility at the level of the deputy permanent secretary. This becomes problematic when the middle management cadre does not have adequate preparation to ably handle day-to-day decisions and thereby enable senior administrators to focus on major issues of policy and planning. It can also inhibit the acquisition of better management skills by middle-level staff who will have to assume ever greater responsibilities later in their careers.

A fourth constraint is the lack of a sufficient data base for improved manpower planning. This is important for ensuring the optimum external efficiency of the EHR sector in keeping with national economic and development needs.

A final constraint is the circumstance that funds available for new education and training initiatives at levels other than junior secondary are likely to be limited because of the large expansion targeted for this level. The recurrent government expenditures on education (for the Ministries of Education, Local Government and Lands, and Home Affairs) are projected to increase between 1983-84 and 1987-88 from 23.6 percent to 29.6 percent of total government costs, in large part to pay for the expanded access to junior secondary education. By the end of 1988 the education budget will be subject to an annual growth rate of 13 percent compared to 6.1 percent for all other government expenditures. In view of these financial pressures,

the challenge to government is to finance education and other human resource activities in a manner so as to remove education and training shortages constraining development, without creating new problems presented by graduates for whom no demand exists in the labor market.

1.8 CHARACTERISTICS AND KEY ISSUES OF EDUCATION AND HUMAN RESOURCES

Analysis of each of the EHR subsectors in the assessment identifies issues in five categories: external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing. These categories have proven useful for studies of the EHR sector and enable examination of the basic concerns of education and development. Furthermore, use of this comparative framework for all subsectors makes it easier to discern strengths and constraints which may be systemic rather than specific to a given subsector.

An EHR system is externally efficient to the extent to which education and training can contribute to sustained economic and social development, build knowledge and skills geared to specific employment opportunities in the economy, and are balanced in terms of type and quantity of output.

A system is internally efficient to the extent that it optimally allocates and uses available resources for improving the quality and increasing the quantity of education. Qualitative inefficiencies, when they exist, are reflected in low student attainment, weak teacher

preparation and effectiveness, inadequate or inappropriate content and presentation of curricula, and low availability and utility of instructional materials and resources. Quantitative inefficiencies, when they exist, can be manifest in high rates of attrition and repetition, low student/teacher ratios, and under-used physical facilities.

Access concerns the proportion of the target population reached by the education system. Equity concerns the extent to which these opportunities are made available for all segments of the population, without restriction due to such factors beyond an individual's control as gender, socio-economic status, and rural-urban location.

Administration and supervision concerns the capacity to effectively manage education systems, involving, in particular, managerial and analytic capabilities. Important in this regard is an ability to assess needs and to design, analyze, manage, and evaluate education and training programs. Administration and supervision also includes specifying responsibilities and distributing them from the central to the local levels, and having supports available for monitoring and guidance.

Analysis of costs and financing focuses on aggregate expenditures for education and human resources development nationally, by level and type. It also involves growth projections and assessment of the likely impact on total recurrent costs. At the micro level, the analysis of unit and cycle costs enables comparison of program outcomes relative to cost.

1.8.1 External Efficiency

To improve the external efficiency of the EHR system, EHR planning should give more attention to national manpower demand. Education and training initiatives that are primarily in response to social demand may need to be restrained. While the accelerated expansion of secondary education will help meet some manpower shortages, it is not primarily designed to alleviate the large problems of manpower surplus which now exist. These same problems are likely to increase in severity over the decade. Greater orientation to demand is needed especially in the vocational/technical and higher education programs to ensure that graduates have skills that are relevant to national development needs and the labor market.

Attaining better congruence between skill supply and demand requires more complete data from the public sector and especially from the private sector, where such information is particularly lacking. Manpower balances are cast at present in terms of formal educational levels with or without "training," but such "training" only now is being defined as to level, type, and duration.

It is important that a balanced EHR/manpower development approach carefully consider the needs of both the modern and the traditional sectors of the economy. Recent education and training policy has primarily dealt with modern sector considerations. Higher quality of formal education, improved access to nonformal education (in agriculture and health as well as literacy and numeracy training), and

preparation in income-generation skills all are important activities for the EHR system and can have particular benefits in the traditional sector.

A more equitable arrangement for sharing highly trained workers between the private and public sectors might also be considered. The present shortage of university graduates and other highly skilled workers available to the private sector restrains efficiency and delays the necessary process of localization. The present system of tax subsidization of training in the private sector appears effective and should be continued.

1.8.2 Internal Efficiency

Increased relevance of education at the primary and secondary levels will require improved quality of achievement particularly in English, mathematics, and science. Skills in these areas will prepare graduates for job training opportunities in formal education or in on-the-job settings. To the extent that quality is improved in the formal system, training will be more efficient and will not need to incorporate a large remedial component.

Improvement in the quality of CJSSs is the chief need identified in this assessment. More trained teachers, instructional materials, better facilities, and concerted efforts to reduce student attrition are needed.

1.8.3 Access and Equity

Government has achieved the laudable goal of near-universal access to primary schooling. Enrolling the remaining 17 percent is a difficult challenge, particularly because this number includes many children of remote and semi-nomadic families. The more critical goal may be ensuring access to functional literacy, numeracy, and other skills to improve livelihood and enable greater participation in national life. Nonformal means may be most suitable to achieve this goal.

1.8.4 Administration and Supervision

Management of the EHR sector generally is of a high order. Several needs have been identified, however. The organizational structure and responsibilities of units within the MOE deserve re-examination in view of the large, complex set of tasks to be effectively coordinated for the expansion of secondary education. In particular, middle management skills need to be strengthened to relieve senior administrators from daily operational decision-making. It also is important that organizational responsibility be designated within government for planning, implementing, and validating skill training, and for exploring greater use of private sector resources in training.

1.8.5 Costs and Financing

Continued under-financing of the Community Junior Secondary Schools may prove more costly in both monetary and social terms than slower secondary expansion characterized by higher quality. Also, the high public costs of post-junior secondary education and training combined with high rates of return to individual investments suggest that government might consider requiring needs tests for bursaries, or conversion of a share of the grants into long-term, low-interest loans. Consideration also might be given to ways to raise the low student/teacher ratios in many of the vocational training programs and at the University, without reducing quality of instruction.

1.9 SUMMARY CONCLUSIONS

Following are several conclusions that refer generally to education and human resource development in Botswana. The final section of this Executive Summary gives overviews and recommendations for specific subsectors of formal and nonformal education and training.

Conclusion 1. Botswana's political and economic stability and laudable record of social accomplishments justify long-term optimism for EHR development. At the same time, the variability of the basic GDP determinants combines with Botswana's external dependence to create a situation of macro-economic uncertainty. The experience of the last several years supports continued moderation in expenditures, both recurrent and development. New spending plans should be for the short term or designed in a "phased" format that allows for

postponements and/or reductions in expenditure levels from year to year if GDP growth slows.

Conclusion 2. Donors should be prepared to fund a greater share of development costs. Government's ability to support development expenditures for the remainder of NDP V and into NDP VI will be tied directly to the nation's macro-economic performance. While government will continue to support a responsible share of project costs, it may be necessary for external funding to support a larger proportion of these costs than has been the case to date. Full responsibility for recurrent costs will continue, of course, to be that of government.

Conclusion 3. Coordination among EHR agencies needs to be improved. Because of the probable constraints on aggregate EHR spending by the end of this decade, better coordination will be required among agencies to ensure that funds are used effectively. The areas of training and nonformal education are the most in need of improved information, goal-oriented management, and generally improved planning and accountability.

Conclusion 4. The expansion of secondary education will reduce the availability of funds to enhance quality and to supply complementary post-school training activities. The decision to enact the accelerated expansion of secondary education will increase the absolute level of the EHR budget, its rate of growth, and its share of total government expenditures and of GDP. The opportunity cost of this decision is that some other demand-oriented education and training activities may not be financed unless GDP growth exceeds

present expectations. The most important educational investments in terms of manpower demand appear to be in quality improvement, curriculum reform, and the provision of post-school training (especially at the secondary levels).

Conclusion 5. The private sector can be tapped to better advantage to improve the external efficiency of vocational and technical education and training and to assist in providing training. Because of potential financial constraints, a priority should be placed on the provision of training without becoming encumbered by large, ongoing obligations. This can be achieved through using private sector firms as providers of training or using private sector facilities as sites for training. The Apprenticeship and Industrial Training Bill of 1983 will begin to address this need. While it remains appropriate for training to be conducted under government sponsorship and direction, there is a need to avoid the development and recurrent cost obligations inherent in new institutional development. In addition, the private sector scheme promotes greater flexibility in the types of training that may be provided.

1.10 SECTOR-SPECIFIC OVERVIEWS AND RECOMMENDATIONS

This part of the Executive Summary provides abstracts for each education subsector covered in this assessment: Primary (Chapter 4.0), Secondary (Chapter 5.0), Teacher Training (Chapter 6.0), Higher (Chapter 7.0), Vocational and Technical (Chapter 8.0), and Nonformal (Chapter 9.0). The abstracts briefly summarize the status of the

subsector, principal challenges, plans, conclusions, and recommendations. For a more complete discussion of these topics, the reader is referred to the subsequent chapters.

1.10.1 Primary Education

The primary schooling system consists of a seven-year cycle. Enrollments in 499 of the 502 schools existing in 1983 totaled 197,510, about 83 percent of the school age cohort. Enrollments are almost equally divided between males (47%) and females (53%), with female enrollments progressively increasing from Standard 1 through Junior Secondary School, then decreasing in Senior Secondary School. Setswana is the language of instruction in Standards 1 through 4, while English is the medium of instruction for Standards 5 through 7.

Although overall management of the primary system is the responsibility of the MOE, operations are somewhat decentralized. The MOE manages sector planning, curriculum development, teacher training and appointments, and school administration and supervision. Each district and township has an elected local authority with responsibilities that include school construction, building maintenance, equipment, and some administrative costs.

Significant changes are under way in the structure of the formal education system through secondary school. The system now comprises seven years of primary schooling, three years of junior secondary school, and two years of senior secondary school. This 7-3-2 structure will be modified in 1984 to a transitional 7-2-3 system and

eventually will become 6-3-3 with universal access proposed for the first two levels (i.e., nine years of basic education). The Standard 1 intake is projected to increase 4 percent per year, indicating a modest proposed reduction in the 17 percent of school age children not now enrolled in primary school.

The student/teacher ratio is 31:1 with little variation among the districts. This indicates an efficient use of classroom space and would permit a small expansion of capacity in crowded areas without significant reduction in level of achievement. Progression rates throughout the primary cycle are relatively high, with repetition occurring at Standards 4 and 7 due to examinations. The primary school teaching force is predominately female (76%), and 70 percent of all teachers are trained. The capacity of the system to train teachers over the next several years is sufficient to maintain the present student/teacher ratio but the projected training capability will not be sufficient to rapidly replace the 1,894 untrained teachers. Donor support has been responsible for most new school construction.

Principal challenges confronting government are to improve the teacher training program, reach in a cost-efficient manner the 17 percent of the school age children not now enrolled, improve the distribution of qualified teachers, and improve coordination of all components of the education system.

The planned growth rate of 4 percent for primary enrollments, projected for the next decade, can be handled adequately without undue

stress on the system. Under the Third Education Project, the World Bank will finance the construction and equipping of about 500 primary classrooms and related teachers' facilities.

Conclusions. Twelve conclusions are reached regarding primary education. First, the revised curriculum is appropriate with respect to content, organization, structure, and the availability of support materials. Second, textbooks and related instructional support materials are not currently available in sufficient quantities at all schools. Third, pre-service teacher training could benefit from improved selection procedures. Fourth, pre-service teacher training would be more effective with an appropriate and common curriculum more fully implemented at all Primary Teacher Colleges. Fifth, all in-service teacher training programs should be reviewed to determine their impact on teaching practices and student achievement; those programs found effective should then be expanded to include a larger number of teachers. Sixth, the use of radio is not fully utilized for distance teaching and as a support for in-service teacher training.

Seventh, the cost of repeaters is high and may not be justified on the basis of evidence currently available. Eighth, school age children in remote areas are seriously under-served. Ninth, the formal education system presently cannot be extended at a reasonable cost to serve remote populations adequately. Tenth, instructional quality is not evenly distributed. Eleventh, the present administrative structure may not be appropriate to current and

projected requirements. Twelfth, present unit costs are reasonable when compared with other countries in similar circumstances.

Recommendations. The recommendations for primary education are in the following priority:

First, to strengthen administration and supervision, (1) improve the coordination for all elements of the primary cycle, and (2) review the structure and staff needs of the Ministry of Education.

Second, to strengthen internal efficiency, (1) improve the supply and distribution of textbooks and related instructional materials, (2) raise the instructional skills of teachers trained at the PTTCs, (3) evaluate and improve the in-service teacher training program, (4) improve and expand radio support for direct instruction and in-service teacher training, and (5) evaluate the cost-effectiveness of allowing repeaters at Standards 4 and 7.

Third, to enhance access and equity, (1) improve the distribution of quality instruction through more equitable distribution of qualified teachers, and (2) consider nonformal instructional alternatives for providing instruction to remote areas.

1.10.2 Secondary Education

Secondary education, a five-year sequence following seven years of primary school, is divided into junior secondary school (Forms I, II, and III), culminating in a Junior Certificate (JC) Examination, and senior secondary school (Forms IV and V), leading to the Cambridge Overseas School Examination. In 1982, 20,520 students were enrolled

in 41 secondary schools. Nearly half of these are Government Schools, funded and operated directly by the MOE. There also are four Government-Aided Schools which are mission schools that have come to be subsidized by Central Government. The other (nearly half) secondary schools are called Unaided or Private; with one exception they are Community Junior Secondary Schools operated by local communities. Despite their designation as private schools, CJSSs receive some subsidy from government.

Secondary schooling is an experience afforded to only one in five Batswana of the age cohort. This is to change dramatically, however, in 1984. Government plans to increase the percentage of Standard 7 leavers entering Form I from 25 to 40 percent (an increase from 7,255 to 11,025 students), and to continue increasing enrollments until near-universal access to junior secondary schooling is reached in the 1990s.

At present, of the 25 of every 100 Standard 7 leavers who now enter Form I, only 4 eventually earn a Cambridge Overseas School Certificate (COSC) at the end of Form V, while another 2.6 earn a General Certificate of Education (GCE). Students are admitted to Form I on the basis of their scores on the Primary School Leaving Examination (PSLE). Headmasters from Government and Aided Schools typically select students with the highest scores. The availability of boarding facilities at most of these schools means that students do not have to attend a school near them. Less able students may be

accepted into a CJSS if they live close enough to commute and have the means to pay the fees.

Relative to Government and Aided Schools, CJSSs cost the student more to attend (total investment in a CJSS student is only 40 percent that of a non-boarder in a Government school), have fewer trained teachers (31% vs. 87%), a lower pay scale, poorer facilities, and a loss rate that has ranged from three to ten times higher. It takes more than twice as many students to yield 100 graduates from a CJSS than it does in a Government School. The student/teacher ratio is relatively low, at 21:1 in Government and Aided Schools and 23:1 in the Private Schools. There is equal access by gender.

One concern is how school leavers at the various levels balance with formal sector requirements. Through 1995 it is expected that a growing number of primary and junior certificate completers without additional post-school training will be in excess of what the labor market requires. At the same time, there will be a shortage of Cambridge (Form V) completers (with and without additional job-related training). Foreseen for 1989 is at least a 30 percent shortfall of the Cambridge graduates needed in the labor market.

Principal challenges in regard to secondary education are to improve the articulation of education planning with projected national manpower needs, increase the number of qualified teachers, and raise the quality of instruction in community junior secondary schools. In addition, the primary/junior secondary/senior secondary cycle is to be

changed from its present 7-3-2 year cycle to 7-2-3 in 1988, then to 6-3-3 in 1991. This will necessitate redesigning the secondary curriculum, which also must take into account a wider range of student abilities resulting from expanded access. The increased enrollment will require additional teachers and classroom space. Construction of 54 new schools is planned by 1991, with modest increase in the number of teachers. The most critical need for teachers will continue to be at the senior secondary level, particularly in the fields of science and mathematics, where there is heavy reliance on expatriates. The rapid expansion of the junior secondary level also will present new challenges in the coordination and logistics needed to manage the change, and in special effort to maintain academic quality.

Various donors are assisting government with its projects to expand existing government secondary schools and to construct new ones, and to upgrade existing CJSSs and build several more. Of the P58 million targeted for these efforts, much of the funding remains to be secured.

Conclusions. Three central conclusions follow from the assessment of secondary education. First, increasingly well-defined mechanisms are needed to coordinate the expansion of secondary schooling with anticipated manpower needs. At the same time, procedures should be implemented for collecting more refined estimates of specific training and skill needs to accompany the expanded access to secondary school. Third, strategies should be further identified

and implemented for equalizing cost and quality between Community Junior Secondary Schools and Government/Aided Schools.

Recommendations. Recommendations for secondary education are in the following order of priority.

First, to strengthen external efficiency, (1) continue to monitor the secondary school expansion as it relates to national manpower needs, (2) conduct tracer studies of recent school leavers, (3) identify specific occupational and skill areas in high demand by employers, and (4) implement a study to determine whether the market demand for JC leavers is for students having more practical skills (than now taught in the junior secondary school curriculum) or a better grasp of basic knowledge and skills.

Second, to improve internal efficiency, (1) give strong support to secondary school curriculum activities, (2) expand opportunities for untrained secondary school teachers to become qualified, (3) expand in-service education opportunities for currently employed trained teachers, and (4) implement procedures to ensure the validity of the PLSE and JC examinations and to equate test difficulty from year to year.

Third, to increase access and equity, (1) identify means for improving the quality of CJSSs without reducing the quality of Government and Aided Schools, and (2) encourage the expanded enrollment of women in the Diploma Program in Secondary Education.

Fourth, address cost and financing issues by identifying means of equalizing cost to the student between CJSS and Government and Aided Secondary Schools.

Fifth, to strengthen administration and supervision, (1) implement a study of the structure and organization of the MOE, and (2) expand and upgrade the training of local school administrators.

1.10.3 Teacher Education

All pre-service and in-service academic teacher education is under the managerial responsibility of the MOE's Department of Primary and Teacher Training. The pre-service program for primary teachers takes place at three Primary Teacher Training Colleges (PTTCs), which jointly graduate about 450 students each year from a two-year Primary Teacher's Certificate (PTC) program. Beginning in 1984, about 80 percent of the beginning students will be required to have the JC or COSC plus one year of experience as an unqualified teacher at a primary school. The remaining 20 percent will comprise currently unqualified teachers recommended by their Head Teachers. Most of the PTTC students are female (87%); most of the teachers are male (66%). The student/teacher ratio ranges among the three schools from 18:1 to 14:1; the student/classroom ratio ranges from 33:1 to 22:1. Half of the staff of the PTTCs are expatriate. A new PTTC is slated to open in 1985 and graduate an additional 150 primary teachers each year. The PTTCs are affiliated with the Faculty of Education of the University of Botswana (UB) which certifies the PTC.

The pre-service program for secondary teachers is the Diploma in Secondary Education course at UB, which graduates about 90 students annually. This program is important because the secondary school teaching force of 666 is heavily dependent on expatriate teachers (42%). The program is to be either replaced or supplemented by Molepolole Teacher Training College, under construction and expected to offer a three-year course for junior secondary teachers. It will have the capacity to graduate 150 students per year.

The in-service program takes place at six Education Centers and sometimes at individual rural schools. Begun in 1981, the Primary Education Improvement Project (PEIP) has both pre-service and in-service components and has helped to establish a Department of Primary Education at the University of Botswana.

Teacher supply and demand is in reasonable balance except at the senior secondary level. At the primary level, training capacity can provide adequate numbers of trained teachers to maintain current student/teacher ratios for the rest of the decade, provide a surplus to replace teachers leaving the service, and increase the proportion of qualified teachers.

The junior secondary pre-service training capacity is affected by the dramatic increase in the Form I enrollments which is to start in 1984. The required number of junior secondary teachers will almost double by 1989 but this demand is not expected to exceed the training capacity of the system with the opening of the new TTC at Molepolole. However, this assumes a continued reliance upon expatriate teachers,

especially in the areas of science, mathematics, and English. The delayed localization of the junior secondary teaching force will have to be weighed against the costs of increasing pre-service training capacity at this level. At the senior secondary level the situation is critical and training capacity is not sufficient to meet projected demands, as detailed in Section 2.4.4. Because only about 20 students are graduating annually from the four-year degree program in education at UB, reliance on expatriate teachers is likely to increase at the senior secondary level as the bulge in new Form I entrants moves through the system.

Major needs are for improved coordinating mechanisms for teacher education within the context of a more fully integrated plan, increased relevance of the curricula, and an enhanced quality of instruction. Significant plans for teacher education include the new facilities to open in 1985 for pre-service primary and secondary teacher education, and continuation of the PEIP effort for institutional support in pre-service and in-service training.

Conclusions. Six conclusions are drawn concerning teacher education. First, there is a need to review the capabilities of the existing mechanisms, organizational structure, and staff to manage and coordinate the full range of activities for teacher education. Second, current pre-service and in-service teacher education programs should be reviewed, with a view to strengthening the more effective ones to support the proposed expansion of basic education. Third, the many untrained and under-trained teachers in the primary schools

constitute a barrier to improving the quality of instruction, and present in-service programs do not appear to have extensive enough coverage to adequately address this shortcoming.

Fourth, current capacity to train primary and secondary tutors and the present in-service activities are not sufficient to localize teacher training staff within the next five years; the PEIP program may meet this need at the primary level if implemented successfully, but a shortage at the secondary level will persist. Fifth, the quality of instruction at the primary level can be improved most effectively in the short term by an improved and expanded program of in-service training associated with an upgrading plan. Sixth, the quality of instruction at the primary and secondary levels can be improved most effectively in the long term by enhanced pre-service training.

Recommendations. The recommendations for teacher education are given priority as follows:

First, to strengthen administration and supervision, (1) develop a fully integrated and costed plan for teacher education, with a short-term emphasis on in-service training and a long-term emphasis on pre-service training; (2) review existing teacher education coordinating mechanisms with respect to the objectives identified in the above plan; and (3) review existing organizational structure and staff with respect to this plan.

Second, strengthen external efficiency by reviewing curricula of current pre-service and in-service programs and revising them as required.

Third, to strengthen internal efficiency, (1) assess current in-service programs and expand those found to be effective and consistent with the plan, and (2) review existing pre-service programs with respect to curricula, staffing, facilities, selection, and certification examinations, and revise as required in light of identified plan objectives.

1.10.4 Higher Education

Higher education is provided principally by the University of Botswana (UB), and at a lower level by Botswana Agricultural College (BAC). It soon will include the Secondary Teacher Training College to be opened in Molepolole. In addition, about 200 students study at universities abroad. Only about five of every hundred Standard 7 leavers currently receive higher education.

The University of Botswana enrolled 1,095 students in 1982-83, 759 of these in four-year degree programs and the rest in shorter diploma and certificate programs. UB has Faculties of Education, Humanities, Science, and Economics and Social Sciences, as well as the Institute of Adult Education and the National Institute of Research. Although UB received full university standing in 1982, its lineage extends from 1963, when the University of Botswana, Lesotho, and Swaziland was established.

At UB women account for about 40 percent of the total enrollment each year. There are notable differences by Faculty, however, with 21 percent female enrollment in Science and 48 percent in Education, for example. About half of the staff are expatriates. The low student/teacher ratio (8.6:1 in 1983-84) is explained, in part, by UB's relatively small enrollment and diverse program offerings. Most of the students board on campus, and 82 percent of the students received a full government bursary in 1982-83. In return, students who receive bursaries are bonded to work for government for a term equaling their length of study plus one year. Their assignments are determined at graduation by an allocation committee, with representatives of Central Government, local government, and the private and parastatal sectors. Students also pay 5 percent of their salaries to government for the duration of the bonding period. Students studying abroad accept the same responsibilities with their bursaries.

BAC trains students in agriculture, primarily to work as agriculture demonstrators, and in animal health, primarily to serve as veterinary assistants, both for the Ministry of Agriculture. Students enter BAC after completing junior secondary school (Form III) and follow a certificate or diploma curriculum stressing practical training and field experience. BAC, which began in 1979, enrolled 190 students in 1982 in the Agricultural Certificate and Diploma programs, about a quarter of these women. The student/ academic staff ratio in 1983 was 7.5:1.

Foreign study may increase with the implementation of the Botswana Workforce and Skills Training Project (1982-1986). Under this project, sponsored by government and USAID, 72 high-level managers and technicians will go for long-term training overseas, 37 will receive short-term training overseas, and 1,000 will participate in short-term training in-country through existing institutions.

Principal concerns regarding higher education are the adequacy of supply relative to the demand for university graduates in the national workforce, the efficiency of student flow through the higher education system (particularly in science and mathematics), support mechanisms to assist entering students who lack necessary preparation, and the formulation of policies and procedures to guide coordination across higher education institutions and opportunities.

Projections of national needs for highly educated manpower point to an increasing shortfall of university educated personnel every year through 1995. The estimated shortfall ranges from 1,221 in 1983 to 1,599 in 1995 and suggests a need for greater investment in higher education over the next decade.

Also deserving attention is a possible need to encourage greater student enrollment in University Faculties and programs most critical to national manpower needs. Related to this is the need to reduce attrition in the Faculty of Science. Of every 100 male students entering the Science Faculty in 1978, only 15 were enrolled in the fourth-year program in 1981, and for women the corresponding progression was only 9 per 100 (although a few of these men and women

left to continue studies overseas). Proposals under consideration at the UB include establishing a pre-entry program for all Faculties along the lines of the existing program for the Science Faculty, a Teaching Unit for the improvement of University teaching and learning, and part-time study programs.

Conclusions. The assessment of higher education results in five general conclusions. First, open and ongoing dialogue should be encouraged on the role of higher education in national development, particularly as it relates to resource flow. Second, continued expansion of higher education opportunities should be based on evidence of demand for the skills and knowledge being developed. Third, need exists for a series of intervention programs that would improve student flow through higher education. Fourth, UB and BAC should closely examine student/staff ratios with a view to greater efficiency. Fifth, a long-term plan for inter-institutional coordination should be developed.

Recommendations. Recommendations regarding higher education are in priority as follows:

First, to increase external efficiency, (1) conduct a training needs survey of the government and industry fields that graduates are likely to enter, (2) conduct a tracer study of University leavers, and (3) encourage bonded students to enter private sector employment.

Second, to improve internal efficiency, (1) extend systematic collection and analysis of data on student flow, (2) study staff time

allocation, (3) develop pre-entry programs to provide remediation in Faculties other than Science, and (4) develop a career advisement program.

Third, strengthen administration and supervision by developing a long-term plan for the coordination of higher education.

1.10.5 Vocational and Technical Education

At least 38 institutions and organizations offer vocational and/or technical training, the former oriented toward craft skill development and the latter aimed at higher order skills. These institutions represent both the public and the private sectors and consist of in-school and out-of-school training programs with an estimated combined enrollment of more than 4,900 in 1983. Of these, 2,080 are trained in formal institutions. Most skills training in Botswana is at the vocational rather than the technical level, and the majority of the trainees are male except in the clerical, health, and social service skills areas, where the majority are female. Most of the programs are in the Gaborone area and are directed toward the modern sector. Currently, no institutionalized mechanism exists for coordinating all vocational and technical education activities.

Botswana Polytechnic (BP), under the jurisdiction of the MOE's Technical Education Department, enrolled 646 students in 1983, only 20 of these females. There are three Departments of Engineering (Civil, Mechanical, and Electrical) and a teacher training unit. Students normally must have a JC to enter craft courses and a Cambridge

Certificate or GCE to enter the technical courses. The ratio of students in craft to technical courses is about 2:1. The craft courses are designed to the standards of the National Trade Tests while courses for technicians prepare students for modified City and Guilds of London examinations.

The Automotive Trades Training School (ATTS), begun in 1982, is expected to have a full complement of 120 students in 1984. To enter, students must have passed the JC Examination and completed an aptitude test. Courses lasting three years are offered in auto mechanics, auto electrics, and plant mechanics.

Botswana Institute of Administration and Commerce (BIAC) enrolled 1,103 students in 1983 and offers many short courses for government, parastatal, and private organizations in commercial and secretarial subjects.

In addition to the programs of the above three institutions, 16 units of government and parastatals offer vocational and technical training programs, enrolling at least 719 individuals in 1983.

Three major institutions provide out-of-school training, primarily vocational and often rural in orientation: the Botswana Brigades, the Rural Industries Innovations Centre (RIIC), and the Botswana Enterprise Development Unit (BEDU). The Brigades trained 726 individuals, mostly males, at 13 Centres in 1983. Government is making a major commitment to the Brigades by increasing per student subsidy from P400 to P1,000 a year in 1984 and by expanding services offered to the individual Brigades by the Brigades Development Centre

(BRIDEC) in Gaborone. RIIC's 98 trainees in 1983 were mostly adults who remain self-employed after training by starting small village industries. BEDU focuses on business management and works with entrepreneurs engaged in such fields as metalwork, construction, textiles, leatherwork, woodwork, and handicrafts. Sixteen entrepreneurs, employing 696 individuals, completed BEDU training in 1983. BEDU suffers from staff imbalance in terms of the number qualified to serve as technical and business management advisers.

Private sector businesses, commerce, and industry also engage in training with the encouragement of government. The Association of Training Officers began in 1982 in an attempt to coordinate training in the private sector and the parastatals and to address government's localization policy. The Botswana Employers Federation recently has initiated a training program for selected employees.

Principal challenges to meet Botswana's growing demand for skilled manpower are the needs to better link the training of skilled technicians and craftspeople with national manpower demands, develop a national plan and coordinating mechanisms for vocational and technical education and training, establish stronger links between government and the private sector in identifying manpower demand and planning responsive training programs, and improve the quality and relevance of skills training programs. Other challenges are to overcome inadequate student preparation for entry into programs, limited access to higher level technical and commercial training, unevenness of program quality

in rural areas, and lack of a sound localization strategy for upgrading vocational instructors.

Plans are under way to provide greater on-the-job industrial training as a result of the Apprenticeship and Industrial Training Bill of 1983, and to build four Vocational Trade Centres at Palapye, Maun, Selebi-Phikwe, and Jwaneng. Government also is exploring an appropriate relationship between the MOE and the Brigades in an effort to ensure better quality of instruction and fiscal accountability in the programs.

Conclusions. Basic conclusions reached concerning the vocational and technical subsector are the following. First, government needs more detailed information on the current process of supplying trained manpower and the actual and anticipated demand for skilled labor. Second, the external efficiency and financing of the subsector could be improved by greater private sector involvement. Third, vocational and technical training institutions could improve the overall appropriateness and quality of their training by linking their programs more closely to the changing priorities of the workplace. Fourth, a mechanism is needed to coordinate, on a national level, the activities of the subsector. Fifth, most locally trained vocational education instructors have not received training in pedagogy and this tends to limit their effectiveness. Sixth, little knowledge exists regarding full costs of the out-of-school programs, including the Brigades. Seventh, the subsector appears to provide less than optimum emphasis on high-level technical skills and inadequate access for

females. Eight, students generally lack counseling as to career opportunities and requirements.

Recommendations. Recommendations concerning vocational and technical education and training are in five areas, by priority:

First, to improve external efficiency, (1) establish a labor market information service, which includes information from tracer studies of graduates, as one step in completing periodic national manpower surveys; (2) develop a national plan for vocational and technical education; and (3) increase involvement of the private sector.

Second, to strengthen internal efficiency, (1) delineate responsibilities and relationships among the ministries involved in the subsector, particularly the MOE which has curriculum responsibilities for several institutions, and the Ministry of Home Affairs whose Department of Labor administers the National Trade Tests; (2) come to terms regarding testing in the subsector (use of City and Guilds examination and/or the National Trade Tests); (3) improve data collection; (4) expand vocational teacher training with an emphasis on improved teaching methodologies; and (5) improve career counseling at the secondary level.

Third, to improve access and equity, (1) increase opportunities for women and girls, and (2) assess opportunities and entry requirements for training as more secondary leavers compete for training with lesser schooled individuals.

Fourth, to strengthen administration and supervision, (1) establish and implement a national coordinating mechanism for the subsector, and (2) improve the management and accounting skills of Brigades staff and increase accountability.

Fifth, to improve cost and financing of the subsector, (1) obtain comparative cost data for all programs, and (2) explore strategies for more cost-effective training.

1.10.6 Nonformal Education

In accord with government's emphasis on rural employment and access to services by all Batswana, attention is given to the delivery of nonformal education (NFE) programs in three areas: agriculture, health, and life skills (e.g., functional literacy and numeracy) and income generation. Nonformal education is within the purview of the Ministries of Agriculture, Health, Education, Industry and Commerce, Local Government and Lands, and Home Affairs. In addition, the Office of the President administers the national youth service program Tirelo Setshaba, and nongovernmental organizations (NGOs) provide a wide range of NFE programs.

Programs reaching the largest audiences are operated by government. Ministerial NFE activities are fitted within a well-conceived national extension system intended to promote coordination and cooperation among the various entities. The national extension system enables government services to be delivered through a hierarchy of offices at the national, district, and village levels.

At the national level, extension activities by various government entities are coordinated by the Rural Extension Coordinating Committee. At the district level, government's NFE activities are coordinated by a District Extension Team consisting of district officers of the different ministries, local government officials, and representatives from formal education. Reporting to the ministries' district officers are village field workers, who, with village officials, comprise a Village Extension Team. Botswana participation in the country's development processes is promoted through an elected Village Development Committee which identifies local needs and works with Local Councils and the Village Extension Team to address village concerns.

The strength of Botswana's national extension system is its emphasis on participation, consultation, and inter-ministerial coordination. While the structure described does not guarantee jointly designed and implemented NFE activities, it provides an important framework for such activities. A limitation is that little opportunity exists for a similar level of coordination among NGOs involved in related activities.

In the area of agriculture, major programs include agricultural extension, farmer training through short courses, and 4-B clubs. In 1983 government employed 198 Agricultural Demonstrators (ADs) who reached an estimated 15 percent (115,000) of all farmers. Fewer than 20 of the ADs are women although 45 percent of Botswana farmers are women. Most of the ADs have completed a two-year course at Botswana

Agricultural College after achieving at least a Junior Certificate. The Ministry of Agriculture organizes a radio program broadcast regularly for farmers. Few data are available to assess the extent to which farmers have benefitted from the extension activities.

Training in agricultural skills is offered to male and female farmers at five Rural Training Centres, with 10,985 individuals participating in such training in 1981-82. An active Agricultural Information Service disseminates research results through materials in various media. The 294 4-B clubs serve approximately 8,000 rural Batswana youth.

In the area of health, government employs approximately 300 Family Welfare Educators (FWEs) who work on the Village Extension Teams and serve from 500-2,000 people each. The Village Health Committee selects an individual who has passed Standard 7 to become the FWE and undergo three months' training. Research indicates that the FWEs are judged by villagers to be the most effective of all extension workers because they have the highest contact rate among the cadres and tend to live with those they serve.

In the area of life skills and income generation, the Ministry of Education's Department of NFE operates correspondence courses at the Junior Certificate and Cambridge levels, and a nationwide literacy program. The correspondence program enrolled 7,224 students in 1982 and the literacy program enrolled 18,779. Literacy group leaders and literacy assistants are responsible to the District Adult Education

Officer. The Department of NFE has developed a series of primers available to all learners and the department also operates a radio program.

Tirelo Setshaba volunteers, who have completed secondary school, serve for one year as primary school teachers or village development workers after a short training program; about 450 volunteers were serving in 1983. The NFE activities of the Ministry of Industry and Commerce are directed toward potential and existing small entrepreneurs in the rural areas; in 1983 about 1,700 such individuals, many of them illiterate, received training or financial support. A Rural Industries Innovation Centre also provides training, conducts research on technologies appropriate to Botswana, and has an extension program to introduce successful technologies. The Ministry of Local Government and Lands also is actively involved in NFE activities coordinated at the district level. The Remote Areas Development Programme seeks to serve all nationals living outside the established village structure, about 15 percent of the population who are hunters and gatherers, nomadic, or without livestock. The Ministry has an array of community development, women's, and youth programs, as well. The Ministry of Home Affairs conducts NFE activities to strengthen Botswana's cultural identity, and also focuses on women's concerns in both the rural and modern sectors and is responsible for NGO activities in Botswana.

NGOs are very active in providing NFE. The Botswana Christian Council (BCC), the Botswana Council of Women (BCW), and the YWCA have

extensive programs for employment-related skills training. The largest such program is the Urban Industrial Mission (BCC-sponsored) which provided learning opportunities in trades and textiles to 848 Batswana in 1982. Both the BCC and BCW participate in the National Literacy Program. The Red Cross and BCW focus on health and nutrition education.

Four major needs are related to the delivery of NFE services to Batswana. First, research data are lacking for the evaluation needed to enable better management of NFE projects and development of programs more responsive to learner needs. Second, better coordination is needed among NFE programs offered by government and NGOs. Third, problems of staff adequacy must be addressed in terms of numbers, training, and retention. Fourth, the content of many NFE programs should be examined to improve the link to productive participation in the economy. Plans of the concerned ministries address two general topics: increased coverage and staff development.

Conclusions. Nine conclusions result from the assessment of nonformal education. First, the data base on NFE activities is insufficient to permit assessing the kinds of financial and personnel resources being invested relative to the outcomes resulting from various combinations of investments. Second, most NFE programs are not linked closely to employment opportunities. Third, NFE is not well coordinated between government and NGOs, nor is it well integrated with formal education. Fourth, the research and evaluation capabilities related to NFE need strengthening. Fifth, manpower skill

needs for NFE staff are not well defined. Sixth, training of fieldworkers requires evaluation as to appropriateness, duration, and level. Seventh, procedures for recruiting and placing of NFE fieldworkers take inadequate account of experience, interest, and knowledge required. Eighth, linkages among research, training, and information dissemination are weak or lacking. Ninth, some existing policies complicate NFE activities and goals.

Recommendations. The recommendations related to nonformal education have priority as follows:

First, to improve external efficiency, (1) link NFE programs more directly to employment opportunities and activities that contribute to a better quality of life for Batswana, and (2) evaluate the need for a bridging program from the National Literacy Program to the Secondary School Correspondence Program, and the desirability of offering formal school curriculum through the Department of Nonformal Education.

Second, to improve internal efficiency, (1) design and institute a mechanism for collecting and storing relevant data on NFE programs, (2) evaluate training of the different cadres of agents and instructors and develop a better mechanism for recruiting and placing fieldworkers, (3) assess the extent to which the NFE projects and activities of NGOs fit government's national development priorities, (4) use NFE more extensively as a forum for pilot activities to develop new methodologies, (5) begin dialogue to alter conflicting government policies that hamper development of small business in the rural areas, and (6) improve the integration of formal and nonformal education.

Third, to improve administration and supervision, (1) provide district and village level workers with training in administration and management, and (2) develop Botswana's research capacity for the analysis of NFE.

Fourth, enhance access and equity by conducting small-scale needs assessments to identify kinds of NFE activities desired by particular groups of Botswana.

Fifth, better assess costs and financing by developing and implementing mechanisms to enable data collection on investments in NFE.

