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Assessment of Basic Education in Zambia and Possible Options for USAID Investment

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Acronyms

ABEL	Advancing Basic Education and Literacy
AFR/SD/HHR	Africa Bureau/Sustainable Development/Health and Human Resources
CIDA	Canadian International Development Agency
EFA	Education for All
EMB	Education Management Board
ESIP	Education Sector Investment Program
FINNIDA	Finnish International Development Agency
GRZ	Government of the Republic of Zambia
IEQ	Improving Educational Quality
JICA	Japan International Cooperation Agency
MOE	Ministry of Education
MOF	Ministry of Finance
MPU	Micro Projects Unit
NGO	Nongovernmental Organization
ODA	Overseas Development Agency (U.K.)
PCD	Partnership for Child Development
PTA	Parent Teacher Association
SIDA	Swedish International Development Cooperation Agency
SO	Strategic Objective
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Cultural, and Scientific Organization
UNICEF	United Nations Children's Fund
WHO	World Health Organization
ZERP	Zambia Education Rehabilitation Project

Executive Summary

The purpose of this study is to conduct an assessment of the basic education subsector in Zambia and outline possible options for USAID involvement. This study provides USAID/Zambia and USAID/Washington's Africa Bureau/Sustainable Development/Health and Human Resources division (AFR/SD/HHR) with an up-to-date review of basic education and its constraints; a description of other donors' activities and experience in the sector; and possible strategies and activities to address the constraints and provide linkage to USAID/Zambia's current portfolio.

The education sector in Zambia is in crisis in all the areas that define an education system, including quality, access, equity, efficiency, and relevance. The fundamental problem in the Zambian educational system is fairly simple: the number of children to be educated has been rising fast, while the resources available to educate them have not kept pace and, until recently, were falling faster.

The economic decline that followed the loss of copper revenues, coupled with poor policy choices, resulted in a sharp decline in all categories of real (constant prices) government expenditures. Real expenditures on education, however, declined at a far greater rate than nearly any other sector. Within the education sector, primary education suffered particularly.

The combination of shrinking resources and increasing enrollment has created numerous problems for the system: the deterioration of the physical infrastructure due to the lack of maintenance and heavy use; little or no furniture in many schools; multiple shifts and low levels of instructional hours; few textbooks and almost

no learning materials; high pupil-teacher ratios; increased teacher workloads with lower salaries and low teacher morale; increased numbers of untrained teachers; and nearly one-third of all school-age children (largely girls) not in school for lack of places. As a result, the demand for nonformal education—training of out-of-school youth, skills training, training for self employment, and entrepreneurial training—has increased, while overall resources have declined. Taken together, these factors have led to a serious deterioration of the Zambian educational system. It is barely sustainable as it is now organized and funded.

Although the current state of the education system seems bleak and there are a number of good reasons to be cautious about investing in Zambian basic education, a strong case for USAID assistance to the sector can be made. First, investments in education can be made on political and humanitarian grounds. Second, the government of the Republic of Zambia (GRZ) appears to have finally acknowledged the severity of the crisis that looms in the schools and has begun to do something about it. Since 1994, the GRZ has increased the share of resources allocated to education and has directed a greater share of resources to the primary subsector, where the problems are more acute. The policy and analytical framework for revitalizing the education sector have been put in place through the Education Sector Investment Program (ESIP), and the necessarily slow process of defining priorities and obtaining Zambian ownership of those investment objectives is well under way. Moreover, many of the potential obstacles to effective intervention in the education sector have been addressed by ESIP. Third, given the relatively low level of resources in the sector, the marginal impact of additional resources is very high. Fourth, Zambia appears to be on the verge

of an economic turnaround, but a poorly developed endowment of human capital will constrain that turnaround. Fifth, with the advent of ESIP and the enthusiasm of other donors in Zambia, this is a propitious time to join forces with USAID's partners and work together to address one of Zambia's most serious problems. The GRZ, through ESIP, has encouraged growing communication and cooperation between itself and the donor community, and this cooperation bodes well for improving policy dialogue, targeting resources to the areas of greatest need and impact, and avoiding duplication. Sixth, it is apparent from the review of basic education in Zambia that several low-cost but high-impact interventions can both positively affect USAID/Zambia's current portfolio and make an enormous impact on basic education in Zambia.

For these reasons, and the well-known economic arguments for investment in education, this report suggests that good results can be achieved in the basic education sector in Zambia with relatively modest investment, provided there are continued policy and financial improvements from the GRZ. The timing is right. In 1998 Zambia will begin moving toward an integrated sector investment approach. USAID has time to observe the process, gauge the GRZ commitment to policy and financial improvement, and develop programs and agreements for the FY 98-99 planning cycle.

After analyzing the education system, the assessment team considered 13 different areas for investment but determined only 6 to be appropriate for USAID at this time. The six areas are:

1. Decentralization and Management Reform
2. Youth Development through Multiple Interventions
3. Girls' Basic Education
4. Improving Learning and Health in Schools
5. Education Development Fund
6. Meta Option—LearnLink

All six options can be directly or indirectly linked

to the current USAID/Zambia portfolio while, at the same time, providing low-cost, high-impact improvements in the education system. These options are thought to be best implemented through ESIP and in cooperation with other donors. The first option, Decentralization and Management Reform, is a medium- to long-term intervention that implies a commitment to another Mission strategic objective, while the other five options are short- to medium-term interventions that complement the current portfolio. The sixth option is a crosscutting activity that could be used in conjunction with any of the other options. The assessment team believes that any one or a combination of the options offered here is a sound investment in Zambia's future.

Review of Zambian Context

Economic and Social Overview of Zambia 1965-95

Economic performance, economic policy, and social welfare have been inextricably intertwined with the performance of the copper industry since Zambia achieved independence in 1964. The basic economic strategy that Zambia followed, whatever its reasons, was a disaster. It focused on the wrong sector (manufacturing), the wrong primary actors (parastatal companies), and the wrong methods (tariff protection and price controls). The result was one of the worst records of economic decline of any country not engaged in warfare. Since 1991, Zambia has embarked on an economic reform program that appears to have stabilized the macroeconomy and established the institutions and players critical for the success of market-led agricultural growth.

During the first decade after independence, copper mining accounted for about a third of gross domestic product (GDP), over 80 percent of foreign-exchange earnings, and about a third of the government's fiscal revenue. Copper mining pervaded all aspects of life; about 50 percent of the population depended on it directly or indirectly for their livelihood. Production of copper declined

steadily after the early 1970s, as the development of new sites failed to offset the loss in output from old mines. In 1995, only 327,000 tons of copper were produced, which is less than 50 percent of the level at independence and only 77 percent of the level in 1990. The fall in the volume of production was compounded by a similarly sharp decline in the international price of copper. In 1995, the real price of copper was only about 40 percent of the level in 1965. Despite the dramatic declines in copper production and its price, copper and cobalt accounted for 77 percent of Zambia's export earnings in 1996.

When the price of copper declined in the mid-1970s, it was initially thought to be temporary. Instead of initiating policies to stimulate other export sectors and restructure the economy away from a dependence on copper, the GRZ borrowed abroad to finance a large balance of payments deficit and maintain living standards and social investments. As copper revenue failed to revive and the debt started to mature, servicing the debt became increasingly difficult. As a result, Zambia's foreign debt increased to more than US\$7 billion in 1990, making Zambia one of the most indebted countries in sub-Saharan Africa.

The decline in the copper industry also led to a sharp fall in the fiscal revenue of the GRZ. Total fiscal revenue fell from 36 percent in 1974 to 8.4 percent in 1994. While revenue was falling, expenditure restraint was delayed as consumer and producer subsidies and public-sector employment (and its wage bill) continued, resulting in tight constraints on nonwage spending, particularly investment in public services. For example, from 1974 to 1983 total education expenditures declined 38 percent; in the period 1983 to 1991 expenditures further declined 50 percent when they fell to a low of less than 8 percent of total public expenditures. The consequences of this decline on social well-being have been devastating.

Before independence, Zambia's social indicators were among the lowest in the world, and

the distribution of income was very uneven. After independence, addressing the social well-being of the population became a high priority, and a high copper income made this possible. Improvements in social indicators were achieved until 1974. As copper production and income started to shrink and debt servicing began to bite, social indicators started to deteriorate.

Poverty in Zambia is very high. In 1991, about 68 percent of all Zambians were living in households with expenditures below a level sufficient to provide basic needs, and it is widely agreed that that number has increased to more than 70 percent in 1995. After the price of copper collapsed in 1975, economic performance has been disastrous, and real GDP in 1995 was only 13 percent higher than in 1975. With a population growth over the period in excess of 3 percent per year, per capita income declined by 53 percent between 1975 and 1996 and is estimated to be only US\$320.

Rural poverty is more prevalent and more severe than urban poverty; poverty is also greatest in remote provinces and remote districts within a province. Urban poverty (despite a relatively low population density, Zambia is the third-highest urbanized country in sub-Saharan Africa at 46 percent) is concentrated in peri-urban areas and is increasing relative to rural poverty. More than 30 percent of Zambians spend 85 percent of their income on food, making them extremely vulnerable to price and income changes. Crowding and poor sanitation make the urban poor vulnerable to weather conditions and associated diseases. Chronic malnutrition is pervasive in both rural and urban areas. More than half a million children of school age (one-third of the eligible population, largely girls) do not attend school. Infant mortality increased in the last decade—one of the few countries in the world to experience an increase—and recent data suggest that infection of HIV is above 30 percent among urban residents. An ever-smaller share of the urban population is engaged in formal-sector wage employment with its relative

security and access to services.

One of the more formidable economic and social problems Zambia faces is creating employment for the large and increasing labor force. The labor force is estimated to be about 3.5 million persons, of which about 80 percent is reported to be employed (this figure includes small farm agriculture and the informal sectors). Due to the existence of large seasonal and structural unemployment, however, most of the employed are engaged in low productivity occupations. Moreover, even in the formal sector—estimated at half a million—many were only partially employed. Effective unemployment and underemployment is, therefore, much larger than the statistics suggest.

To address this situation, in 1992 the current government adopted a wide variety of policy and institutional changes designed to rehabilitate the economy. The strategies adopted consisted of monetary and budgetary measures designed to stabilize the economy by curbing inflation rates and reducing budget deficits, and market and trade arrangements designed to make the economy more efficient by allowing market forces to operate, privatizing government firms, and liberalizing trade. Despite these measures, the economy continued to decline in three of the five years since 1992. The generally poor performance in the 1990s is attributed to a variety of factors such as recurring droughts that negatively affected the agriculture sector, an unproductive manufacturing sector, and production difficulties in the mining sector.

As of early 1997, Zambia appears to have emerged from the most difficult stages of its economic transition, and its economic outlook is improved. Zambia has reduced its vulnerability to the external shocks of periodic drought and falling copper prices through crop diversification, growth in nontraditional exports, and privatization of government firms. Indeed, the World Bank has recently concluded that Zambia has the potential to achieve GDP growth over the next decade of between 4 percent and 5 percent, pro-

vided the economic reform program continues and the international community is supportive.

Government of Zambia Priorities

The economic reforms the GRZ adopted in 1992 remain priorities in 1997, and policies in all other sectors are conceived as part of a process of economic adjustment. General priorities include movement toward a free-market privatization of national industries; reduction of the civil service; social-sector reform marked by decentralization of administration and delivery of services; cost recovery for government services; and encouragement of private investment in all productive areas. Other priorities of the government include monetary policies such as moving toward balance in trade, getting balance of payments under control, building foreign currency reserves to adequate levels, and guaranteeing creditor payments. Fiscal policy priorities under the new market economy include widening the tax base, removing tariff barriers to imports, balancing government budgets, and practicing program budgeting.

In his speech at the opening of Parliament in January 1997, President F.T.J. Chiluba outlined specific government priorities for the coming year. These included: reinstating the House of Chiefs to reinforce the role of traditional leadership; taking harsh measures against crime and corruption; providing attention to the security of pensioners; furthering liberalization of markets; continuing police reform; streamlining and improving the efficiency of the foreign diplomatic service; continuing to depoliticize the military; furthering the rehabilitation and decentralization of education; increasing spending on education and demonstrating the government's commitment to the sector; addressing the needs of youth in the informal sector; linking poverty eradication programs in the national safety net to skills training and work; and continuing reform and decentralization of health services.

USAID/Zambia Response

Economic, political, and health reform are the

key features of the U.S. government's sustainable development efforts in Zambia. The USAID/Zambia program supports the GRZ's policies and efforts to reestablish democracy, improve governance, reopen a market economy, and improve the delivery of preventive health services.

The program has four strategic objectives, including:

Strategic Objective 1: The State Removed from the Provision of Goods and Services

Activities under this strategic objective (SO) include technical assistance to the Zambia Privatization Agency to manage the sale of state-owned enterprises; advisory services to the Communications Authority to establish an industry regulatory framework and privatize telecommunications; and executive advisories, in-country and regional training, and U.S. scholarships to strengthen the management of private companies and help develop small- and medium-sized enterprises.

Strategic Objective 2: Increase the Productive Participation of Rural Enterprises and Communications in the National Economy

Activities include improving agricultural marketing systems; providing short-term assistance to commercial agribusiness firms; supporting small-holder associations and nongovernmental organizations (NGOs) to improve access to crop inputs and product markets; and helping community organizations gain greater authority over natural resource management.

Strategic Objective 3: Increased Use of Practices that Improve Child and Reproductive Health

Activities in this SO include contraceptive social marketing; information, education, and counseling services; strengthening the quality of service delivery; policy development; the development and strengthening of indigenous community-based organizations; improving public health education; reducing HIV transmission through cost-effective STD treatment; providing greater

access to condoms; strengthening support to the National AIDS/STD/TB/Leprosy Prevention and Control program; and promoting a decentralized, integrated package of services to improve child survival, including family planning, redesign of the health-information system, malaria prevention, training for health care workers, and preventive-health resources.

Strategic Objective 4: A More Sustainable Multi-Party Democracy Built

Key activities under this SO include civil rights promotion and civic education, encouragement of an independent and professional media through training, and policy analysis and coordination.

Purpose of Report

The purpose of this report is to assess the basic education subsector in Zambia and outline possible options for USAID investment. Having not worked in the sector for a considerable period, the Mission wanted a review of the sector and its constraints, a description of other donor activities and experience, and suggestions of possible activities and linkage to the Mission's portfolio. The aim is to provide USAID/Zambia and USAID/Washington with an accurate, up-to-date picture of the state of basic education in the country and, if warranted, suggest possible strategies to address the constraints in basic education. The report also attempts to show the linkage between possible basic education investments and USAID/Zambia's current portfolio.

Methodology

Before arriving in Zambia, the assessment team assembled and reviewed existing documents and data on basic education in Zambia from a variety of sources, including the USAID document center, the World Bank, and the Academy for Educational Development, which had conducted an assessment of the primary and nonformal education subsectors in Zambia for USAID in 1991. Once in Zambia, the team collected data and documents and interviewed officials, policymakers, and interested observers from

GRZ ministries and organizations, the University of Zambia, the private sector, NGOs, and all the major donors. The team also made several field trips to urban and rural schools serving different socioeconomic groups to ensure that a sense of reality permeated our recommendations. Moreover, the team employed one of Zambia's leading authorities on basic education, Professor G. Lungwangwa, to ensure that our findings were accurate and realistic. On the basis of the site visits, readings, and interviews, the assessment team drew conclusions and made its best professional judgments about the state of basic education in Zambia and formulated investment options for USAID/Zambia.

Limitations

The assessment team conducted the study over little more than a two-week period during which time USAID officials were engaged in the development of the Results Reports and Resources Review and GRZ officials were engaged in their annual budget submission to parliament. Although all gave generously of their time, guidance, and experience, and the team endeavored to gather the most accurate data from secondary sources, the findings in the report are necessarily impressionistic. We benefited immensely from the previous work and analysis of many very talented Zambians and expatriates but, unfortunately, any mistakes are ours alone.

Basic Education in Zambia

Overview of the Education System

Zambia has a centralized education system in which the Ministry of Education (MOE), at the national level, formulates and communicates policy, disburses monetary resources authorized by parliament, sets human resource ceilings and assigns personnel, and defines standards, monitoring, and evaluation mechanisms. The MOE also defines curricula, develops instructional materials, allocates and transports material resources, develops tenders for procurement, and assigns physical resources.

To a lesser degree, and in their respective areas, the Ministry of Science, Technology and Vocational Training; the Ministry of Community Development and Social Services; and the Ministry of Youth, Sports and Child Development collaborate with the MOE in the provision of educational services.

Lines of communication extend from the ministries to nine provincial education offices and on to 63 district education offices. Headmasters/mistresses run the schools, and they report to the district education office.

Zambia's formal education system follows a seven-five-four model (seven years of primary, five years of secondary divided into two years of junior high school, and three years of senior high school, and four years of university).¹ Basic education in Zambia runs from grades 1 to 7, but the MOE is attempting to extend it to grade 9 (about 400 of these basic schools have been established largely through community support). At basic schools, a certain amount of structural and pedagogical overlap occurs between upper primary and secondary school. In principle, schools practice automatic promotion from one grade to the next within primary and secondary schools, but in a number of mostly rural areas, progression from grade 4 to grade 5 depends on a locally set competitive examination. On the whole, primary education appears to have high internal efficiency, with repetition rates of less than 5 percent. However, this internal efficiency is a result of the MOE's automatic promotions policy, as explained in the section on efficiency below.

The Examinations Council of Zambia administers national examinations at the end of grades 7, 9, and 12. Only students who pass these exams can progress to the next educational level. Examinations at grade 7 are given in English, math, science, social studies, verbal reasoning,

¹ Currently Zambia has three types of schools at the basic education level. 1) Lower primary schools only, i.e. grades 1-4 only, found mostly in rural areas. 2) Full primary schools grades 1-7. 3) Basic schools, i.e. full primary schools with two junior classes of grades 8 and 9.

and abstract geometric relationships. In both primary and secondary schools, students are promoted from grade to grade within their cohort without competency tests to evaluate ability or comprehension. The national exams effectively serve as gatekeepers to advancement, resulting in a pyramid-shaped access to opportunity. A significantly large proportion of examination takers are barred from progressing essentially due to limited slots available in schools.

Most urban schools run three sessions per day; each shift provides a total of three and a half hours of instruction or student-teacher contact a day. In sparsely populated rural areas, multi-grade schools have been established to provide full primary education. Schools operate for 195 days a year in three successive terms, starting in January and ending in November with a one-month break in between terms. The student-teacher ratio for a typical school is 40 pupils per teacher. But usually the average is much higher. Five students share one textbook in a core subject area, when available.

The primary school curriculum covers English, math, science, social studies, religious education, Zambian language, physical education, and creative activities (which include arts and crafts education). Class periods last 30 minutes, and each student attends six subjects a day in a five-day school week.

The system is characterized as being too centralized; virtually all decision-making occurs within the ministries. Ministerial units are said to lack coordination among them, and dissemination of information is judged to be selective and not timely. Management at the ministry headquarters is considered top-heavy. All decision-making authority, even for routine operational matters, rests with the permanent secretary.

Within such an administrative structure, there are 1.5 million students, 16,695 teachers, 3,883 primary schools, and 666 secondary schools. There are also two universities with a total student enrollment of about 4,000. Greater

emphasis is placed on higher education, at the expense of primary, as evidenced by per-pupil government expenditures. For example, per-pupil expenditure for secondary education students is 4.22 times that of primary level students. For vocational education students the ratio is 101 to 1, and for university students the ratio is 127 to 1.

As described in individual sections below, financial, personnel, and physical resources are inadequate to serve the educational needs of Zambia's student population. Teacher morale is very low due to inadequate remuneration and poor working conditions. Parental commitment to their children's education is strong, but they perceive the education to be of poor quality. By every criterion evaluated (e.g., quality, access, equity, efficiency, and relevance), parents are accurate in their appraisal of the school system.

The sections on Management, Planning, and Policy Issues and Government Strategy for Education below describe significant and important changes being introduced to address the problems and conditions just mentioned. In particular, the Public Service Reform Program and the World Bank-financed projects, the Zambia Education Rehabilitation Project (ZERP) and the Education Sector Investment Program (ESIP), show some promise that real transformation can occur. Donors have historically shown a strong commitment to providing assistance to the education sector in Zambia and have expressed an eagerness to participate in decentralization and coordination efforts.

Financing Education

Public Expenditures on Education

The education sector in Zambia has experienced an 88 percent decline in real terms (constant prices) in public funding during the past two decades. Primary and secondary education suffered the most, while at the same time, enrollment in these areas increased. The combination of shrinking resources and increasing enrollment has created numerous problems: a deterioration of physical infrastructure due to lack of mainte-

nance and heavy use; little or no furniture in many schools; multiple shifts and low levels of instructional hours; an acute shortage of textbooks and learning materials; very high pupil-teacher ratios; increased teacher workloads with lower salaries and low teacher morale; increased numbers of untrained teachers; and nearly one-third of school-age children (largely girls) not in school for lack of places. As a result, the demand for nonformal education—training of out-of-school youth, skills training, training for self-employment, and entrepreneurial training—has increased, while overall resources have declined. Taken together, these factors have led to a serious deterioration in the quality of education in Zambia.

The economic decline that followed the loss of copper revenues, coupled with poor economic policy choices, resulted in a sharp decline in all categories of real government expenditures. But expenditures on education declined in real terms at a far greater rate than nearly any other sector.

Zambia's commitment to education, as measured by levels of expenditure, ranks as one of the lowest in the world, even compared to those with weaker economies. In 1992, for example, Zambia devoted about 2.7 percent of its GNP to education. Only 14 other countries in the world devoted smaller proportions. Zambia also compares very unfavorably with other countries in the region. By comparison, Zimbabwe devoted 9.1 percent, South Africa allocated 7 percent, and Swaziland spent 6 percent. The average for all of sub-Saharan Africa was 3.9 percent. In 1996, Zambia budgeted an increased share to education (a little over 3 percent of GNP), but it is unclear if those expenditures were actually made and whether there was an increase in real terms. As a share of the total public budget, the education sector has similarly experienced a reduction from a share of 11 percent in the early 1990s to only 8 percent in 1994-95. In 1996 the share of budget allocated for education had risen to 10.4 percent, which is in keeping with the conditions established by the World Bank. By con-

trast, Zimbabwe, South Africa, and sub-Saharan African countries on average allocated 19.4 percent, 22.1 percent, and 19.4 percent, respectively. Total aggregate public expenditures on education in Zambia have generally declined throughout the 1990s, even before taking into account an estimated 2.9 percent increase in the number of Zambian school-age children. Although the decline in public expenditures on education in the 1990s has been less dramatic, it suggests that the government has yet to decisively address the issue of adequately funding education.

Primary education claims the lion's share of total public expenditures on education. Since 1993, it has been above 35 percent of the total public expenditures on education and has now reached the government's target of 40 percent. However, approximately 657,000 primary-age children are not in school, and once teacher salaries and other personal emoluments (95 percent of the primary education budget) are deducted from the 1996 budget of Zambian Kwacha (ZK) 41.9 billion (US\$34 million), not much more than \$1 per child per year remains for learning materials, furniture, capital investment, and other instructional inputs.

Secondary education's share of total public expenditures has declined in the 1990s. The ratio fell from 16.9 percent in 1990 to 10.1 percent in 1993 and, after rising to 13.3 percent in 1995, is expected to remain at about 12 percent in 1996-97. Personal emoluments consume 60 percent of those expenditures, with bursaries (scholarships) taking the majority of the remaining resources. In 1996 approximately 180,000 students were enrolled in secondary schools. Another 350,000 young people aged 14 to 15 were out of school.

Tertiary education, for this financial analysis, consists of universities and teacher training colleges. University education's share of total public expenditures on education has decreased a bit over the last five years, from 28.7 percent in 1990 to 21.8 percent in 1995. By contrast, Zimbabwe allocated 12 percent to tertiary educa-

tion, South Africa 14.5 percent, and the average for sub-Saharan Africa was 15 percent. The estimated 1996 expenditure of ZK18 billion (US\$14.6 million) for about 4,000 students means the public expenditures for university students are 206 times greater than for primary school students. Though not an entirely fair comparison for a variety of reasons, if personal emoluments are deducted from those figures, resources per university student are approximately 800 times those for primary students.

Teacher training colleges' share of the total public education budget is about 4 percent and has not changed significantly over the last five years. In view of the numbers of untrained teachers (11,000), the apparent declining levels of quality in instruction, and the impact of HIV/AIDS (an estimated 42 percent of teachers are HIV positive), the low level of resources devoted to teacher training points to a bleak future regarding the quality of education.

Technical and vocational training's share of total public education expenditures has declined from a share of 7.3 percent in 1991 to 2.5 percent in 1994. The level is far below the 8 percent target share the government established. Literacy programs receive very limited public resources; communities seem to meet those needs almost entirely by themselves. Administrative expenditures for Lusaka and the regional offices constitute a major, and relatively high, claim of the total public expenditure on education at 17.1 percent. This appears to be the result of the fact that four ministries—Ministry of Education, Ministry of Science, Technology and Vocational Training, Ministry of Community Development and Social Services, Ministry of Sports, Youth and Child Development—all play a role in different aspects of education.

Household-Level Financing of Education

Over the past five years, the government has intensified the policy of cost sharing in education. The cost-sharing measures (user fees, Parent Teacher Association [PTA] levies, and the school fund), while generating additional revenue for the

sector, appear to drive out the poor and ultra-poor, as reflected in the low attendance ratios for children from poorer households. A limited World Bank survey revealed that the estimated costs of fees, uniforms, exercise books, and transport for parents with children in primary school ranged between ZK35,000 and 60,000 per child in 1996, while the 1996 budgeted public resources available per primary pupil were ZK28,000. Based on this analysis, it would appear that households can spend more than twice the amount on education that is provided by public funding.

A second limited study, financed by the Swedish International Development Cooperation Agency (SIDA), found that the recent increases in parental contributions have led to increased drop-outs of school-age children, especially girls, in the case of poor and ultra-poor families. The study found that parents, already bitter about the quality of education, simply could not afford the increased costs, in spite of the high value they place on the education of their children. The study also found that the experience with cost recovery in some secondary schools led to higher parental contributions, and through improved teacher incentives and facilities, to better performance. It is estimated that 44 percent of the funding for basic education comes directly from communities, 50 percent from the GRZ, and 6 percent from donors.

Early childhood education is financed entirely by households. This level of education is not a government responsibility. The role government plays is to assist in training teachers and developing curriculum materials. Only 1 to 2 percent of Zambian children receive preprimary education.

External Financing of Education

The World Bank estimated that, while total bilateral and multilateral assistance rose from US\$311 million in 1990 to \$687 million in 1994, the share directed toward education has declined from 12 percent of total external assistance in 1990 to 5 percent in 1994. In fact, the total external assistance directed toward education re-

mained at about \$37 million; the majority of external funds went toward economic reform and budgetary support. The implication is that if the government does not accord high priority to education in its budget, then a lower proportion of external resources will go to the education sector. It is also worth noting that the total external assistance of about \$37 million comprises 52.7 percent of total public expenditures on education (ZK89.5 billion or \$70.2 million). Without this level of external assistance, the Zambian education system would have fallen to unfathomable levels. Moreover, it should be clear that the marginal impact of additional investments by donors is very high.

Budgeting Policy and Financial Management

A review suggests that in the preparation of the yearly budgets, insufficient effort is made in assessing the policy and activities behind the budget proposals. Each budget is composed of incremental budgets compiled from schools, districts, and provinces as an aggregation, and then subsequently adjusted to a ceiling set by the Ministry of Finance. In the process some priority areas are underbudgeted, while others are not financed at all. Moreover, significant discrepancies exist between the approved budgets and actual expenditures, undermining the very purpose of planning and budgeting. Departing from the planned figures decreases the chances that the ministry will deliver timely education services. The policies used to justify the allocations are not carried out and do not have the intended impact.

The major problem in education in Zambia is the enormous gap between the need to provide access to quality education for Zambian children and the public resources available to supply the services. The underlying causes are the prolonged economic decline and the apparent public expenditure policy to divert resources away from the education sector. The decline in educational expenditure, albeit less severe in recent years, has been so massive that the system is

barely sustainable at its present level of funding. The result has been a decline in quality, in access, in equity, in efficiency, and in relevance. Continued increases in funding for education and reallocation of sector resources are imperative if the country is to build the human-resource base required for accelerated and sustainable economic growth and poverty reduction.

Quality

The salient classroom features that define quality of education are pupil-teacher ratio, time spent engaged in tasks, teachers' skills and knowledge, student attendance, language of instruction match with students' first language, adequacy of learning materials, and appropriateness of learning materials. Other indicators include students' health status; distance of school from students' homes and transportation facilities; quality of physical facilities; and teachers' attitudes, which may be largely defined by working conditions, remuneration, and benefits. The quality of education in Zambia scores very low in all the features and variables listed here.

Teacher-Pupil Ratio

Pupil to teacher ratio is officially 40 students to one teacher but can range up to 80 pupils to one teacher. In an under-resourced environment, and with this number of students in a classroom, it is difficult to blame a teacher for employing lock-step, rote learning through straight and strict lecturing methodologies. This methodology is used because it makes discipline and classroom management possible, even if it correlates with very low student learning. Overcrowdedness eliminates the possibility of teachers providing individualized attention to student needs. Under these conditions, students' concentration is constantly challenged.

Time in Task

In the absence of research that includes detailed classroom observations, the use of a proxy will have to serve instead of a measure of time in task. The number of hours in an official academic year for grades 1 through 4 is 630. For grades 5 through 7, it is 990. The number of

hours in an academic year has been eroding because of the necessity to conduct three and even four sessions of schooling a day due to overcrowding in urban areas. In multiple-session schools, the hours of instruction per day are 3.5. A primary school visited, running three consecutive sessions, teaches 611 hours a year per session. A second primary school visited teaches 658 hours a year. In the latter school, classes started at 6:45 a.m. For comparison purposes, the number of hours of instruction in a typical U.S. school is 1,056 a year for lower primary and 1,232 for grades 4 to 6.

Of the 3.5 or 3.25 hours of instruction per day, 15 minutes are allotted to assembly; 40 minutes to religious studies, physical education, or music; and another 15 minutes to a break. Teachers confess that about 10 minutes are lost per period in making the transition from one academic subject to another. The significance of this detailed account of a school's schedule is to point out that in a classroom of 50 or 60 students or more, where five or more students share a text, actual instruction is reduced anywhere from 219 to 345 hours a year, or from 62.5 to 98.5 days a year, respectively. Yet, the examinations are structured to test learning over a full, single-session academic year.

Teacher Qualifications

Teacher qualification standards are low; a college degree in basic education is not required. A bachelors program was initiated in Zambia's only university for basic education teachers just last year. However, graduates are expected to occupy posts in primary teacher education colleges or ministerial positions (e.g., curriculum development) and not in primary classrooms. A teacher is considered qualified if he or she attends a two-year teacher training college after grade 12. Twenty-three percent of all teachers are untrained, most of them at the primary level. Rural areas have more untrained teachers than urban areas.

Student Attendance

In addition to the reduced number of school hours

due to overcrowding, there is a high incidence of absenteeism, particularly in rural schools. Both in urban and rural settings, girls have a higher absentee rate than boys. This is due to girls' roles as surrogate mothers, taking care of younger siblings and performing many household chores. In parents' judgment, girls attending school have a high opportunity cost in the immediate term, and boys' education is viewed as having a better payoff in the long term. Poor school facilities and health issues, as described below, exacerbate the high rate of absenteeism.

Medium of Instruction

The language of instruction in Zambia's school system is English. Yet, the native language of students is one of seven official language groups, a total of as many as 73 languages. While the cognitive development benefits of teaching in the student's mother tongue are well known to Zambian educators, the Ministry of Education is not considering changing the medium of instruction. Enormous expense makes the change prohibitive. The major expenses would be in teacher training, materials, and testing instruments. School curriculum includes native language instruction, as subject matter, and not as medium of instruction. Native language proficiency is one of seven tests that make up the grade 7 school-leaving certificate but is not considered for the purpose of advancing to grade 8.

Adequacy and Availability of Materials

There is a severe scarcity of educational materials in Zambian schools. As reported in the *Staff Appraisal Report for the Education Rehabilitation Project* (1992), the pupil to textbook ratio for a sample of schools in Lusaka, Kitwe, and Ndola in January 1992 was 8 to 1 in mathematics, 5 to 1 in English, 20 to 1 in social studies, and 50 to 1 in Zambian languages. Since education's share of the national budget has not increased, and since population pressures continue, current ratios have not improved significantly.

The Zambia Education Rehabilitation Project, a five-year, US\$32 million project, has set as a

goal a 2 to 1 pupil to textbook ratio for English, math, and science books, and a 3 to 1 ratio in other core subjects. While the goal is still elusive, the government claims a 5 to 1 ratio now. Other materials such as student workbooks, teacher guides (which have a high impact on student performance), rulers, scissors, art materials, etc. are practically nonexistent.

Appropriateness of Materials

One could say that the appropriateness of educational materials is irrelevant if pupils do not even have them. In practical terms, such is the case for Zambian students. Wear-and-tear of books is a problem because each is shared among 5 to 50 students. Taking books home for homework purposes is just not feasible, even if teachers were willing to risk the possibility of books getting lost.

No reference in any of the documents the assessment team reviewed was made regarding the appropriateness of materials. The closest indicator was a match between the grade level and the text. However, no information could be found to determine whether different levels of the same-grade text existed or if teachers catered to individual learning differences.

Student Health Status

Many children of school age suffer from malnutrition and parasitic infections at levels that both impede their ability to develop cognitively and contribute to high levels of school absenteeism and underenrollment. Infections of intestinal parasites are estimated at 60 percent. Infection of schistosomiasis (bilharzia) is estimated to vary from 30 percent to 80 percent. Anemia rates among children stand at 50 percent, in part because of heavy parasite loads. The link between health and cognitive development is well documented. In particular, micronutritional and deworming interventions have shown significant results because of increased attendance rates and improved cognitive development.

Physical Facilities

In Zambia, many schools can be considered haz-

ardous to children's health. Not only are classrooms overcrowded, but sanitation facilities are lacking in many schools. Many schools are reported to have no toilet facilities. In others that do, they may be blocked, overused, or lack water. Every year, particularly in peri-urban areas, some schools are closed due to cholera quarantines. These dilapidated school conditions have been linked to other environment-related illnesses such as dysentery, resistant strains of malaria, and scabies. Again, all these variables add to the absenteeism problem. In addition, dirty facilities, dirt floors, broken windows, lack of furniture, and poor lighting are disincentives to attendance, student achievement, and community participation.

Teacher Attitudes

Teachers are described as demoralized because of low salaries; poor working conditions, where lack of materials and dilapidated facilities are the norm; and time spent teaching two sessions during a single work day. Many are said to augment their salaries by tutoring in their spare time, cooking items that are sold to children and staff at their school, or a number of other enterprising activities. A qualified teacher's beginning salary is presently ZK70,000 a month (US\$54.47); the salary of a teacher at the high end of the pay scale is ZK120,000 a month (\$93.39).

Yet, the cost of living in Zambia is not cheap. Rent in the Lusaka area is ZK150,000 (\$116.73) for a very modest home. Teachers with school-age children find many hidden costs in what is billed as free education. These costs include uniforms, shoes, materials, and textbooks.

Access

Describing access in an educational system is usually a straightforward task in which total enrollment is contrasted with the school-age population; attention is paid to the possibility of gender inequalities. An assessment of access in Zambia, however, is a more difficult matter because of the poor quality of education in the primary years, and because of the significance of school-leaver's exams at the end of grade 7. In

other words, attending school (access) is not necessarily the same as getting an education.

The official GRZ education policy emphasizes nine years of free basic education for all children. Yet, there are 657,000 (21 percent) school-age children for whom this basic right is not provided. The inhibiting factors to providing basic education for all are shortages of facilities, poverty, and cultural values. The role examinations play and their significance to the issue of access are discussed below.

Shortages of Facilities

The high pupil-teacher ratios and the need for triple session schools mentioned above is indicative of the school shortage. Because of the acknowledged poor quality of education in which students with a school-leaver's certificate are still poor readers, there is a popular move to add two grade levels to primary schools, which currently cover grades 1 through 7, thereby covering grades 1 through 9. However, in these schools primary grade classrooms are often used to accommodate the higher grades, causing even more overcrowding and further reducing the intake of primary grade students.

Programs are being carried out to address the shortage of facilities. One is the Classroom Construction and Rehabilitation Program, which hopes to add 261 new schools to the existing pool of 3,877. However, Zambia's high population growth of 3.2 percent will continue to outpace the government's ability to provide educational opportunities to its citizens. In addition, Zambia's infant mortality is such that presently one child in five does not reach his or her fifth birthday. If efforts under way to reduce infant mortality are successful, added pressure will be placed on the school system.

Poverty-Related Factors

World Bank figures indicate that 67 percent of all Zambian households live in poverty, and 58 percent are classified as extremely poor. Among rural populations, as many as 75 percent of households are in extreme poverty, compared to

36 percent for urban households. Life-expectancy-at-birth figures indicate a deterioration from 50.1 years in 1980 to 45.5 in 1992. There is also a large population of street children, estimated to number 75,000. Because of the AIDS epidemic, this figure is expected to increase dramatically as more children become orphans. The prediction is that the number of orphaned children will rise to 600,000 by the year 2000.

Of consequence to the issue of educational access is the fact that many parents are unable to pay the increasing ancillary costs of "free" education. These include uniforms, books, examination fees, a school fund (assigned by government), and PTA-assigned fees that can range from ZK5,000 to 50,000. For the rural poor who engage in a cash economy to a lesser extent than their urban counterparts, paying these fees and costs is burdensome. Particularly in rural areas, parents and students often work in lieu of making monetary payments. Work may be in the form of collecting wood, making bricks for school construction, or working on teachers' farms. For students, these activities further detract from their already reduced academic hours. Additionally, parents who are disenchanted with the quality of education are less inclined to incur further sacrifices. Therefore, parents often opt to keep their children out of school.

Cultural Values

As mentioned above, parents assign an opportunity cost to girls attending school because of the many chores they perform at home. Also, parents are familiar with the high incidence of teen pregnancy and fear for their daughters. Under local norms, girls who become pregnant not only reduce their opportunity to marry but risk the bride-price paid to their parents upon marrying. Lastly, parents assign a higher premium on educating boys. All these reasons help to explain the fact that girls are under-represented at all levels of Zambia's educational system.

Examinations

Examination results dictate the fate of all Zambian children lucky enough to have completed

grade 7. At the tender age of 13, this academic exercise will sort the 33 percent who will continue on to grade 8 from the two-thirds for whom schooling comes to an abrupt end. In 1996 the number of children who failed to find placement in the next higher grade was 117,283.

The passing score for the exam is fixed to the number of available places in grade 8. Yet, great psychological damage is done to students who are perceived by parents, society, and themselves as failures. Overcrowded classrooms and compressed academic schedules have forced teachers to focus on subject matter contained in the exams to the exclusion of more relevant literacy, numeracy, and life-skills curricula. Students are therefore ill-equipped to fend off their perceived failure and join thousands of others as Zambia's unemployed. During the period from 1988 to 1996, 1,610,440 students took the school leaver's exam. Of this number, only 504,275 progressed to grade 8. The educational system failed to provide for the needs of 1,106,165 14-year-olds. Yet, this selection process is repeated at the ninth, twelfth, and university levels. In 1996, 27,000 students took the university entrance exams. Of this number, 12,000 received qualifying marks, yet only 850 were admitted. Zambia's educational system could be graphically depicted as a pyramid—a broad base represents early entrants who have a steep climb that culminates in a very sharp point where only 800 university graduates a year successfully complete the journey.

The incongruence of an education system that prizes a narrow interpretation of scholastic aptitude at the expense of fostering a more general, national, human-resource development objective is well known. Literature reviews reveal thorough analyses of the problem and passionate pleas for departure from this seemingly elitist path.

- Robert Serpell's, *The Significance of Schooling*, 1993, says, "The tapering profile of the number of students enrolled at various levels represents with dispassionate quantification the morally outrageous defini-

tion as 'failures' imposed on the majority of [Zambia's] primary school leavers" (p. 11).

- *Education in a Rural Society*, 1981, published by the Center for the Study of Education in Developing Countries, reads, "The form I selection had gained an unprecedented importance, deciding once and for all for whom the high expectations of a share in the nation's new wealth were going to be realized, and for whom it seemed that all chances of attaining this new life would be shattered forever."

Equity

Educational equity measures the extent to which subsections of a population are favored or neglected in relation to each other. The most common population subsections studied are girls, racial or ethnic minorities, the handicapped, and the linguistically different. This report focuses on girls' education.

It is generally accepted that investment in girls' education yields the highest rate of return of any other developmental investment made. The World Bank Staff Appraisal Report (Zambia, 1992) stated that, with added education, girls more so than boys increase their ability to seek or employ medical interventions, improve sanitation practices, choose to have smaller families, use a greater percentage of wages on food, and provide greater multiplier effects.

In spite of these known facts, girls are underrepresented on every rung of the education ladder. Girls enroll in almost the same numbers as boys in grade 1, but their enrollment begins to lag by grade 4. The percentage of grade 7 girls admitted to grade 8 is 26.9, compared to 32.9 percent of boys. After the grade 9 hurdle, 51.1 percent of boys successfully advance to grade 10, compared to 32.1 percent of girls. At university level, there are four male students for every female.

As mentioned above, cultural factors, as well as lack of school sanitary facilities, play a big role

in reducing the number of female enrollments. Language and illustrations in texts and exams show a gender bias. Not surprisingly, girls score lower than boys on exams. Girls also have a higher absentee ratio than boys. They have more obligations at home, and parents are reluctant to send their daughters to school while they are menstruating because of poor sanitation conditions and lack of privacy. To its credit, the Ministry of Education uses a lower cutoff score for girls in order to increase their enrollment in secondary schools. Still more has to be done to close the gap in girls' school enrollment at all levels.

Efficiency

Efficiency measures the progression rate (promotion rates) of student cohorts from one grade to the next. Indicators of inefficiency are repetition rates and drop-out rates. In Zambia, measures of efficiency must be qualified since the national policy is to allow children to proceed from one grade to the next, until grade 7, when a composite examination determines who will attend secondary school. The unimpeded grade progression, in theory, ought to be 100 percent. Real progression rates, however, are less than 100 percent due to dropouts and voluntary grade repetitions. Dropouts in grades 1 through 6 are usually due to social or cultural factors, as opposed to academic achievement factors.

The promotion rate from grade 7 to 8, as explained above, is not a true measure of an institution's efficiency, in the traditional interpretation. Since the number of places available in secondary schools dictate the number of students to be promoted, the progression rate must again be qualified.

The rationale for Zambia's policy of universal promotion is that it reduces waste in the system. In other words, if one pupil is retained, then a new pupil might not have the opportunity to occupy that place. Therefore, by eliminating repetitions, the government attempts to increase efficiency in the system.

The fallacy in this rationale is that quality of edu-

cation must be factored in to obtain a truer picture of what goes on in the education system. When teachers do not use criterion-referenced tests, which measure how well students are mastering the academic content actually being taught, there is no real way of knowing what is being learned. The examinations used at the end of grade 7 are norm-referenced tests, which measure what should have been taught according to national syllabi. Deviations from what should have been taught are due to classroom overcrowding; double and triple teaching sessions; use of unqualified teachers; absenteeism; and, mainly, lack of materials. Therefore, norm-referenced tests in Zambia may not accurately reflect what goes on in the classroom.

Using measures of efficiency to assess Zambia's educational system provides an incomplete picture. Relevance, quality, access, and equity must be carefully examined as well.

Relevance

An assessment of relevance must go beyond an appraisal of compliance with national policies. Relevance, independent of quality, asks how well students are being prepared to participate in and contribute to their cultural, political, and economic environments. When judged by this criterion, Zambia's educational system does not fare well.

Scholastic aptitude, as measured by performance on written tests conducted in English, is given the highest status in Zambia's educational system. Because of the competitive nature of the examinations system and lack of advancement prospects, the school curriculum does not allow for much variance from academic subjects represented in the exams. The question must then be asked, how well are the 89 percent of Zambia's youth who find themselves outside the formal education system by the time they are 16 years old prepared to face the harsh reality of present economic conditions and shrinking employment opportunities?

The answer is, they are not at all prepared. The subjects that matter most outside of school—

life skills, environmental health, awareness of sexually transmitted diseases, literacy, numeracy, entrepreneurial attitude, and critical thinking (e.g., skills, knowledge, and attitudes)—are all lacking. For example, even if a student is a fair reader in school, the literacy skills needed outside are different. The reading material is unfamiliar in format, print size, and content. The lexicon is also different, since school vocabulary is built incrementally and methodically. A teacher is no longer available to assist when difficulties in comprehension arise. Therefore, a fair reader in school could easily be a functional illiterate outside the school domain. The future of Zambia's youth is sadly precarious.

Management, Planning, and Policy Issues

The effective delivery of public educational services depends to a large extent on the suitability of the management structures operating in the sector, the efficiency of procedures used, and the competence of managerial staff. The MOE has experienced some weaknesses in its management, planning, and policymaking capacity, which undermine its effectiveness as a pacesetter and coordinator of change and revitalization, but it has made strides in recent years to address its problems. The main remaining problems are: 1) the great financial constraints the system works under, which limit the scope of the administrative and logistical structures to cope with a fast-growing sector; 2) the need for GRZ delivery mechanisms to move toward greater decentralization and democratization; 3) the increasing complexity and diversity of education providers; 4) a relatively weak capacity for planning, policy analysis, and priority setting; and 5) an inadequate supply of school-based managers with the requisite skills and training.

It appears that the organizational structure and the planning and policymaking capacity of the MOE in the past has been inadequate to address the key educational issues outlined. The MOE's current efforts to enhance planning and policymaking and the decentralization program

should address these shortcomings.

Policy Planning and Analysis

Comprehensive information about an education system is at the heart of good management and is also vital in establishing the context for the evaluation of alternative policies and strategies. The MOE appears to have a reasonable set of data, but its reliability is questionable and the data are not analyzed or used as effectively as they might be. Senior officers do not have access to data and analysis for setting policies and priorities. Donors often have better analytic insights than the MOE itself. The World Bank-financed ZERP has made strides toward improving policy planning and analysis, but it appears that additional assistance will be required to strengthen the MOE policy, planning, and analysis unit.

Administrative Reform and Decentralization

In 1995 as part of the GRZ's overall Public Service Reform Program, the MOE initiated, with SIDA assistance, an administrative reform program that seeks to devolve more responsibility to the district and school level and to set up structures that will effectively decentralize decision-making and administration. The decentralization policy focuses on the establishment of Education Management Boards (EMBs) at the district level for primary schools and at the institution level for secondary schools and teacher training colleges. The EMBs will be empowered to, among other things, recruit teachers and staff; manage school discipline; procure educational materials; control educational quality; contribute to curriculum; own property; raise, borrow, and manage local funds; and authorize contracts for local services.

The decentralization policy has been piloted for two years in the Copperbelt region with encouraging results. The EMBs are operational in eight primary school districts, 36 secondary schools, and all of the 14 teacher training colleges. Studies conducted by ZERP indicate goodwill and enthusiasm from all participating stakeholders. The decentralization design calls for a phased

implementation of the policy, with the new system to be fully operational by 1999.

The proposed decentralization reform is impressive, but given its scope and complexity and the shortage of resources, it will be difficult to implement without outside assistance. Interviews and site visits to MOE headquarters, district offices, and local schools suggest that the administrators on both sides of the decentralization equation are ill-equipped to realize the transfer of authority without a heavy dose of intervention. At a minimum this involves training and reorientation in planning and management (administrative and financial) for the school supervisors and inspectors, key education officers, EMB members, and school heads and head teachers.

The current crisis of resources, the steady decentralization of the education system, and the liberalization of the economy, make this an opportune time to reinforce greater community participation and local authority in the management of schools. As in the United States and other countries, community participation in the school system is the cornerstone and a building block for democracy.

Private-Sector Role in Basic Education

Since the liberalization of educational policy in the early 1990s, the GRZ has encouraged private schools and private-sector involvement in education. Although not exactly a thriving industry, private schools have grown to about 75 primary and 30 secondary institutions with a total enrollment of 50,000 students. All of the schools are for-profit and charge fees that range from ZK50,000 to 600,000 per term, which can only be paid by the relatively well-off. These institutions provide quality education by Zambian standards; examination pass rates rank in the high 90's. When asked about their needs, officials at the private schools claimed they could solve most of their problems but mentioned restricted access to low-cost capital as their biggest constraint. They felt they should be able to apply for access to GRZ development funds, receive tax-free status, and/or be able to borrow funds

from the commercial banks at concessionary rates. Private schools believe that, given access to low-cost capital, they could play an important role in the revitalization of Zambian education.

Some multinational corporations like Dunlop, BP, and TATA have established primary schools for their workers on the Copperbelt. Examples of such schools are Lechwe in Kitwe and Simba in Ndola. These schools compare favorably with good schools anywhere in the world. Some private-sector firms contribute services, sponsor schools, and make minor contributions to literacy programs and/or small contributions to community schools. There is also some budding corporate involvement in public-sector education. Mining companies ran some of the most successful schools at one time in Zambia, but with the privatization of most of these firms, the schools have been turned over to the GRZ.

NGO Role in Basic Education

Religious NGOs in Zambia have concentrated most of their resources in preschools or secondary schools. Not many NGOs are engaged in activities relevant to basic education/primary schools. Most NGO activity in basic education is being conducted by one of the following:

- Zambia Open Community Schools, the largest organization promoting community schools for basic education;
- The Red Cross, which maintains community schools for AIDS orphans and street children;
- CARE, which operates community schools;
- Children in Need (sponsored by UNICEF), which promotes life skills instruction for out-of-school youth;
- Forum for African Women Educators in Zambia, which provides advocacy and support for women's and girls' education and produces materials to inform the community about the educational needs of girls; and
- Association of Women for Research and Education, which provides support for female teachers in primary as well as secondary schools.

Other NGOs in Zambia involved in aspects of basic education, but in less substantial capacities, include the Makeni Islamic Society and Makeni Ecumenical Centre, Salvation Army, Fountain of Hope, Reach Out Foundation, and World Vision. Most of the work of NGOs at the basic education level is confined to urban areas.

Government Strategy for Education

Inspired by the 1990 World Conference on Education for All (EFA), the GRZ set up an EFA Task Force. In 1991 the task force organized a National Conference on Education for All, which explored the development of education in Zambia from a long-term perspective. EFA goals and strategies were adopted for implementation. The task force's report, "Focus on Learning," was reviewed and adopted as the education policy document for the new government elected in 1991. According to the policy document, the following were listed as strategic goals for the next decade:

- Provision of seven years of primary education for every child, and enhancing the quality of that provision;
- Improving the quality of currently available secondary education;
- Encouraging and supporting private-sector and communities' participation in school development, especially at the secondary level;
- Focusing the public programs of continuing education on fostering competence in general education; and
- Improving the efficiency and effectiveness of the allocation and use of the limited resources available.

The central thrust of the new policy was the need to restructure the financing of public education in favor of increased spending on primary education, especially on materials and other quality improvements.

Some shift of public resources toward primary education was made in the subsequent two years, but the fundamental structure of the allocation of resources did not change significantly. More-

over, major policy concerns for improvements in access, relevance, equity, and quality in education persisted.

In 1995 the MOE commissioned a comprehensive review of national education policies and strategies. The outcome was a new national education policy, "Educating Our Future," which the government ratified in 1996. Within this policy framework the government has identified three major priorities:

- Providing universal basic education (now up to grade 9) within the shortest realistic time-frame;
- Giving urgent attention to the needs of children who have dropped out of the formal system, been pushed out by economic circumstances, or have never been to school; and
- Providing skills for formal and self-employment of out-of-school and unemployed youth.

At the same time the government recognized that a fragmented approach to the investment of scarce resources for education had resulted in:

- Inadequate and parochial understanding of the education sector by the four ministries involved in the sector;
- Diffusion of education provision over a number of uncoordinated partners;
- Insufficient cooperation and collaboration among providers of education and training;
- Uncoordinated arrangements that hinder the effective and efficient allocation and use of resources;
- Little sharing of information within and between relevant ministries; and
- Problems of coordinating donor assistance within ministries and across the sector.

Against this background, the government has initiated, with World Bank support, the integrated Education Sector Investment Program. It is a vehicle for increasing collaboration among stakeholders; promoting cost-sharing; maximizing the resources available to the sector; increasing ac-

cess; improving equity; and providing quality and cost-effective education and training through a combination of formal, nonformal, private, and community-based initiatives.

ESIP has further refined the priorities of the government over the next five years, commencing in 1998. These priorities include:

- Building sector management and implementation capacity;
- Improving teacher education and conditions of service;
- Updating curriculum and instructional materials;
- Rehabilitating and constructing school classrooms;
- Improving school health and nutrition;
- Improving community and multigrade schools;
- Improving continuing education for out-of-school children and youth;
- Rehabilitating formal skills-training institutions;
- Expanding and improving nonformal skills-training facilities;
- Providing entrepreneurial training; and
- Refocusing on literacy for adults and youth.

In early 1997, ESIP had just completed the initial review of detailed project descriptions and implementation plans for each of the 11 priority areas. A review of each of the descriptions suggests a mixed picture—some areas are well developed and others need more work. It is expected that these project descriptions will be revised during the next three to five months. The USAID Mission should consider participation in the ESIP design process to influence its direction. The Mission also could review the tradeoffs among the final 11 priority areas once the plan is completed. In this way the Mission could shape the nature of its possible investment in the education sector.

It is apparent that the GRZ is taking fairly serious steps to develop an integrated plan for addressing the crisis in education. To date, the gov-

ernment has developed a sector policy, established investment priorities for the sector, and demonstrated ownership of the process. Moreover, donor consensus has been achieved, and the donors appear committed to cooperating with each other and the GRZ. It would appear, therefore, that this is a propitious time to invest in education in Zambia. An indication that USAID was willing to consider an investment in education would signal to the GRZ that the U.S. government believes it is finally on the right track.

Lessons Learned from Donors

Each of the various donors have had different experiences working in the education sector in Zambia, and each of their officers have different perspectives based on their background, training, and length of service within the country. Opinions about the sector ranged from high enthusiasm to deep pessimism, and involvement in the sector ranged from casual observer to deeply involved managers and practitioners. There appears not to be any discernible pattern linking the outlook of the official to the degree of involvement in the sector, such as, all project managers expressing pessimism. Characterizing the lessons learned from donor experience, then, is not straightforward, and the overall picture is mixed. Nevertheless, some lessons learned may be useful.

Perhaps, the first lesson is that there are very real constraints to progress in the social sectors like education. The prolonged economic decline, the costs and implications of Zambia's debt and its servicing, the stringent economic reform and structural adjustment program, and the limited and overstretched government capacity all work to make progress slow and suggest that expectations for progress must be modest. Moreover, Zambia's situation suggests to donors that any investment should be appropriate, affordable, and sustainable within the context of severe resource constraints.

Second, other donors' experiences have underlined the need to develop policy and help implement it by strengthening government capacities

at all levels (in the case of education, at the central, provincial, district, and school levels), and to strengthen community capacities to take responsibility for managing, demanding, and contributing to their own development.

Third, most donors believe that working with the GRZ on ESIP is essential to any success in the education sector. They are concerned by ESIP's lackluster leadership and fuzzy vision to date, and they would like to see the GRZ initiate some bold decisions. They are, however, willing to give ESIP a chance. Other donors are mindful of the relative failure of the Agriculture Sector Investment Program, but they also point to the success of the Health Sector Investment Program. They believe that, given some nurturing, ESIP will make a difference.

Fourth, donors are unwilling to increase their current investment levels in education until there is a clear-cut indication that the GRZ is committed to increasing its share of education resources, particularly to the primary level. They are pleased with the GRZ's recent marginal improvement in resource allocation, but they have seen the rhetoric without action before and are taking a "wait and see" attitude.

Options for USAID

Overview of Options

The Case for Education as an Investment
Education is the *sine qua non* of economic development; it catalyzes and sustains economic growth and reduces poverty. Investments in education increase individual productivity and aggregate economic growth.

The relationship between education and productivity is especially well established in the agriculture sector, where a raft of studies in Africa and elsewhere have shown a positive relationship between years of education and farm productivity. For example, an increase of one year of education raised farm output 2 percent in Korea and 5 percent in Malaysia. Well-established

relationships between education and health have been made, and between education and fertility. One extra year of education for mothers has been associated with a 9 percent decrease in under-five mortality. Educated mothers are more likely to immunize their children and are more likely to adopt effective health and sanitation practices in their households. Educated mothers also have fewer children than those with less education.

Education is also essential to the exercise of citizenship and to the establishment and maintenance of democratic institutions. Citizens who lack literacy and other basic skills are ill-equipped to advance their own interests in the democratic process. In the urban economy the relationship is more difficult to establish empirically, but the importance of literacy and numeracy to the effective performance of most urban jobs is evident. Educated people are better able to acquire and make use of information and to respond to new private sector opportunities.

Studies conducted in developing countries around the world show that the rate of return to investments in human capital is consistently higher than the rate of return to investments in physical capital. Moreover, the rate of return to investments in primary education is consistently higher than rates of return to investments in secondary and higher education. The evidence linking economic performance and investments in education, especially in primary education, is compelling.

The Case for Education Investment in Zambia

Perhaps the central issue of this assessment is whether USAID/Zambia should invest in the basic education sector and whether that investment will yield results that support the Mission's strategic goals and objectives. There are reasons to be pessimistic. First, Zambia's education system is in crisis, and the problems are almost overwhelming. The interrelationship among problems seems at first glance to preclude any real progress, and one wonders where to start. Second, Zambia has daunting problems in many sectors, limited resources to address the prob-

lems, and the short-run payoff may appear higher in some other sectors. For example, the copper mining industry probably will need substantial investment just to keep production at its current low level. Major investments need to be made in the country's deteriorated infrastructure, such as roads. Third, the large external debt means that even with rescheduling, external assistance, and strong growth in nontraditional exports, Zambia may only be able to achieve modest economic growth, which would constrain availability of government revenues for social-sector investment. Fourth, until recently the GRZ apparently has diverted resources away from the education sector, particularly basic education. If the GRZ has not made basic education a priority, why should external donors direct assistance to the sector? Fifth, any large-scale educational investments that add to the recurrent costs of the sector may actually create a burden that the GRZ could not maintain, thereby exacerbating the current crisis. Additionally, there is a 20-year legacy of decline and low morale, an uncertain management and implementation capacity, and virtually nonexistent NGO participation in the education sector. The reasons for caution in investing in Zambian basic education are clear.

There are, however, ample reasons to be optimistic about the achievement of impressive results from modest investments in education. First, the education sector has sunk to such lows, and the system receives such poor GRZ financing, that the marginal impact of additional resources for key educational inputs would be very high, even without massive investments. In fact, World Bank studies have demonstrated that in parts of the world like Zambia where literacy and school enrollment rates are low, the returns to education investments are particularly high. Second, Zambia appears to be on the verge of an economic turnaround, a turnaround that will be constrained by a poorly developed endowment of human capital. Agricultural or mining productivity will be low if workers cannot read instructions and calculate simple problems. Third, Zambia's government appears to be poised to

put education policies to right, to redress the decline in education finance, and to develop an integrated approach to program implementation through ESIP. Fourth, with the advent of ESIP and the enthusiasm of other donors in Zambia, this is a propitious time to join forces with USAID's partners and work to address one of Zambia's most serious problems. Fifth, it is apparent from the review of education in Zambia that USAID/Zambia can make several low-cost but high-impact interventions that will positively affect its current portfolio and make an enormous impact on basic education in Zambia.

For these reasons, and the well-known, more general economic arguments outlined above, this report suggests that good results can be achieved with a relatively modest investment, provided there is continued policy and financing improvement from the GRZ. Moreover, the timing is right. The GRZ's ESIP program is beginning to move toward an integrated sector-investment approach. USAID has time to observe the process, gauge the GRZ commitment to policy and financing improvement, and develop programs and agreements for the FY 98-99 planning cycle.

Different Management Options

If the Mission should decide to invest in the basic education sector, it could employ several approaches to manage the investment. One method would be to provide unearmarked funds to ESIP in a specific area, such as teacher education. Several donors have provided funds in this manner and are considering this approach for the future. Perhaps the advantage of this approach is that the Mission could off-load the activity implementation and monitoring tasks to one of its donor partners, such as the World Bank. The Mission's investment might have greater impact if it is made in partnership with other donors. The obvious risk of this approach is that the Mission may not be able to ensure accountability, even if funds were not co-mingled. The Mission might also experience difficulty measuring, monitoring, and receiving timely performance indicators.

The second approach might be to negotiate a bilateral agreement within the ESIP framework. The Mission, through negotiation with the GRZ and other donors, would carve out a portion of one or more areas or subareas within the ESIP strategy and then proceed to design and implement that activity directly with the Ministry of Education. The advantages of this approach are that it would reinforce donor and GRZ coordination, encourage the GRZ to elevate the priority of basic education for future financing, and with other donor partner involvement, might generate greater impacts than might otherwise be possible. One possible disadvantage is that USAID's investment could get bogged down in a slow-moving bureaucracy.

The third approach might be to implement a traditional bilateral agreement outside and apart from ESIP. The advantages of this approach are that USAID could maintain its leverage, control, accountability, and separate reporting requirements. A disadvantage is that it might send the wrong signal to the GRZ, i.e., there is no need to coordinate or focus donor activities in priority areas.

Bloopers: Areas Considered Inappropriate for USAID Investment

Before outlining areas the study team considered promising for investment, it may be helpful to briefly review those eight areas the team investigated and rejected or considered inappropriate for possible USAID investment.

School classroom rehabilitation and construction: Many classrooms and school buildings in Zambia are in deplorable condition, and rehabilitation and construction are high on the GRZ's list of priorities. Given the size of USAID/Zambia's operating year budget (approximately \$18 million) and the activities and interest of other donors in the area, the team did not seriously consider this as a possible USAID investment. Expanding access in the Zambian school system is desirable, but that very expansion in a period of crisis may saddle the system with additional recurrent expenditures it can ill-afford to carry. Moreover, schools are often looted.

Rehabilitation of formal skills-training institutions and nonformal skills-training facilities: These two areas appeared to be reasonably well covered by the traditional donors to these fields, the Japanese, Germans, and others, and the field was outside our brief of basic education. In addition, the team did not have the full expertise to adequately assess this area or address what kind of skills training would be most appropriate.

Continuing education for out-of-school children and youth and literacy training for adults and youth: Although the GRZ claims these are priority areas, it provides very little funding and they appear to be nearly moribund. Some NGOs are working in these areas, which also receive some private sector and community support, but there are not enough actors or funding to breathe life into the system.

Improving teacher education: Approximately 10 percent of Zambian teachers are untrained, and the system hires more untrained individuals as teachers and teacher's aids during the course of the school year. Improving teacher education (preservice training) is surely an important input into the system, particularly if the estimates of the incidence of AIDS in the teacher corp are accurate. But, preservice training is expensive relative to in-service training; an investment in teacher training really is a tertiary-level intervention; a large percentage of teachers emigrate to other countries in the region in search of higher pay; and the teacher training institutions are small and underfunded. For these and other reasons, we elected to focus on more cost-effective in-service training.

Examination reform: Examinations are given at the end of grades 7, 9, and 12. Since the system has a dramatically reduced number of places in grade 8 and grade 10, the exam functions as a gatekeeper rather than an assessment of practical, life-survival skills. Every year, children who pass the exam are denied access to further education due to lack of places. Changing the exams away from their strictly academic focus to a more practical orientation may force

the curriculum and teachers to direct needed skills to the large numbers of school-leavers. Despite the promise of examination reform, discussions with the Examinations Council proved fruitless, and the idea was abandoned as not feasible at this time.

Improvement of community/multigrade schools: There are only 38 community and multigrade schools in Zambia, which enroll less than 7,000 students. Because the impact of any investment in this area would be small and would not enhance the institutional capacity of the education system, the team did not consider it a viable option.

Specific Options for USAID Investment

The following six options briefly outline the problem to be addressed, the proposed solution or activity description, the expected benefits for basic education in Zambia, possible USAID/Washington resources available, the USAID/Zambia portfolio linkages, and the risks and limitations of the activity.

Option A: Decentralization and Management Reform

Problem: Administrative powers within the MOE are concentrated at headquarters and provincial offices with crippling effects. Hiring of teachers, procurement of school materials, financial decision-making, student examinations and placement, rehabilitation of school facilities, and discipline of staff members are all managed away from schools. The PTA, the only representation of community involvement, in practice serves only as a fund-raising agency and is not involved in decision-making. The heads of schools find themselves with little real authority or power to effectively run or impact their schools.

MOE has a weak management capacity for organizational change. The organizational structure on which the transfer of authority to local Education Management Boards depends, is only in its initial experimental phase. At this stage, the management skills required to complete the transition to a decentralized system are not fully

developed at either the MOE or the EMB level. To meet its decentralization target, the MOE needs to strengthen its capacity for planning, policy analysis, and priority setting and to improve its overall delivery mechanism. The EMBs lack the wherewithal and skills to fully function in their new empowered capacity to recruit teachers, manage school discipline, control local funds, control educational quality, and meet all the other responsibilities. Along with the specific skill requirements enumerated here, the long-term success of the decentralization policy also hinges on the stakeholders' ability to infuse broad efficiency-enabling behavioral and management attitudes such as: treating subordinates with respect, opening the channels of communication by seeking input and giving constructive feedback, honoring deadlines, rewarding efficiency and quality of work, providing a productive work environment, managing conflict, objectively setting goals, and giving fair performance evaluations.

The training work ZERP started will serve as an important precursor to the broad-based implementation task that lies ahead. As one of its five components, ZERP conducted a three-month long in-service management training for some 4,000 heads and inspectors at provincial colleges and the universities. ZERP has been instrumental in increasing the management information system capabilities within the education sector, however, it is terminating at the end of 1997. Nevertheless, much needs to be done to enable the MOE in the next and critical phase of policy planning and analysis.

Activity Description: The aim here is to encourage and support the restructuring and decentralization reforms already in motion within the MOE and to encourage school-based management. The scope of activities will contain two major components:

- **Policy Planning and Analysis**—The purpose of this intervention will be to bolster the capability of the planning unit within the MOE to analyze and use data to formulate

alternative policies and strategies.

- **Management Skills Training**—The purpose of this intervention will be to provide in-service training courses for central office staff, provincial and district officers, newly appointed EMB members, school heads, and teachers. The courses will be oriented toward increasing the skills of the trainees in relevant areas including financial management, personnel management, fund-raising, school discipline, and community development.

Activity Benefits: A smooth transition to a decentralized school management system is at the heart of this activity. Decentralization will improve the quality of education and efficiency of the system, enhance the recruitment of good teachers and the provision of school materials, and encourage timely resolution of issues. Long-term benefits of this intervention may include improved access to education and a more relevant curricula. USAID involvement at this juncture is considered timely.

Risks and Limitations: The most salient risks and limitations of this option would be:

- There is a relatively medium-term payoff;
- GRZ bureaucracy may slow down the process;
- High interest by other donors may potentially crowd the field; and
- The program may be costly, although containment is possible by limiting involvement to one or several provinces.

Option B: Youth Development through Multiple Strategies

Problem: This report has documented vast needs in Zambia's education system. Given Zambia's current education structure, few cost-effective and cost-efficient options are available for meaningful, sustainable assistance. One intervention option is to supplement rather than to supplant government resources.

In the area of teacher training, one possible in-

tervention is to provide assistance to teacher education colleges (preservice), enabling these institutions to increase their annual output of 1,800 graduates. However, even sizable amounts of assistance would not solve the teacher shortage because of attrition factors (e.g., teachers leaving the education field due to poor working conditions; the HIV-positive status of up to 42 percent of teachers). Providing training to untrained classroom teachers (in-service) could help elevate them to trained, certified status. But these teachers are already in the classrooms, and such an intervention would address quality issues only and not access or relevance. National needs are so great that this effort, too, would fail to render great dividends.

Activity Description: The suggested teacher training activity would be in-service, rather than preservice. The target population is classroom teachers in primary education grades 1 through 7. The teacher in-service curriculum would focus on materials development, life skills, environmental health, and entrepreneurial skills. The objective of this intervention is to equip teachers with skills, knowledge, and attitudes necessary to address the needs of the majority of Zambia's students who drop out of the system. As was reported above, Zambia's education system caters to a small minority who demonstrate scholastic aptitude, at the expense of a more general, national human-resource development objective.

The intervention suggested would be at the in-service level because 1) the training could be applied more quickly and broadly; 2) the preservice approach would have a maximum audience of 1,800 teacher trainees a year; and 3) changing the teacher training syllabus is much more difficult. The curricular areas mentioned above were selected to fill the deficit left by present curricula and are survival themes for a population abandoned at an early age by the formal education system. The strategy would employ the system of community resource centers built by the Overseas Development Agency.

To address the severe shortage of learning materials, this activity will encourage teachers to produce their own materials. Existing resource centers will be used for teacher workshops. Centers will house material prototypes, teacher guides and other reference materials, and basic materials construction equipment.

Acknowledging that most students will be pushed out of the education system before they are 16 years old—21 percent do not attend school, 66 percent of seventh graders do not advance to grade 8, 68 percent of ninth graders do not reach grade 10—the curriculum should include a heavy emphasis on life skills. Literacy and numeracy, awareness of job choices and their respective skills requirements, environmental health, and awareness of sexually transmitted diseases are all subjects that should be covered in depth.

Teachers will be trained to teach entrepreneurial skills and encourage attitudinal changes. To accomplish this, teachers will adopt a model such as the U.S. Junior Achievement Program. Particular emphasis will be placed on initiative, self-reliance, work ethic, business practices, money management, literacy, and numeracy.

Activity Benefits: Rather than ask what benefits this activity will have, ask what the cost of not implementing a youth-development initiative would be. The answer is quite evident already. Unemployment and underemployment statistics can turn to crime statistics when individuals are desperate enough. In 1996, 157,478 seventh and ninth graders were added to the already large number of out-of-school children. The country can sustain only so many unemployed, just like Lusaka can sustain only so many hawkers. The benefit of a Junior Achievement-like program is that participants are given real skills, knowledge, and a “dare-ye” attitude with which to confront the hardships they will encounter. The private sector is recruited as a partner in such programs and eventually sustains the program.

Risks and Limitations: One risk of introducing a Junior Achievement-like program is that teach-

ers are already overburdened with curricular “musts” because of the shortened school day. Although teachers may agree that something should be done for school-leavers, their performance is measured by how many students pass the grade 7 or 9 exams. The pressure to continue teaching as before will be difficult to overcome.

Fortunately, centrally funded programs already exist that address the needs cited here. USAID’s Private Sector Development office supports an Entrepreneurial International program. This program also promotes Junior Achievement and works closely with the international division of Junior Achievement in Colorado. USAID/Washington’s Advancing Basic Education and Literacy (ABEL) program is ready to assist in areas of teacher in-service, literacy, girls’ education, monitoring, and evaluation. Also, the Improving Educational Quality (IEQ) program could be recruited to assist in program design, training, and evaluation.

Option C: Girls’ Basic Education Activity

Problem: Girls and women in Zambia are disadvantaged, particularly in the area of educational access. Of every 100 girls who enter grade 1, only seven sit the grade 12 examination. Almost half the girls of school-going age are not in school, a problem of larger dimension in rural areas. Enrollment rates for girls have been declining at a faster rate than for boys. Although primary completion rates for both girls and boys have been declining, the decline is worse for girls. The female illiteracy rate of 42.7 percent is almost double that of males. In all school examinations, girls underperform in relation to boys; girls’ performance is particularly poor in science and mathematics.

The causes of these low levels of participation, high attrition, and performance are found within the school (fees, facilities, learning materials, poor teacher opinion of girls); within the household (inability to meet financial costs, lower value placed on educating a girl, low educational levels, role expectations for girls); and with girls

themselves (sense of personal inadequacy, negative self-image reinforced in school, life expectations).

Activity Description: The purpose of this activity is to reduce gender disparities in primary education enrollment, retention, completion, and achievement. Building on UNICEF’s pilot program in two provinces, Program for the Advancement of Girls’ Education, and perhaps in collaboration with UNICEF, the activity would:

- Develop leadership and public advocacy (social-marketing) programs;
- Conduct national girls’ education campaigns and disseminate materials;
- Strengthen school district and provincial capacities, plans, and strategies for girls’ education;
- Orient school management and teachers toward creating supportive learning environments for girls;
- Upgrade teachers’ pedagogical skills in math and science and in the motivation of girls;
- Provide relevant and appropriate teaching materials;
- Strengthen life skills to meet the needs of girls; and
- Develop community campaigns and seek parental support for girls’ education.

Activity Benefits: The principal beneficiaries would be girls and women, who would complete basic education and achieve higher education (and income) levels. The secondary beneficiaries would be society at large, which would experience increased economic growth, improved health, higher agricultural productivity, and greater democratic participation—all USAID/Zambia strategic objectives. Girls’ and women’s education are USAID/Washington and White House initiatives. USAID/Washington has several centrally funded projects that could assist in the development of this activity, including the previously mentioned ABEL and IEQ programs, and the new Girls’ and Women’s Project, which is looking for mission partners. This option could build on Malawi’s successful USAID girls’ edu-

cation activity (see Appendix H). Returns to girls’ education investments have such a well-established and enormous impact on health, family planning, and child survival that the investment would be justified even if there were no direct pecuniary or other sector benefits.

Risks and Limitations: The UNICEF pilot project may not prove successful, may not yield sufficient data to measure impact, and/or the activity may not be brought to scale. The Mission, however, could review UNICEF’s June 1997 evaluation before proceeding to design.

Option D: Improving Learning and Health in Schools

Problem: Child survival programs in the health sector have been very successful in decreasing mortality rates of children under five years old. The success of child survival activities now raises the question: how to maintain the improved health status and learning capacity of children as they survive early childhood and enter primary school? The developmental needs of children ages 6 to 15 are not adequately addressed in community-wide health interventions where resources are stretched to meet the demands of adults and infants. Children of school age in Zambia suffer malnutrition and parasitic infections at levels that impede their ability to develop cognitively and contribute to high levels of absenteeism and underenrollment at school. Infections of intestinal parasites in school-age children, including hookworm, roundworm, and whipworm are estimated at 60 percent by parasitologists working in Zambia and abroad. Infection rates of these parasites, like malnutrition rates, are positively correlated with poverty. These health conditions negatively affect the learning achievement of pupils from the most disadvantaged families. They present serious impediments to improved access and equity in education, as well as improved quality.

Activity Description: The health and nutrition status of school-age children has been neglected in part because the impact of chronic parasitic infection on child cognition has only recently been

documented, and in part because of the enormity of need. Recent health activities in a number of developing countries, however, have shown that school-based interventions are cost-effective. These successful school interventions combine distribution of medicines to pupils through existing District Education Offices and teacher-supervision networks with health education and community sensitization. Albendazole is a medicine that eliminates most common worms in a single dose. Studies show that mass administration of Albendazole in schools twice a year, without any diagnostic activity, is safe, efficient, and cost-effective. Elimination of worms in schoolchildren reduces the most common cause of the spread of parasitic worms, thus improving health conditions for the community. Student health is improved, educational inputs are maximized, and household and government expenditures on health are reduced.

The activity suggested is that USAID/Zambia “buy-in” to the ESIP program, funding the health and nutrition component. USAID could sponsor a redesign of the health and nutrition component as it was submitted at the ESIP workshop in February 1997.

The document submitted was criticized for its emphasis on large procurables and unnecessary costly research. It did not address the low cost of deworming and micronutrients or health education. The Zambian MOE team could have improved the plan of action through a study trip to Tanzania, where the Partnership for Child Development (PCD) coordinates a very successful school-based deworming and health education pilot program. As part of this activity, USAID/Zambia should consider contracting PCD (or another group) to work with the ESIP team. Assistance might be available through the Support for Analysis and Research for Africa project (part of USAID’s AFR/SD/HHR) for the costs of PCD design assistance or a study trip. Zambia’s ESIP school health component should follow the PCD/Tanzania model and first conduct a situation analysis and pilot activity (see

Appendix G) before taking the activity to scale.

In this program, communities would assume recurrent costs of medicines on a district or provincial scale to encourage decentralization efforts in Zambia’s health sector. Tanzania’s pilot activity, including preliminary planning and research, worked on a budget of US\$960,000 from 1992 to 1998. Trials were run on 110,000 pupils. Albendazole is only 20 cents per dose, or 40 cents per pupil per annum. If the program design includes micronutrients, they also are inexpensive. Praziquantel for schistosomiasis is the most expensive medicine considered in the PCD/Tanzania model, at 30 to 50 cents per dose.

Benefits and Limitations: Benefits include:

- A demonstration of support for sector development through ESIP;
- USAID would be seen as an innovator along with UNICEF, the World Health Organization, and the World Bank in a new area of education and health interventions;
- There is substantial support for school health activities in USAID/AFR/SD/HHR/Education;
- Technical and financial collaboration among USAID/Washington, UNICEF, WHO, and the World Bank might be possible;
- Strategic objectives in education as well as in health are accomplished;
- Funding may be drawn from the health sector to support this activity, making it possible to embark on an educational activity with combined sectoral funding, or without opening a new portfolio in the Mission; and
- The activity makes use of and improves existing Zambian education resources to accomplish a health intervention that would be too costly for the health sector to take on by itself.

The primary limitation of this activity is that it is tied to the political and bureaucratic complexities of ESIP.

Option E: Establishment of an Education Development Fund

Problem: One of the most pressing needs of the Zambian education system is to improve the quality and relevancy of classroom instruction. Many schools need to reconstruct walls and floors, repair roofs, and replace windows. Many need to procure desks, chairs, and other furniture for pupils and teachers. Most need to renovate or expand toilet facilities, and many need safe drinking water. In some communities the demands of the failing infrastructure are met through cost-sharing community development grants of the Micro Projects Unit (MPU), which is comprised of two separate programs—the European Union-funded Micro Projects Program and the World Bank-funded Social Recovery Project. Existing grant mechanisms, however, cannot adequately address the dual problems of the quality of infrastructure and the quality of instruction and learning in the classroom. A special education development fund is needed to give communities the opportunity to improve the quality of instruction as well as the quality of their school buildings.

Activity Description: This option involves establishing a microprojects fund for education that would grant funds to communities to improve the quality and relevancy of learning. It would provide communities with an opportunity to participate in the development of human resources in their schools. Some examples include contracting for in-service teacher training, new instructional materials, PTA and school management training, and head teacher training. USAID could create an Education Development Fund under the existing umbrella of the MPU. The fund would use the administrative capacity of the MPU. Existing staff would be used to make the new fund operational, and they would train more staff as needed.

The MPU is located within the National Commission for Development Planning and uses an African model for social grants administration. The Education Development Fund could build

directly on the MPU's experience. Guidelines for community applications are well established, as are the criteria for program evaluation. The Ministry of Finance (MOF) has produced good forms that are accompanied by clear instruction booklets. An application must be produced by representatives of the community (such as the PTA), and the community must demonstrate its ability to contribute 25 percent of the cost of the activity. A desk appraisal makes sure that the appropriate district-level officers from the line ministry are involved, and a field appraisal looks at the physical feasibility of the activity. Once appraisals are completed, the application is recommended to the GRZ Steering Committee comprised of the permanent secretaries of the MOF, directors of planning from all relevant ministries, and EU and World Bank representatives. The steering committee meets quarterly to make final decisions about the grants. Grants have been awarded to communities in amounts as high as ZK60,000,000 for a variety of projects, many of which have been used for school renovation. Once a grant is approved, the money is delivered in installments, each contingent on the community accounting for money already disbursed. The project is completed when the line department or ministry certifies service delivery. If USAID/Zambia opted to establish an Education Development Fund, it would allow communities to take an active role in the management and finance of instructional reform based on an existing model of cost-sharing grants for school renovation. It would also allow communities the opportunity to put something other than bricks and sand into their children's future.

Benefits and Limitations: This option would give additional impetus to decentralization of the education system in Zambia. It would showcase and capitalize on a successful management scheme within the Zambian government and continue to build local capacity. It would also require relatively few additional management man-hours from USAID/Zambia, while at the same time allowing USAID to undertake a badly needed activity in the basic education sector. This

option interacts well with other USAID/Zambia activities, namely democracy and governance, promotion of private enterprise, and gender equity. It would also build on the infrastructure activities of other donors. In addition, this option could build on the experience of USAID/AFR/SD/HHR/Education, which has produced many resources on improving educational quality. The primary limitation is that it is tied to the MPU bureaucracy.

Meta Option: Learning Information Technology Assistance

USAID's AFR/SD/HHR/Education in Washington has bought into the Global Bureau's Center for Human Capacity Development Global Communication and Learning (LearnLink) Project. Project staff is available to help USAID missions in Africa apply information technologies to basic education activities. This includes helping missions design technology packages to carry out education activities. It may also include distance education and applications such as radio education. The assistance is not limited to activities in a discrete education portfolio but may also be applied to cross-sectoral activities, such as an environmental education program run through primary schools. This technology assistance is calculated as an input from AFR/SD/HHR/Education without financial cost to the mission.

LearnLink can provide a wide range of assistance, from giving advice on telephone capacity to improve fax and Internet capability, to providing software and training for computer and Internet users. While resources may not be abundant for the purchase of hardware, LearnLink is positioned to help clients find appropriate hardware. Some of LearnLink's greatest strengths lie in helping clients assess their hardware and software needs and design technology packages for offices and institutions involved in basic education.

During our visits to the Ministry of Education and provincial and district education offices, as well as to teacher training facilities, we identi-

fied sites where computers are in place but underutilized. While the role of the Leland Initiative in Zambia has been small because Zambia's Internet capacity operates efficiently, local technology experts suggested that USAID could play a fruitful role in helping to connect education sites to the Internet. They might be connected to the Internet through ZAMNET or to another network server for e-mail capacity alone. A technology assessment of Zambia's education sector, coordinated by USAID/Zambia and LearnLink, might lead to the following suggestions: join the various components of the Ministry of Education on e-mail; link the cooperating ministries of ESIP on e-mail; link teacher training colleges to the Internet; and help maximize the existing computer capacity of the 72 district and provincial teaching resource centers by connecting each to e-mail and the Internet.

The only real limitation of this meta option is that while LearnLink and USAID can be of great assistance getting telephones, computers, and modems linked and working, and software installed, they are not in a position to pay the monthly phone bills of the rural teaching resource centers or for a local Internet service provider. While teacher training colleges and provincial and ministry offices may not incur additional expenses beyond monthly phone rates, rural resource centers would, and they do not have the resources to cover any additional costs. This option raises issues about the sustainability of technology assistance in underfunded education systems.

Recommendations

The fundamental problem of the Zambian educational system may be summarized simply: the number of children to be educated is rising fast, while the resources available to educate them have not kept pace and until recently were falling faster. The deterioration of the system that began with Zambia's economic decline in 1975 accelerated in the period 1985-94, and only recently have the quantity and allocation of resources begun to address the problems of the

sector. The education system as it is now organized and funded is only barely sustainable. Being barely sustainable means that the issues of quality, access, and relevance reported here will not be addressed.

Although the prospects for the Zambian educational system seem bleak, a strong case for USAID assistance to the sector can be made. First, the case for provision of assistance on political or humanitarian grounds bears consideration. The immediate needs of the education system are vast, and the suffering of children attending schools or excluded from the system are very real. Parents have demonstrated a commitment to education, as evidenced by the increased share of educational expenses they are willing to bear and by their participation in bodies such as PTAs. But they are increasingly frustrated with the low quality of education available to their children.

Second, the GRZ appears to have finally acknowledged the severity of the crisis that looms in the schools and has begun to do something about it. Since 1994, the GRZ has begun to increase the share of resources allocated to education and has directed a greater share to the primary subsector where the problems are more acute. The policy and analytical framework for revitalizing the education sector have been put in place through the National Education Policy and ESIP. In addition, the slow process of defining priorities and obtaining Zambian ownership of investment objectives is well under way. Moreover, many of the potential obstacles to effective intervention in the education sector have been addressed by ESIP. For example, the institutional capacity of the Ministry of Education to absorb technical assistance and donor funding has improved, the local printing industry is now able to produce books and instructional materials more easily, and private sector and community involvement are being encouraged.

Finally, the GRZ through ESIP has encouraged growing communication and cooperation between itself and the donor community. This cooperation bodes well for improving policy dialog, targeting resources to areas of greatest need and impact, and avoiding duplication of effort.

USAID has a decision to make. On the one hand, it could work with the other donors on education sector reform to increase the efficiency with which resources are used within the formal school system. This could be accomplished two ways: 1) working in the areas of policy development, administrative reform, and school governance (decentralization and management reform option) and/or 2) working to improve the quality and relevancy of primary education by influencing the inputs into the system, such as, in-service teacher training and materials and curriculum development (youth development through multiple interventions option). On the other hand, if the Mission decides it would prefer to focus possible education investments on activities that would enhance its already existing portfolio, it could choose to improve gender equity (girls' education option), strengthen prospects for child health and survival (improving learning and health in schools option), or strengthen individual institutions both inside and outside the formal public school system (education development fund option).

All options are designed to provide direct or indirect linkage to the current USAID/Zambia portfolio while, at the same time, providing low-cost, high-impact improvements in the education system. And all six options are thought to be best implemented through ESIP and in cooperation with other donors. The assessment team believes that any one, or a combination, of the options offered here is a sound investment in Zambia's future.

Appendix A

Zambia Basic Data Sheet

Category

General

Area (km square)	753,000
Population (millions) 1992	8.8
Growth rate 1980-1990	3.7
Growth rate 1996	2.8
Percent urban population 1993	46.0
Percent under 15 years	48.0
Percent women ages 15-49	23.0
GDP per capita 1996	US\$320
Percent living below poverty line	68.0

Health

Infant mortality (per 1,000 live births)	113.0
Under 5 mortality (per 1,000 live births)	202.0
Life expectancy at birth	44.0
HIV prevalence (percent)	25.0
Population per physician	11,400
Malnutrition for children under 5	27.0
Percent anemia in schoolchildren	50.0
Percent school-age infected with worms (est)	60.0
Percent school-age infected with Bilharzia (est)	30-80

Education

Illiteracy rate	33.0
Illiteracy rate, female	42.7
Number of students (millions)	1.8
Number of students, primary (millions)	1.5
Gross enrollment rate	82.7
Gross enrollment rate, female	78.4
Net enrollment rate	55.6
Gross enrollment rate, primary	103.4
Female gross enrollment rate, primary	93.0
Gross enrollment rate, secondary	18.3
Female gross enrollment rate, secondary	14.8
Net enrollment rate, primary	83.0
Female net enrollment rate, primary	80.0
Net enrollment rate, secondary	14.2
Female net enrollment rate, secondary	12.3

Number aged 7-13 not in school	657,000
Repetition rate, primary	2.6
Repetition rate, secondary	5.6
Primary school attrition rate after grade 4	7.6
Female attrition rate after grade 4	9.1
Primary school attrition rate after grade 6	6.8
Female attrition rate after grade 6	10.8
Percent of grade 7 admitted to grade 8	32.9
Female of grade 7 admitted to grade 8	26.9
Percent pass grade 9 exam, male	51.1
Percent pass grade 9 exam, female	32.1
Primary completion rate	79.2
Primary completion rate, female	71.4
Pupil/textbook ratio (official)	5.0
Pupil/teacher ratio, primary (official)	39.1
Pupil/teacher ratio, secondary (official)	24.8
Average class size, primary	44.7
Average class size, secondary	48.4
Pupil/classroom ratio, total system	128
Hours of instruction	3.5
Number of public schools, primary	3,883
Number of public schools, secondary	666
Number of private schools, primary	75
Number of private schools, secondary	30
Number of teachers	38,528
Number of female teachers	16,695
Percent untrained teachers	23.3
Total enrollments, university	3,734
Female total enrollments, university	841
Total enrollments, teacher education	4,598
Female total enrollments, teacher education	2,018

<i>Education budget</i>	<i>1995</i>	<i>1990</i>
Total GRZ expenditure on education		
as percent of total GRZ expenditure	10.4	9.1
as percent of GDP	3.1	2.7
Total GRZ expenditure on primary		
as percent of total expenditure on education	40.5	28.7
Total GRZ expenditure on secondary		
as percent of total expenditure on education	13.3	16.9
Total GRZ expenditure on tertiary		
as percent of total expenditure on education	21.8	28.7
Total GRZ expenditure on teacher training		
as percent of total expenditure on education	4.8	5.1
Total GRZ expenditure on education admin.		
as percent of total expenditure on education	17.1	26.7

Appendix B

List of Persons Contacted

Mike Bush, MD Central Health Board and Director of Corp Health Services Lusaka	Hyde Haantuba Senior Economist, Monitoring and Evaluation Agricultural Sector Investment Program Ministry of Agriculture, Fisheries, and Forests Lusaka
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Efrida Chisalo Senior Inspector of Schools, Home Economics Lusaka Province	Wilfred M. Kaiba Program Coordinator Education Sector Investment Program
Jorgen Christensen Senior Program Officer, Education Embassy of Sweden	Dr. Sichalwe M. Kasanda Permanent Secretary Ministry of Education Lusaka
Richard Dalgarno Education Planner Ministry of Education	Sheryll Lovelace Professor and Former Dean Veterinary School University of Zambia Lusaka
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Robin Miller
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Carolyn Winter
Education Specialist
Human Development Department
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Appendix C

List of Organizations Consulted

British High Commission T. Murray, first secretary Gordon Slavin, project officer, ODA	Lusaka Girls Basic School Rose Bowa, headmistress E. Nyambe, deputy head
Chilenje South Primary School Lusaka Mrs. Z. K. Chiyabi, acting headmistress	Lusakasa Primary School G.M. Simuunza, headmaster H. Kafuala, senior teacher Mrs. Matashi, senior teacher
Chongwe District Resource Center Silverrest Basic School Mr. Albert Z. Banda, headmaster	Ministry of Education Government of the Republic of Zambia Dr. Sichalwe M. Kasanda, permanent secretary
Education Sector Investment Program Wilfred M. Kaiba, program coordinator	National In-Service Teacher's College Mr. George M. Zeko, principal
Embassy of Finland Mariane Bergstrom, first secretary Dept. for International Development Assistance	Royal Norwegian Embassy Tor Tanum, first secretary Private Sector, Industry, Education
Embassy of Netherlands Given Daka, program officer, Education	Tree Tops Primary School Lillian Munyati, headmistress Lusaka
Embassy of Sweden Christer Agren, counselor	UNICEF United Nations Children's Fund Harriet M. S. Miyato, project officer, Education Martha Santos, project officer, Education Mark Stirling, representative
Embassy of Sweden Jorgen Christensen, senior program officer, Education	The World Bank Richard Beardmore, deputy resident representative Zambia Resident Mission, Southern Africa Dept.
Garden Compound Drop-In Center Edith Ngoma, headmistress Lillian Chikata, teacher Lusaka	Zambia Education Rehabilitation Project Grey R. Mulomba, director
Japan International Cooperation Agency Kozo Tsukada, deputy resident representative Chaponda Daka, tech. cooperation secretary Yoshinori Kitamura, assist. resident representative Lusaka	Zambia Examinations Board
Kankumba Primary School Mr. Chingalika, deputy headmaster	Zambia National Commission for UNESCO Lawrence A. Chibutu, acting director

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Appendix E

Donors Investing in Education

Finland

FINNIDA, the development-promoting arm of the government of Finland has been a long-standing supporter of the government of Zambia. The Finnish portfolio focuses on the agriculture and education sectors. The educational assistance is targeted at the construction of 420 primary schools throughout Zambia. These projects stipulate matching funds to encourage community participation.

The FINNIDA official we visited expressed concern over the prevalence of corruption at all levels of government and pointed to the weakness in the legal system, which makes it difficult to curb the problem. The official also indicated that until government officials take their responsibilities more seriously, the efforts of ESIP can not bear fruit. Nevertheless, FINNIDA intends to support ESIP, possibly through unearmarked contributions, and make extensions contingent on positive progress.

Finland budgeted US\$8 million to be spent over the course of four years for the education sector in Zambia.

Japan

Since April 1970, the government of Japan, through its aid agency, Japan International Cooperation Agency (JICA), has been supporting the government of Zambia in the education, infrastructure, and health sectors.

In the education sector, JICA emphasizes vocational training at the secondary level. The vocational program provides training in TV and radio repair, home economics, electronics, welding, brick laying, ceramics, photography, music, and

orthopedic equipment making. These programs enroll equal numbers of boys and girls.

Eighty young Japan Overseas Cooperation Volunteers are dispatched throughout Zambia to provide technical assistance in mathematics, science, and other technical areas. In addition, JICA gives full scholarships to 50 girls annually to attend the University of Zambia.

Japan is a participant in ESIP.

Netherlands

The Dutch government puts heavy emphasis on the education sector. Its focus is at the basic education level involving construction of primary schools, access for girls, vocational training, and issues surrounding examinations.

The Netherlands is a cosponsor of ZERP along with the World Bank. As ZERP wound down its activities at the end of 1997, The Netherlands intended to continue its investment in education through ESIP and independent projects.

Norway

The Norwegian Agency for Development Cooperation concentrates its assistance on gender equity and primary education. Emphasis is placed on girls' learning, nonformal education, and some community development activities. The agency collaborates with UNICEF and expects the GRZ to assume most of the responsibility for continuation, with assistance from the World Bank. The level of funding expected for these activities is US\$2 million. The projects are now in the design stage. Dialogue with other donors is to start soon.

Sweden

The Swedish International Development Cooperation Agency (SIDA) has a long history of involvement in Zambia—more than 30 years since 1964. Throughout these years, Sweden has supported the education sector in four areas: 1) educational planning, 2) educational materials for the primary level, 3) Self-Help Action Plan for Education (SHAPE), and 4) the University of Zambia.

The current level of support for Zambia's education sector is US\$18 million over three years to conclude at the end of 1997. Due to austerity measures taken by the Swedish government, funding levels for global aid will be reduced from 1 percent of Gross National Income to 0.7 percent of GNI starting next fiscal year. Support to the University of Zambia is being phased out, and total exit from the education sector is under serious consideration. SIDA plans to remain focused in the Health and Agriculture sectors.

Officials at the Swedish Embassy strongly urge the participation of USAID in the education sector and encourage collaboration through ESIP. They point out that USAID involvement is timely and believe the United States' lead in the decentralization reform area is especially appropriate. Officials at SIDA have made it clear that they welcome informal discussions on this subject with USAID at any time.

UNESCO

The Zambia National Commission for UNESCO promotes peace and cultural development through educational activities. During 1997 UNESCO focused on teacher education workshops at teacher training colleges.

UNESCO provides limited funding to the education sector in Zambia at the level of US\$250,000 per annum.

UNICEF

UNICEF's country goal in education for Zambia is to ensure access to quality education for all primary-age children (7 to 13 years) and to provide learning opportunities to empower individuals with the skills, knowledge, confidence, and capacities required to enable them to manage life challenges. UNICEF appears to be working in several areas in Zambian education including: the Community Schools in Zambia project, which aims to demonstrate community-based approaches to primary education for all children; and the Programme for the Advancement of Girls' Education (PAGE), which seeks to achieve gender parity in enrollment and completion rates. PAGE, with US\$400,000 in Canadian International Development Agency support, appears to be its priority program in education. The project, which works with provincial- and district-level education officers, heads of schools and teachers, and community leaders and parents, is being piloted in 20 schools to increase primary-age girls' enrollment, progression, and completion.

UNICEF expressed some frustration with the GRZ and its ESIP. It observed that the GRZ has trouble articulating its investment priorities and does not appear to have a well-defined strategy for the education sector. UNICEF also was unsure that the Ministry of Education had the necessary leadership and courage to take the bold steps necessary to carry out an integrated investment strategy. As a result, it was taking a "wait and see" approach to ESIP.

United Kingdom

The British ODA's most notable contribution to Zambia's education system has been the construction of a series of resource centers located strategically throughout the country—at least one in each of the nine provinces. These centers are used for teacher in-service, materials development, and as a depository of reference materi-

als. They are also used by communities for civic gatherings and in-service in other sectors such as health. The centers are even used to show people how to start home vegetable gardens.

ODA also supports math and science instruction through the Action to Improve Math and Science project. ODA has helped the University of Zambia initiate its Internet business and has assisted in the areas of vocational education and teacher training.

ODA has also provided assistance in the health sector. For example, ODA has participated in the rehabilitation of eight clinics, greatly reducing the pressures on nearby hospitals.

World Bank

The World Bank continues to be the prime mover in the education sector in Zambia. In recent years, the Bank has provided about US\$1 million to the development of ESIP and about \$32 million to ZERP. ESIP is well documented elsewhere. ZERP has five components, including:

- Rehabilitation and construction of 20 schools,

which increased the system's capacity by 40,000 places;

- Education management, which provided limited management training to school inspectors and headmasters and improved the management of teacher personnel and records;
- Educational materials, which liberalized book publishing policy, increased the number of textbooks in English, math, and science, and reduced the book-pupil ratio to about five students per book;
- Examinations, which provided buildings, security, and computers; and
- Policy studies for 11 areas.

The World Bank noted some frustration at the slow pace of ESIP, although they understand that developing GRZ ownership of the reform takes time and patience. The Bank also concluded that ESIP and the GRZ seemed to have difficulty prioritizing, noting that the first set of proposals in the 11 ESIP areas totaled more than US\$1 billion and in some areas bordered on pure fantasy. Despite the problems, the Bank was confident that ESIP would be successful and strongly urged USAID to work within it.

Appendix F: Tables

Appendix G

Tanzania Partnership for Child Development

Ushirikiano wa Kumwendeleza

Mtoto Tanzania (UKUMTA)

Summary

The UKUMTA programme, an abbreviation of its name in Kiswahili, (*Ushirikiano wa Kumwendeleza Mtoto Tanzania*), is being implemented in three districts of Tanga Region through the existing inter-sectoral school health programme. A foundation survey in May 1995 indicated the need for mass treatment with albendazole in all schools and a questionnaire survey of self-reported *kichocho* (schistosomiasis) administered by teachers to nearly 75,000 children in 345 schools showed that mass treatment for urinary schistosomiasis was required in 158 schools. Health education materials were developed by an inter-sectoral team from the Ministry of Health (TMOH) and the Ministry of Education (TMOE). A baseline survey was done between March and May 1996 to assess the health of children before mass treatment and health education were begun. Stunting, anaemia and parasitic infections were common. Praziquantel and albendazole were administered together when both drugs were given; praziquantel was administered on the basis of height, a measurement that had been shown to be a good proxy for body weight. Health education materials are currently being revised in the light of experience of their use.

Introduction

The UKUMTA programme is being implemented in Tanga, Muheza, and Korogwe Districts in Tanga Region, a coastal region situated north of Bagamoyo District, to the west of Kilimanjaro and Arusha Regions and to the south of the border with Kenya. In 1994, the three districts contained 350 schools and 108,349 pupils.

Programme Management

The programme is being implemented through the existing government School Health Programme that is coordinated by two ministries, TMOH and TMOE. The organization of the school health programme is shown in the attached figure (page 49).

UKUMTA is coordinated by a Secretariat, a national steering committee made up of representatives of four ministries or offices: TMOH, TMOE, the Ministry of Community Development, Women Affairs and Children (TMCD), and the Office of Local Government (TOLG) in the Prime Minister's Office. TMCD is involved to ensure that the school health programme is actively promoted within the local community, and the TOLG is involved because it is responsible for maintaining schools and employing teachers, and would be likely to be involved in any cost recovery mechanism if one were developed. A regional UKUMTA secretariat acts as a steering committee in Tanga to coordinate regional activity and is made up of representatives from the same four ministries.

The main subcommittee of the secretariat is the Research Coordination Committee which provides advice on research taking place within UKUMTA and reviews proposals for satellite studies. It comprises experienced researchers from the four ministries participating in UKUMTA with representatives of the Muhimbili Medical Centre, the Tanzania Food and Nutrition Centre, the Tanzania Institute of Education and the University of Dar es Salaam.

Implementation

TMOE and TMOH are responsible for implement-

ing the programme. School health coordinators are in place at national, regional, and district levels, in both the ministries. In some divisions of the three programme districts of Tanga Region, TMOE also has divisional school health coordinators. At the next level in administration, ward education officers are responsible for supervising the school health programme in schools. The three programme districts contains 350 primary schools with about 110,000 children.

Monitoring and Evaluation

The monitoring and evaluation team is coordinated by Prof. Charles Kihamia with staff of TMOH, TMOE, TMCD, the Muhimbili Medical Centre, the Tanzania Food and Nutrition Centre, the Tanzania Institute of Education, and staff of the Tanga Regional Hospital .

Programme Development and Design

Tanga Region was selected for the programme by TMOH based on a number of attributes: urinary schistosomiasis and intestinal parasitic infections were known to be widespread, the population density was relatively high for Tanzania, enrollment in school was thought to be quite good, there were no other major health programmes in the region, and Tanga Region is accessible by a fast road from Dar es Salaam.

Tanga Region comprises six districts and in 1994 contained the following primary schools and pupils: Tanga (63 schools and 32,563 pupils), Muheza (150 schools and 40,620 pupils), Korogwe (139 schools and 39,312 pupils), Lushoto (180 schools and 64,917 pupils), Handeni (120 schools and 35,126 pupils) and Pangani (25 schools and 6,255 pupils). Three districts (Tanga, Muheza, and Korogwe: 350 schools and 112,495 pupils) were chosen in which to implement the programme and these districts comprise the intervention area, with the remaining three districts (Lushoto, Handeni, and Pangani: 325 schools and 106,298 pupils) to act as a control area, called the comparison area.

Foundation Survey

In order to assess the prevalence of infection and micronutrient deficiencies and so determine what interventions were required, a foundation survey was undertaken in May 1995 in 15 schools covering the six districts and the four different physical environments that characterize the region: cool highlands, wet lowlands, dry lowlands, and the coastal strip.

Anthropometric measurements were also made on a large sample of primary school children in order to examine the relationship between weight and height by age and sex to see if height could be used, as in Ghana, as a way of estimating body weight for the purpose of giving treatment with praziquantel.

Questionnaire Survey of Ill-Health

A questionnaire was administered in all schools in the region by teachers to all children which inquired about 15 common and well-recognized health problems that children might have experienced in the last week. The problems included questions on blood in urine and *kichocho*, the Kiswahili name given to disease caused by species of *Schistosoma* including *S.haematobium*, the cause of urinary schistosomiasis and the most common form of schistosomiasis in Tanga Region. The questionnaire was validated in 45 schools using reagent strips to detect blood in samples of urine from school children and the results were used to estimate the prevalence of reported *kichocho* that is equivalent to a prevalence of infection of 50 percent and would therefore warrant mass treatment according to WHO recommendations.

Development of Health Education Materials

A survey of the current knowledge, attitudes and practices of primary school children was undertaken during the foundation survey and the results were analyzed and used to guide the development of health education materials. Pictures were developed and tested extensively in primary schools in Tanga Region by staff of TMOE and TMOH,

and tested further during an East African regional workshop held in Kisumu, Kenya, on children's perceptions of pictures. The finished pictures were then printed in the form of a flip chart, and three manuals were prepared about UKUMTA: one for teachers, one for health workers, and one for community development officers.

Training

A total of 12 two-day training courses were held in January and February 1996 at 10 sites in the three intervention districts, and personnel in TMOH, TMOE, and TMCD were invited to attend. In total 750 teachers (the head teacher and the domestic science teacher from each school), 70 ward education officers, 70 ward community development officers, and 222 health personnel (two from each of the 111 health posts and dispensaries) attended.

Baseline Survey

The survey was conducted over a period of 12 weeks between March and May 1996 in 21 schools in the intervention area and 20 schools in the comparison area. Schools were randomly selected on the basis of the following criteria:

- if the prevalence of reported *kichocho* was 25 percent or greater so that mass treatment with praziquantel would be given and all interventions would thus be applied in the schools selected;
 - if selected schools contained at least 150 pupils so that there would be a chance of finding the 52 children required for study; and
 - if schools were reasonably accessible from the major bases to be used by the field team.
- Groups of children of both sexes were selected in the following age ranges: 8 - 10 years and 12 - 13 years. Thirteen children in each sex and age group were randomly selected from the all eligible children in each school. The following information, examinations, tests, and measurements were undertaken:
- basic socioeconomic data including age, sex, family circumstances, and indicators of eco-

nomic status (all children);

- quantitative microscopical examination of a faecal specimen for the eggs of intestinal worms (all children);
- a semi-quantitative test of urine using a reagent strip for blood due to disease caused by *Schistosoma haematobium* (all children);
- quantitative microscopical examination of a filtrate of 10 mls of urine for the eggs of *Schistosoma haematobium* (all children);
- physical examination for signs of infection, ill-health, and micronutrient deficiency (all children);
- venous blood sample collected to estimate haemoglobin concentration (50 percent sample);
- blood serum collected to undertake assays for retinol (vitamin A), ferritin (iron status), thyroid stimulating hormone (iodine status), C-reactive protein (an indicator of recent acute infection), and *W.bancrofti* filarial antigen (50 percent sample);
- urine sample collected to estimate the concentration of iodine (50 percent sample); and
- questionnaire about knowledge, attitudes, and practices (50 percent sample).

About 2,000 children were studied, 1,000 in each area, and about 250 in each age and sex class. Micronutrient and blood chemistry assays are currently being undertaken and the data is being analyzed. All children who were selected for study in schools in the comparison area were given treatment for their infections with *S.haematobium* and intestinal worms.

Intervention

Mass treatment with albendazole was provided free in all schools in the intervention area after the baseline survey had been completed, while mass treatment with praziquantel was given in schools in which the prevalence of infection with *S.haematobium* was estimated from the questionnaire survey to be 50 percent or greater.

The number of tablets provided to each school was based on an indent sent by the headmaster

of each school that showed the number of children by class and sex. The tablets were repackaged by the provincial school health programme in the presence of the district education officer who then received them on behalf of the schools in the district. The packages of tablets were collected by ward education officers who delivered them to each school where they were administered by teachers. All unused tablets were recovered by the ward education officers and returned to the district education office.

Praziquantel was administered by teachers on the basis of height using a pole provided to each school that was marked to show the number of tablets required for children ranging in height between 100 to 178 cms. The relationship between height and weight had been determined from a sample of 1,000 children and had shown that 98 percent of children would have received within half a tablet of the same dose had the dose been determined on the basis of body weight. Each pole provided to schools also had a steel height measure fixed to it to allow height to be measured as well.

All schools were provided with a health card for each pupil modeled on the current school pupil record card that each school is supposed to maintain for every enrolled pupil. These health cards were provided so that teachers could record the treatments given and, in addition, record any problems reported after treatment. Space was also provided for record measurements of height and weight, and any symptoms of ill-health and treatments given.

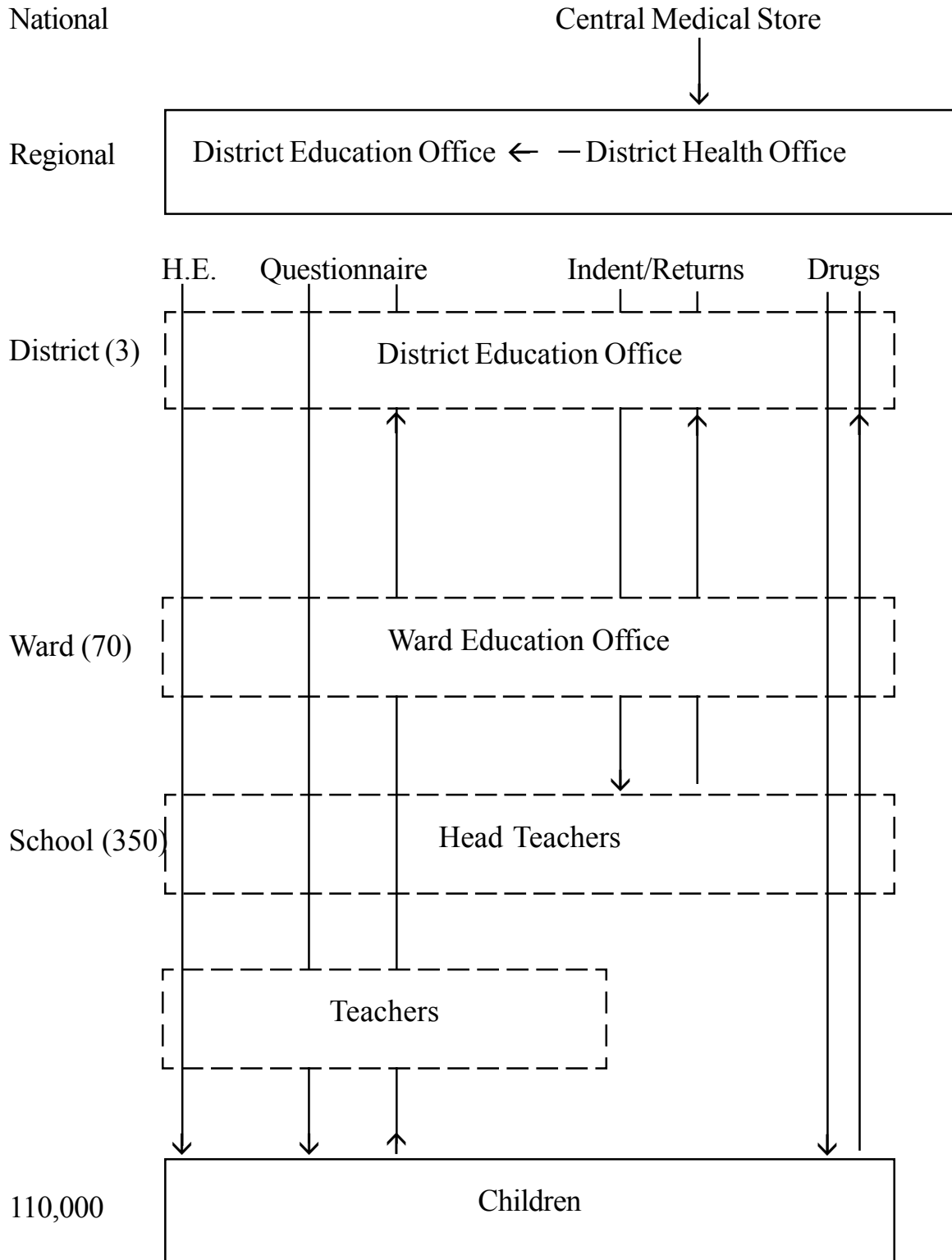
Efficacy of Treatment

Faecal samples were collected in May 1996 after treatments had been given from 413 children in eight schools in order to assess the prevalence of infection after mass treatment.

Survey of Perceptions of the Programme

A survey of the perceptions of the school health programme by teachers, parents and children was undertaken in August and September 1996. A mixture of questionnaires, informal interviews, and focus group discussions were used to collect data on views of UKUMTA from 356 children, 52 teachers and 148 parents.

UKUMTA TANZANIA FLOWCHART OF INTERVENTIONS



Appendix H

Malawi's Girls' Attainment of Basic Literacy and Education (GABLE) Project

Malawi is one of the poorest countries of the world. Despite strong economic growth during the 1960s and 1970s, severe drought, widespread poverty and food insecurity, and a large influx of refugees from neighboring Mozambique contributed to economic downturn and destabilization. A second 10-year plan, initiated in 1985, placed heavy emphasis on expansion and quality improvements of the primary education cycle.

In 1991, the government of Malawi began an initiative to increase the participation of girls in basic education. This project, which received funding from USAID, combined budgetary support, technical assistance, and policy reform to identify constraints that limit girls' opportunity to attend and succeed in school. The primary goal was to decrease fertility rates in the country by improving girls' access to education. This initiative combines nonproject assistance (budgetary support to governments that is disbursed in tranches upon fulfillment of mutually established conditions), and project assistance in support of technical assistance and research.

Shortly after GABLE began, the government of Malawi announced a fee waiver policy for non-repeating girls in standard 1 and later phased in for standards 2 and 3 in subsequent years. This initiative increased standard 1 enrollments by 40 percent in the first year and in the 1992/93 school year, the number of girls enrolling in standard 1 exceeded the number of boys enrolled in school. Fee waivers for nonrepeating girls also had a positive impact on their persistence in the higher standards.

School fees were completely abolished in 1994, which resulted in a substantial increase in enrollment from 2 million in 1994/94 to 2.9 million during the preregistration period the following

August. Support was also given to the ministry for the development of a pupil registration system. A major component of the GABLE program was a community-based social mobilization campaign. This initiative utilizes marketing and publicity techniques in conducting research, and the generation and dissemination of information concerning girls' education. Specific activities in this initiative include: participatory theater for development, focus groups, music festivals, training of community leaders, radio dramas, and the distribution of posters, T-shirts, readers, calendars, etc.

Part of the social mobilization campaign focuses on action plans to be developed by community target groups that address the constraints to girls' education in their community. A key ingredient for the program's overall success is the participatory way base line data is gathered through the use of knowledge, attitude, and practice (KAP) studies, and then transformed into village awareness drama productions through the Theatre for Development component. This process further feeds into the community action plans that are later developed.

A full revision of the primary curriculum was completed. A Gender Appropriate Curriculum Unit was established at the Malawi Institute of Education to ensure that revision work would be ongoing and that a gender specialist would be employed as a lecturer in the preservice teacher education program. In addition, this specialist would be responsible for gender training workshops for personnel at all levels in the ministry. This unit also serves to evaluate the gender sensitiveness and appropriateness of ministry policies and regulations.

GABLE has supported a wide array of research at both the community and school level. It has

funded studies that examine how supply side factors such as availability of school places, teacher attributes, and the quality of schooling affect a girl's access, persistence, and performance in school. Classroom ethnographies have identified classroom practices that limit the educational experiences of girls. School expansion has not matched increases in student enrollment that followed the school fees waiver, and classrooms in both urban and rural settings frequently average more than 100 pupils per classroom particularly in the lower standards. Additionally, because of the lack of space and inadequate numbers of

schools, many classes meet outdoors.

In an effort to improve the quality of education in multiple shift classrooms (both end-on and overlapping shifts), GABLE funded a pilot study that introduced double shifts in urban schools where high demand for schooling and overcrowding are particularly serious problems. An innovative approach also being pilot tested is the creation of single sex gender units for math and science instruction in coeducational schools (USAID, 1994; World Bank, 1996).

Appendix I

USAID/Zambia Staff Present at Consultants' Debriefing

Toni Enraca, chief accountant
 Paul Hartenberger, PHN
 Guinness Mumisa, program specialist
 Walter North, director
 David Soroku, ADO
 Rudolph Thomas, assistant director
 Bessie Thornicroft, training specialist
 Curt Walters, program officer
 Ben Zulu, financial analyst

List of Key People in Education in Zambia as Requested by USAID/Zambia Director W. North

Private Schools and Colleges Association
 Dinghewe S. Chipeta, national chairman

Ministry of Education
 Government of the Republic of Zambia
 Dr. Sichalwe M. Kasanda, perm. secretary

School of Education
 University of Zambia
 Professor G. Lungwangwa

Professor Andrew Siwela, vice chancellor
 University of Zambia

British High Commission
 T. Murray, first secretary
 Gordon Slavin, project officer, ODA

Education Sector Investment Program (ESIP)
 Wilfred M. Kaiba, program coordinator

Embassy of Netherlands
 Given Daka, program officer, Education

Embassy of Sweden
 Christer Agren, counsellor
 Jorgen Christensen, senior program officer,
 Education

UNICEF
 United Nations Children's Fund
 Mark Stirling, representative

The World Bank
 Richard Beardmore, deputy resident representative
 Zambia Resident Mission, Southern Africa
 Department

Zambia Education Rehabilitation Project
 (ZERP)
 Grey R. Mulomba, director