



A WORLD BANK COUNTRY STUDY

19809
October 1999

Tanzania
Social Sector Review



Tanzania

Social Sector Review

The World Bank
Washington, D.C.

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First printing October 1999

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ISBN: 0-8213-4585-0
ISSN: 0253-2123

Cover photo taken in 1996 of girls who received scholarships to attend secondary school in a pre-test of the program, which was a direct result of the analysis of this document. This first cohort of girls will graduate from lower secondary school in December 1999.

Library of Congress Cataloging-in-Publication Data

Tanzania : social sector review.

p. cm. — (World Bank country study)

Includes bibliographical references.

ISBN 0-8213-4585-0

1. Human services—Tanzania. 2. Tanzania—Social conditions. I. World Bank. II. Series.

HV448.5.T36 1999

362.9678—dc21

99-047476

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Acronyms and Abbreviations

ADB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
BMI	Body Mass Index
CBD	Community-Based Distribution
CIDA	Canadian International Development Agency
CMS	Central Medical Stores
CPI	Consumer Price Index
CPR	Contraceptive Prevalence Rate
CSPD	Child Support, Protection and Development
DEO	District Education Officer
DHMT	District Health Management Team
DM	Deutschmark
DMO	District Medical Officer
DSM	Dar es Salaam
DWD	Department of Water Development
EDP	Essential Drugs Program
EKWSP	East Kilimanjaro Water Supply Project
EPI	Expanded Program on Immunization
ESR	Education for Self-Reliance
FAO	Food and Agriculture Organization
FAST	Focused Area Studies Technique
FINNIDA	Finland International Aid Organization
FY	Fiscal Year
GDP	Gross Domestic Product
GTZ	German Technical Assistance Agency
HC	Health Center
HESAW	Health through Sanitation and Water
HH	Household
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRDS	Tanzania Human Resources Development Survey
ICD	Institute for Curriculum Development
IDD	Iodine Deficiency Disease
IEC	Information, Education and Communication
IFC	International Finance Corporation
IMR	Infant Mortality Rate
IUD	Intrauterine Device
JICA	Japan International Cooperation Agency
JNSP	Joint Nutrition Support Project
KAP	Knowledge, Attitudes and Practices

Acronyms and Abbreviations (continued)

MCH/FP	Maternal and Child Health/Family planning
MOE	Ministry of Education (Zanzibar)
MOEC	Ministry of Education and Culture
MSTHE	Ministry of Science, Technology and Higher Education
NCHS	National Center for Health Statistics
NGO	Nongovernmental Organization
NORAD	Norwegian Agency for International Development
NUWA	National Urban Water Authority
OC	Oral Contraceptive
ODA	Overseas Development Agency
PCM	Protein-Calorie Malnutrition
PER	Public Expenditure Review
PHCC	Primary Health Care Center
PHCU	Primary Health Care Unit
PMO	Prime Minister's Office
PSLE	Primary School Leaving Examination
RDD	Regional Development Director
REO	Regional Education Officer
RHMT	Regional Health Management Team
RMO	Regional Medical Officer
RWMP	Regional Water Master Plan
SIDA	Swedish International Development Authority
SSR	Social Sector Review
TB	Tuberculosis
TBA	Traditional Birth Attendant
TDHS	Tanzania Demographic and Health Survey
TES	Tanzania Elimu Supplies
TFNC	Tanzania Food and Nutrition Center
TFR	Total Fertility Rate
TIE	Tanzania Institute of Education
TKAP	Tanzania Knowledge, Attitude and Practice
Tsh	Tanzanian Shilling
TTC	Teacher Training College
UK	United Kingdom
UMATI	National Family Planning Organization
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UPE	Universal Primary Education
US\$	United States Dollar

Acronyms and Abbreviations (continued)

USAID	United States Agency for International Development
VAD	Vitamin A Deficiency
WDR	World Development Report
WHO	World Health Organization
WTP	Willingness to Pay

ABSTRACT

This report was prepared by The World Bank cooperatively with the Government of Tanzania to provide a comprehensive review of Tanzania's social sector activities, including education, health, water and sanitation, nutrition, and family planning. It has contributed materially to The World Bank's social sector policy dialogue with the Government of Tanzania, precipitated the restructuring of the World Bank's portfolio in health and education, and led to improved cooperation in the social sectors both within the donor community and between donors and the Government. The report is based on the Human Resources Development Survey of 1993/94, qualitative surveys, community case studies, and other population-based surveys, such as the Tanzania Demographic and Health Survey 1991/92 and the Tanzania Knowledge, Attitudes and Practices Survey 1994.

The report describes trends in the social sectors and analyzes the factors that influence these trends, including the performance of the economy, government social sector spending and policy, household behavior and incomes, and demographic trends. Findings from the surveys and case studies are synthesized to provide a comprehensive picture of the demand for and supply of education, health, water and sanitation, nutrition, and family planning services. Tanzania's social indicators remain among the poorest in the world. The report reviews these trends, presents issues, assesses past government policies in the social sectors, and provided both the data and framework for the development and implementation of the Government's Social Sector Strategy.

This document is part of a series of analytical pieces on poverty and the social sectors in Tanzania, including *Tanzania: A Poverty Profile*, Report No. 12298-TA (1993); *Tanzania: The Challenge of Reforms: Growth, Incomes, and Welfare*, Report No. 14982-TA (1996); and *Technical and Higher Education and Training in Tanzania: Investments, Returns, and Future Opportunities*, Report No. 15327-TA (1997).

ACKNOWLEDGMENTS

This report was prepared by a team under the guidance of Charles C. Griffin. Members included Anil Deolalikar, Nicholas Kessy, Faustin Mukyanuzi, Issa M. Omari, Perran Penrose, Liberatus L. Shirima and Dale Whittington (consultants); Michael Kiernan and Jens Pedersen (DANIDA); Larry Forgy (USAID); Margaret Grosh; Emmanuel Malangalila; R. Paul Shaw; Sverrir Sigurdsson; Maria Luisa Ferreira; Young Hoy Kimaro; Ruth E. Levine; and Lynn Tsoflias. Amit Dar and Ruth Levine assembled and analyzed most of the information on post-secondary education. Lynn Tsoflias took primary responsibility for assembling information on the social sectors in Zanzibar. Tamara Fox assisted with the collection and cataloguing of background materials. The authors are grateful for the many background papers that were prepared for this report. The papers are listed in the bibliography. The authors are also grateful for the thoughtful comments on earlier drafts. In particular, we thank Elizabeth Morris-Hughes, Mark Blackden and Chitra Bhanu for a thorough gender review of the previous draft. Ruth Levine took primary responsibility to pull the work of many different authors together into a cohesive report. R. Marisol Ravicz and Andrew Follmer updated the budget numbers for this publication. Oscar Picazo, under Ruth Kagia's direction, pushed the report to production, with final editing by Suzanne Gnaegy.

The report was prepared under the general supervision of Jacob van Lutsenburg Maas, Division Chief, AF2PH, and James W. Adams, Director for Tanzania and Uganda. Motoo Konishi and Ronald British, Resident Representatives, provided support throughout the process of developing this report. The peer reviewers were Jeffrey Hammer (EAPVP) and William McGreevey (PHN), and the Lead Economist was Shahid Yusuf.

The household survey data used for this report were collected as part of a collaborative project of the World Bank with the University of Dar es Salaam and the President's Office Planning Commission, partially financed by the Government of the United Kingdom. The survey forms, training materials, and data from the Human Resources Development Survey 1993/94 are available in electronic form at The World Bank's web site, <http://www.worldbank.org/html/prdph/lsm/guide/select.html>.

The authors would like to acknowledge, with thanks, the support provided by Yordi Seium, Lourdes Cuadro-Meliotes, and Helen Taddese at World Bank Headquarters, and Betty Sakaya, Maryanne Mwakangale, Rosalie Ferrao, Lorraine James and Mercy Sabai at the World Bank Resident Mission, Dar es Salaam.

The authors would also like to express gratitude for the leadership provided by the President's Office Planning Commission in overseeing this work. In particular, we would like to thank F. Kazaura, Principal Secretary; J. Kipokola, Deputy Principal Secretary; and J. Zayumba, Director, Social Services. The Steering Committee and Technical Subcommittee provided guidance at all stages. Members included: J. Kipokola, M. Konishi, A. Chiduo, P. Hiza, H. Kamote, E. Malangalila, R. Man'genya, F. Mrisho, L.K. Msaki, M. Mvungi, H.K. Mwenisongole, F. Ndaba, G. Upunda, and J. Zayumba.

PREFACE

The core material for the report was drawn from the 1994 Human Resources Development Survey and supplemented with background reviews of specific sector issues. The report discusses the situation and trends in the social sector and identifies ways that the government, the private sector, and households can use their respective resources most effectively. Chapter 1 provides the background and objectives of the social sector review. Chapter 2 traces the evolution of the social sector in Tanzania and the issues engendered by different policy regimes since the country gained independence. Chapter 3 presents the characteristics of the Tanzanian household; from this characterization, the report draws innovative household-focused, demand-driven policy recommendations. The succeeding chapters review the performance and issues in specific subsectors (Chapter 4 on education, 5 on health, 6 on family planning, 7 on nutrition, and 8 on water and sanitation) and draws conclusions and appropriate responses to deal with these issues. Chapter 9 reviews these same sectors for Zanzibar.

The enthusiasm by which the results of this report have been embraced by the government and its partners is demonstrated by the quick adoption of its prescriptions. In education, two recent initiatives - the community education fund and the scholarship for girls in secondary schools - illustrate the way the study's recommendations are being implemented.

Community Education Fund (CEF) – This is a program designed to help communities improve their primary schools. A participating school community conducts an annual fund-raising campaign and deposits the resources generated in the bank. The government provides a matching grant to the community-generated resources on a ratio of 1:1 or 1:1.5 for poorer communities. The community, through a village committee and the schoolteacher, plans and executes the use of these combined resources to improve school instruction, based on an agreed list of allowable expenditures. Under the roll-out program, by 1999 a total of 357 schools are expected to have established functioning CEFs.

Girls Secondary Education Support (GSES) Program – GSES is a pilot program which provides bursaries for selected secondary-school girls. It aims to increase the enrollment rates of currently under-represented girls in secondary schools by targeting bright students coming from poor families who would otherwise not be able to continue their studies beyond Standard VII. Girls' education is an important investment in Tanzania, as this Social Sector Review shows, for it has important linkages in the improvement of household income, reduction in fertility, and improvement in women's health status. The GSES pilot sites now cover nine districts in six regions. More than a thousand girls are currently enrolled, with the first batch expected to graduate in December 1999.

Since the results of the Social Sector Review were disseminated, the Ministry of Health has revitalized its fee-based cost sharing program, pretested the concept of community health funds, initiated a drug capitalization program for hospitals, reexamined its health policies in light of its burden of disease and cost-effectiveness review, and is launching a health insurance program for civil servants with the enabling Act of Parliament passed in April 1999.

Drug Capitalization Program – Under this program, the Medical Stores Department procures drugs for government health facilities and supplies hospital pharmacies with drugs that they manage as revolving funds based on patient fees. Twenty-three hospitals have been selected for the initial set of participating hospitals and capitalized with an initial stock of 2- to 4-months' supply of drugs. The fee and demand-driven elements of the program are intended to provide a more sustainable arrangement and to inculcate discipline among hospital managers who are now mandated to determine their actual pharmaceutical needs and not reduced to being passive recipients of supplies.

National Health Insurance – Tanzania is in the process of launching a health insurance program that will cover initially 92,000 civil servants or 552,000 persons including dependents. The program will be funded by a mandatory contribution (3% of salary) from the employee and an equal contribution from the government as employer. The program was motivated by the need to increase financial resources to the health sector; to facilitate private financing of curative care; and by allowing members' choice of accredited providers, to introduce demand elements into the historically supply-driven and ill-funded government health facilities. The program is expected to assist the further development of the Tanzanian health care market.

Cost Sharing Program – This user-fee program, formally launched in July 1993, underpins the other initiatives in the health sector. One of the key results of the Social Sector Review was the policy focus on user fees at the hospital level, to be accompanied by a program for dispensaries and clinics that strengthens community participation and moves towards a risk-sharing system (see Community Health Funds below). The Cost Sharing Program has since been expanded to cover all hospitals and in 1998, national policy also allowed dispensaries and health centers to charge modest fees. The program now contributes around 13% of total recurrent costs of the Ministry of Health budget, from a modest contribution of under 1% in 1993/94. There are anecdotal evidence suggesting a variety of efficiency improvements (more reliable supplies at hospitals, better facility upkeep, improved morale of providers, etc.), but there continues to be issues with respect to waivers and exemptions that need to be resolved and for the system to be improved so as not to prevent access to care by the truly indigent.

Community Health Fund (CHF) – This is a village prepayment scheme for health services pretested in Igunga District in 1996; it has since attracted national attention for its ability to mobilize communities to generate revenues for health, identify service needs, and plan for their funding and delivery. Under a typical scheme, a participating household voluntarily prepays Tsh 5,000 a year for the benefit of consultations and drugs provided at the dispensary, health center, or the district hospital outpatient department. Non-CHF members pay the usual Tsh 500 per visit at the dispensary or health center and Tsh 1,000 at the district hospital outpatient department. Those without capacity to pay are protected through community-determined exemptions. As of November 1998, CHFs in five pretest districts already cover some 269,000 household members who have contributed Tsh 131 million in the form of prepayments and user fees. The government plans to replicate these schemes in other districts nationwide.

At the macro level, the Government of Tanzania has also taken major initiatives supportive of the social sector prescriptions made in this study. The budget reform program, through the medium-term expenditure framework, seeks to improve the predictability, sustainability, allocative efficiency, transparency, and accountability of the budget (especially education and health) through a variety of public expenditure management mechanisms such as better sector programming, stricter enforcement of budgetary ceilings, expenditure tracking, and greater performance or results orientation.

The Local Government Reform Program is intended to devolve education and health services to local councils. The implementation will be carried out in three phases beginning January 1999, each phase comprising one third (around 35) of all districts and urban councils. The devolution process is expected to involve a complex set of activities including organizational restructuring, staff retrenchments and hiring under the Civil Service Reform Program, design and use of new fiscal instruments to provide funds to devolved district services, installation of new financial and personnel management systems, and capacity building at central, regional and district levels.

It certainly would take some time before the results of these and other policy reforms in the social sector would be fully realized. And there is always an initial cost involved in the transitory period. But this Social Sector Review has taken a close and candid look at the past and the past left much to be desired. The review has catalyzed the process of change. Perhaps more important than the document itself is the critical catalyzing role that the participatory process played in helping key actors in the government to review the situation, identify key bottlenecks in the system, and take action in innovative ways to implement key changes in the system of financing and providing social services. Now five years into the implementation process, much progress has been made, but the reforms themselves have opened new challenges.

EXECUTIVE SUMMARY

THE MESSAGES

The two main messages of this review echo throughout the document:

- Message 1: Basic education is fundamental to Tanzania's efforts to speed up economic growth and distribute the benefits of growth widely throughout the society. Basic education is a catalyst that increases the impact of other investments in health, nutrition, family planning, and water.
- Message 2: Women in Tanzania are the primary agents of human capital investment. The litmus test of an effective social investment is whether it improves the ability of women to carry out this task.

Put these two messages together, and three recommendations result:

- Recommendation 1: A renewed commitment in Tanzania to getting every child through primary school and improving the quality of the schooling.
- Recommendation 2: A new commitment to getting a large share of the next generation of girls through secondary school.
- Recommendation 3: That other interventions in health, water, nutrition, and family planning be carefully targeted, and if possible, should support these two initiatives.

No institution or country can do everything. Thus our recommendations are selective and focus on a few key commitments by the public sector to human capital investments whose impacts will ripple through the economy and improve the lives of every Tanzanian.

In order to meet the challenges posed by these recommendations, the Government must solve the problems that inhibit the education sector and have existed in Tanzania for at least a decade. These include under-performance, inequitable subsidy patterns, inefficient production, lack of accountability, inadequate choices for users, poor resource mobilization, insufficient local authority and responsibility. In one way or another, the same problems are faced by the other sectors that are reviewed in this

document. There is no need to wait to act in these other sectors. However, improving access to, and quality of, primary education, and advancing girls farther through the system, are the top priorities, and will require the concerted efforts of the best minds and managers in Tanzania. Simply allowing parents and communities to take greater responsibility for decisions will go far towards improving the management and efficacy of the limited resources that are available.

THE SOCIAL SECTOR REVIEW

The *Tanzania Social Sector Review* is a product of the Government of Tanzania and The World Bank, plus experts and other interested parties from Tanzania, NGOs, and other bilateral and multilateral donors. The process of producing it has been led by a Government Steering Committee and Technical Committee that worked closely with Tanzanian consultants and Bank staff. Consultants and products were managed by The World Bank.

However imperfect, this process has been uniquely successful in advancing the Government's policy process in the social sectors. In late November 1994, the Government prepared a *Social Sector Strategy*, a direct result of the background work underlying this *Review*. The *Strategy* was presented to donors at the Consultative Group Meeting in Paris in March 1995. In addition, Bank staff have been working with the government to develop pilot projects to test new approaches to human capital investment that follow directly from its *Strategy*.

The main purpose of this report is to focus on social sector outcomes (as opposed to inputs to sector ministries) from a human capital investment perspective. Thus the *Review* is oriented to the demand for social services by households, where most decisions affecting the formation of human capital are made. Treating households as the main producers of human capital, rather than as passive consumers of social services provided by sector ministries, provides an opportunity to consider how inputs from social services combine to produce a healthy, knowledgeable, and skilled population. For comprehensive coverage, however, information on the supply of social services is also provided, and the report is organized along sectoral lines. The reader who persists to the end of the document will find an exhaustive review of the education, health, water, nutrition, and family planning sectors.

ECONOMIC GROWTH AND POVERTY

Economic Growth Since 1980

Figure S.1 shows annual growth rates in GDP for the Tanzanian economy since 1980. Since structural adjustment began in 1984, there has been steady positive growth in the economy, with a large surge in the late 1980s and a period

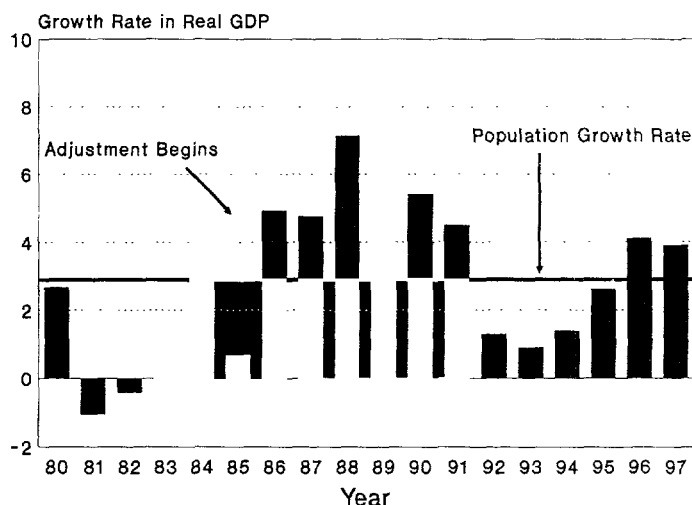


Figure S.1: Tanzania's Record of Growth Since 1980
Source: World Bank Data

of slower growth in the first half of the 1990s. If population growth of about 2.8 percent per year is taken into account, there was substantial improvement in per capita income in the last half of the 1980s, with much slower growth prevailing in the 1990s.

A nationally representative survey conducted for this *Review*, the Tanzania Human Resource Development Survey of 1993/94 (HRDS), asked detailed questions about expenditures to estimate household welfare levels¹. In addition to information on overall household spending, the survey provides estimates of use and spending patterns for health, education, family planning, and water/sanitation services in Tanzania. The survey is used throughout this report to describe household behavior.

Estimates of household expenditures from the survey suggest that income in Tanzania is probably substantially higher than is measured by national accounts. Figure S.2 compares estimated GDP per capita from the national accounts (the left-most bar) with expenditure estimates from the survey (the remaining bars). For the nation as a whole, cash expenditures are about a third higher than GDP estimates. If nonmarket consumption is included, consumption per capita is about double the estimate of GDP per capita². The bars for rural, urban (other than Dar es Salaam), and Dar es Salaam households show the much higher per capita expenditure levels and greater share of cash in expenditures in urban areas.

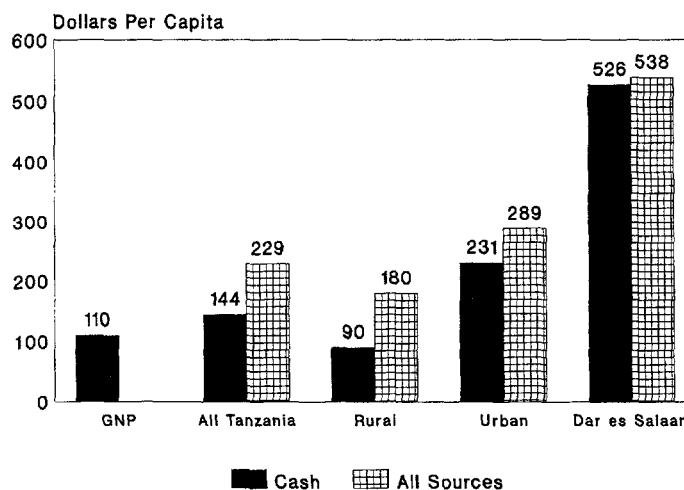


Figure S.2: Estimated Consumption per Capita Compared to GDP Estimate for 1993
Source: HRDS 1993/94

Poverty in Tanzania

The Tanzania Poverty Profile, based on household data from 1991 (it is therefore comparable to the HRDS survey results, not to the GDP estimates), shows that 51 percent of the population had incomes

¹ The survey covered approximately 5,000 households from the National Master Sample and was carried out during late 1993 and early 1994 by the Faculty of Economics at the University of Dar es Salaam, the Planning Commission, and the World Bank. It was financed by The World Bank, ODA, and the Government of Japan.

² In each pair of bars from the survey, the left bar is cash expenditures, and the right bar is cash plus noncash expenditures, including consumption from own production. GDP estimates are adjusted for estimated own-consumption, so the right bar of each pair, which includes cash plus noncash expenditures, is probably more comparable to GDP estimates. As consumption expenditures are only one of the components of GDP (which also includes investment, government expenditures, and exports minus imports), there is little question that the national accounts substantially underestimate per capita GDP.

of less than \$1 per day per person in 1991. Forty-two percent had incomes of less than \$0.75 per day³. The Poverty Profile suggests that poverty in Tanzania is almost exclusively a rural phenomenon. While 59 percent of the population live in rural areas, about 85 percent of the below-\$1-a-day poor, and 90 percent of the below-\$0.75-a-day poor, live in the countryside.

A comparison of the 1991 data with another survey from 1983, just before the first structural adjustment program, shows that the resumption of economic growth over the past decade has substantially improved the lot of the poor in Tanzania. In 1983, 65 percent of the population was living on less than \$1 a day equivalent, compared to 51 percent in 1991, using prices in 1991 for both years. In terms of the lower poverty line of \$0.75 per day, the percent of the population in poverty fell from 51 percent in 1983 to 42 percent in 1991. As a result, there are nearly 2 million fewer people living below \$0.75 per day today than in 1983. If there had been no growth in the economy, population growth alone would have swelled the ranks of the poor from 11 million in 1983 to at least 14 million in 1991. Tanzania's success in poverty reduction through growth is an impressive achievement. In fact, the analysis probably understates the improvement that actually took place (Ferreira, 1994).

There are three problems with this picture of general economic improvement:

- Poverty in Tanzania remains primarily a problem of growth. To say the least, it is disturbing to have 50 percent of the population living on less than \$1 per day, and the only way to change this situation is to accelerate the rate of economic growth far beyond current levels.
- Growth has been accompanied by greater inequality. The really poor — the bottom 10 percent or so of the income distribution — appear to have fallen behind. They need special attention. Income inequality between cities and the countryside, and even within the countryside, has increased. These problems are probably related to the inequitable distribution of human capital and uneven access to markets, rather than to a maldistribution of other productive assets.
- Tanzania missed a golden opportunity during this period of growth to do a much better job in the social sectors. Children who should be in primary school are not enrolled. The gross primary school enrollment rate should be well over 100 by now (it reached nearly 100 percent in 1979-80), but it has dropped to less than 70 percent⁴. The average age of entry to primary school is far too old, 9 years for girls and almost 10 years for boys in 1993. Tanzania's secondary-school enrollment rate is among the lowest in the entire world. The infant mortality rate has hardly changed over the last decade (Figure S.3).

³ These poverty lines are based on income, but they are adjusted for purchasing power parity and family composition (children require less food than adults to sustain themselves, for example). Poverty lines based on consumption, a more reliable measure of welfare, put 51 percent of the population below the equivalent of \$1 per day and 36 percent below the equivalent of \$0.75 per day (World Bank 1993, Tanzania: A Poverty Profile, Report No. 12298, December).

⁴ The gross primary enrollment rate could exceed 100 percent because it is the total number of children in primary school divided by the number of children in the normal primary school age groups.

These problems cannot be solved by increased per capita income alone. But sustained growth in the economy gives Tanzania some breathing room to begin addressing these problems in the social sectors. Solving them will add to the growth potential of the economy and will contribute directly to improved welfare and an improved distribution of income. These concerns are the starting point for this review, and comprise the principal reason for the government's dedication to finding a new approach in social sector development.

HUMAN CAPITAL AND ECONOMIC DEVELOPMENT

For *individuals and households*, it is now clear that there are very high private rates of return to investments in schooling and health. The private internal rate of return to schooling in Sub-Saharan Africa is estimated to be 41 percent to primary, 27 percent to secondary, and 28 percent to higher education. For *countries*, the social rate of return to schooling in Sub-Saharan Africa is estimated to be 24, 18, and 1 percent to primary, secondary, and higher education, respectively. There are few investments that governments or parents could make that could compete with the high returns from primary and secondary schooling.

Much of the success of the "East Asia Miracle" in achieving unprecedented rates of growth over the past three decades has been attributed to heavy investment in primary and secondary education by both households and governments. Those economies reduced poverty at rates of up to 7 percent per year growth in per capita GDP. They employed huge pools of previously underemployed labor and spread the benefits of growth widely throughout society. They allowed people to seek internationally competitive returns to these human capital investments by following export-led growth strategies.

Beyond the direct economic benefits, investment in human capital also improves the welfare of individuals and the society as a whole. Even single inputs, such as education, can create several types of benefits. Table S.1 illustrates what we know about these impacts. It shows social services down the left side and human capital-related outcomes across the column headings. Each cell shows the impacts of social services on outcomes. Only the stronger "cross effects" are shaded. Additional education, for example, increases the ability of couples to space their children optimally, which invariably results in lower birthrates. Education also contributes to improved health, better nutrition, and the ability to take advantage of better water and sewerage services to create more healthful living conditions.

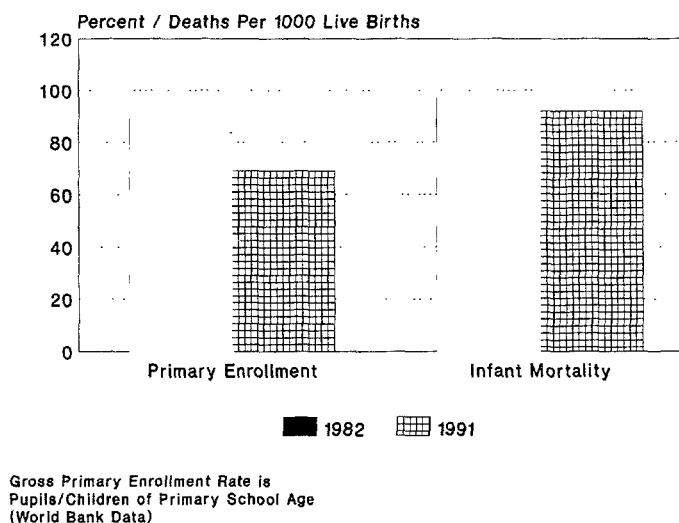


Figure S.3: Reversal in Education Enrollment and Stagnation in Health Indicators

Table S.1: Interactions among Social Sector Investments and Human Capital Outcomes

INPUTS FROM SOCIAL SERVICES	IMPACTS ON HUMAN CAPITAL FORMATION				
	Knowledge	Family Size and Child Quality	Health Status	Nutritional Status	Healthful Living Conditions
Education		+	+	+	+
Family planning			+	+	
Health	+	+			+
Nutrition	+				
Water and Sanitation			+	+	

Note: The strongest cross-sector effects are shaded. The two cells surrounded by heavy lines with no shading indicate high potential for carefully targeted interventions. All of the diagonal cells could be shaded, of course, but in this table only cross-effects are considered.

Source: This is the authors' summary of the general findings of the empirical literature.

Similar cross effects are generated by other social sector services. Family planning investments improve the health of mothers and children. Health investments improve nutritional status because of the link between a high disease burden and nutritional failure. This link works in the other direction as well: improved nutrition raises the body's resistance to disease. A healthier environment resulting from better water and sanitation services can have positive health impacts and are complementary to many other investments, such as education and nutrition. In addition, targeted health and nutrition interventions before and during the primary school years have positive impacts on educational outcomes.

Four messages emerge from this framework. First, *education is the key producer of cross benefits*. It has large impacts across the board for the individual receiving the investment in terms of higher earning potential, cross effects in generating additional human capital investments, and improved welfare for the individual. Second, *education for women has large external or "multiplier" benefits*. Because women bear children and care for them in the crucial early years, but also because of women's traditional role as cultivators in Tanzania, investments in schooling for women have the largest impact in creating additional human capital and in improving living conditions. Third, *targeted health, nutrition, and sanitation investments can have high cross-benefits*, especially for school children. Fourth, *health is the major "user" of cross benefits*. Almost all of the other sectors have strong impacts on improved health outcomes because better health is the result of many different inputs.

Human capital investments provide a stream of returns for their whole lives even if they do not own other property. In fact, human capital is often the only asset the poor and women own. It cannot be sold or stolen from them once they get it. For women, schooling and good health provide a stream of returns not only for themselves but also for their families, and especially for their young children. Because education has strong cross effects, it is possible to get large payoffs across the board by emphasizing primary and secondary education, especially education for girls.

THE TANZANIAN HOUSEHOLD

The production of human capital is managed by the household, especially by mothers, and the money the government spends in the social sectors is absorbed by households in pursuit of their goals. What do Tanzanian households look like? How are they using social services? How much are they spending to accomplish their objectives in human capital formation? How are they using government

subsidies? How do they view the social services available to them? In this section, we start with a few general facts about households.

Household Expenditures

Consumption of purchased and home-produced goods and services in Tanzania is shown in Table S.2 in Tsh and in Table S.3 in US dollars⁵. A high proportion of expenditures for the average household in 1993, about 72 percent, was for food. Health accounted for only 1.9 percent, and education only 1.4 percent, of expenditures. Urban residents and the rich spent a lot more on *health* in both absolute and percentage terms than did the rural poor. However, *education* is different. It accounted for only 1.2 percent of expenditures in both rural areas and Dar es Salaam, but 2.0 percent in other cities.

Although we provide per capita expenditures, we prefer discussing expenditures per adult equivalent, because it standardizes across households by taking into account that children consume less than adults. Household expenditure per adult equivalent was Tsh 172,702 in 1993, or about \$350. The poorest 20 percent of the population had adult equivalent expenditures equal to only 32 percent of this amount, the richest about 210 percent. In short, the poor are extremely poor, and tend to live in rural areas, while the rich are heavily concentrated in Dar es Salaam.

Table S.2: Annual Household Expenditures in 1994/95 (Cash and Consumed Production) in Tanzania (Tsh)

	<i>Rural</i>	<i>Urban^a</i>	<i>DSM</i>	<i>All</i>
Expenditures	664,116	910,905	1,487,092	776,604
Food	76.1%	66.4%	61.1%	71.5%
Health	1.7%	2.2%	2.3%	1.9%
Education	1.2%	2.0%	1.2%	1.4%
Other	21.0%	29.3%	35.4%	25.2%
Per Capita Expenditures	119,425	191,375	356,657	152,063
Per Adult Equivalent	186,917	281,846	523,328	231,421
Poorest 20%	68,378	94,365	187,889	74,048
Richest 20%	366,519	568,451	1,053,901	484,295

^a Urban means cities other than Dar es Salaam (DSM)

Source: HRDS, 1993/94 inflated to 1994/95 levels, World Bank 1997

Table S.3: Annual Household Expenditures (Cash and Consumed Production) in Tanzania, 1993 (US\$)

	<i>Rural</i>	<i>Urban</i>	<i>DSM</i>	<i>All</i>
Expenditures	1,001	1,373	2,242	1,171
Food	762	1,045	1,706	891
Health	17	23	38	20
Education	12	16	27	14
Other	210	288	471	246
Per Capita Expenditures	180	289	538	229
Per Adult Equivalent	282	425	789	349
Poorest 20%	103	142	283	112
Richest 20%	551	857	1,589	730

Note: Exchange rate: Tsh. 495 per dollar

Source: HRDS, 1993/94.

⁵ The population surveyed was ranked by total household expenditures, then divided into five groups, or expenditure quintiles, each representing 20 percent of the national population. The data in Table S.2 and Table S.3 have already been summarized in Figure S.2.

Demographics

All national averages in Tanzania are driven by the characteristics of the rural population (59 percent of the total). For example, the average household in 1993 was composed of about 6 people; 6.3 in rural households, 5.0 in Dar es Salaam, and 5.8 in other cities. The richest households were about one person smaller (5.0) than the average, and the poorest households were about one person larger (7.2).

The head of the household averaged about 44 years of age. The poorest household heads were about 2 years older than the average, and the richest household heads were about 2 years younger. This is the reverse of the typical pattern throughout the world, which is for younger household heads to be poorer. However, poor households in Tanzania do follow world patterns in having more children who are below the age of 15, as compared to the richest households (3.4 versus 2.1 youngsters).

There are fewer men than women in Tanzania, with 0.97 men for every woman. In Dar es Salaam, there are only 0.9 men for every woman. About 15 percent of all households were headed by a woman in 1993/94, but female-headed households were 18 percent of the highest income households and only 13 percent of the poor households, the reverse of what we observe in other countries.

GOVERNMENT SOCIAL SECTOR SPENDING

Domestic Resources

Government spending in the social sectors is widely acknowledged to be inadequate for operating the extensive public network of health facilities, water systems, and schools. The poor performance of the social sectors has not been due to a lack of fiscal effort. The social sector's share of recurrent government spending grew from 24 percent in 1991/92 to 39 percent in 1994/95. However, the Government's approved expenditure estimates indicate that the social sector's share of spending likely dropped back to about 23 percent in 1995/96.

Approximate recurrent spending per capita was US\$4.99 in education, US\$3.43 in health, and US\$3.78 in water⁶. While these amounts may look small, they are high for eastern Africa. In education, Tanzania's recurrent spending in 1990 was estimated to be 5.8 percent of GNP, compared to 4.9 percent in Ethiopia, 6.8 percent in Kenya, and 2.9 percent in Uganda. In health, Tanzania's recurrent government spending on health accounts for 2.4 percent of GDP in 1993/94, compared to 0.9 percent in Eritrea, 1.9 percent in Ethiopia, 1.3 percent in

Table S.4: Total Government Budget Estimates, 1994/95

	<i>Actual Expenditures (Tsh billion)</i>	<i>Share of Recurrent Expenditures (%)</i>
Gross Recurrent Expenditures	372.7	100
Social Sectors	149.7	39
Education	83.0	22
Health	57.0	15
Water	5.4	1
Other	4.3	1
Development Expenditures	20.0	
Total Expenditures	392.7	

Source: Follmer and Kessy, 1996; World Bank, 1997.

⁶ These figures are based on an exchange rate of Tsh 575 per dollar and an estimated population of 28.9 million. The health and education figures were taken from Follmer and Kessy (1996). The water figure was estimated by inflating data from World Bank (1994a) to 1995 levels.

Kenya, and 0.6 percent in Uganda.

Further proof of Tanzania's high level of commitment to the social sectors is growth in the number of civil service personnel devoted to health and education (Figure S.4). In fact, in education during the 1980s, enrollments declined as the supply of teachers continued to expand. During the period of civil service reform during the 1990s, service providers in education and health were exempted. Notwithstanding this high degree of commitment, three characteristics of the social sectors have severely distorted the budget and the distribution of benefits from that budget, including a huge social infrastructure, a large civil service to operate it, and a commitment to provide comprehensive services free to every citizen.

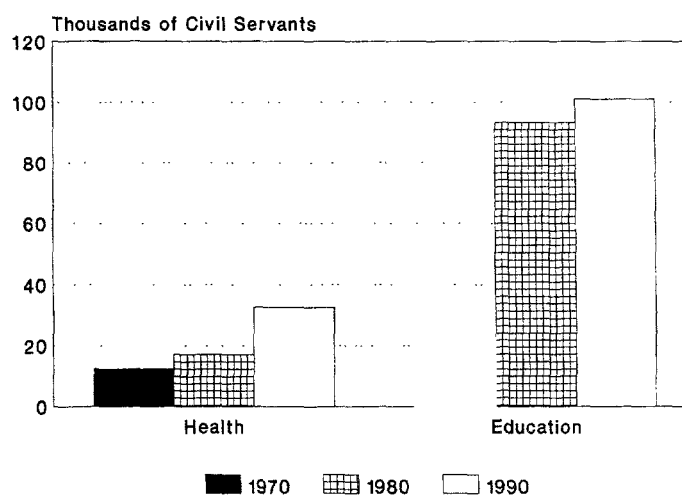


Figure S.4: Growth in Civil Service Personnel in Health and Education
Source: See Tables 2.1 and 2.2.

Salary and examination expenditures dominate the recurrent social sector budget. The government currently allocates Tsh 13,100 (about \$22.80) per primary school student (including donor supplements). This expenditure pays for little more than Tsh 8,842 (\$15.38) for salaries and emoluments, Tsh 3,353 (\$5.83) for primary school exams, materials, and a handful of other non-instructional items. Furthermore, our investigation in 8 districts suggests that only about 68 percent of allocated funds actually get to the primary schools for instruction. In health, at the health center and dispensary level, personal emoluments absorb about 67 percent of government recurrent spending.⁷

Because of the government's commitment to a comprehensive system, high-cost institutions absorb a very large share of spending. In education, thousands of primary schools absorb 58 percent of the budget, while a handful of technical schools and colleges absorb 23 percent of the budget. Throughout the 1990's, primary and university spending has increased as a share of total education expenditures while secondary school's share of the budget has declined. In health, about 1,500 dispensaries and health centers consume 31 percent of the recurrent budget, compared to 59 percent consumed by fewer than 100 referral, regional, and district hospitals. Over the course of the 1990's, funding to health centers has steadily increased as a share of the health budget, and despite a slight dip in 1995, is projected to continue to do so. Regional and district hospitals' share of spending has dropped considerably.

The high-cost colleges and hospitals are not lavishly funded institutions. They are run on a

⁷ Figures for health and education spending are based on Follmer and Kessy (1996). Figures for water spending are based on World Bank (1997).

shoestring. But the resulting distortion in the allocation of resources to low-return investments is extraordinary. In education, for example, the government and donors together annually spend (apart from the Tsh 13,100 (US\$23) per primary student discussed above), Tsh 95,300 (US\$165.74) per secondary student and Tsh 3,324,200 (US\$5,781) per college student. Given the high social rate of return to primary school investment, each shilling of subsidy transferred from a college student to a primary school student by the government would generate a 23 percent greater return. In health, the internal rate of return to expensive curative interventions provided principally by hospitals is estimated at -21 percent. Each shilling transferred from these services to community interventions to reduce malaria, for example, would increase the rate of return by 32 percent, to a positive rate of 11 percent.

Finally, the government is inefficient as a provider of these services. The average unit costs (recurrent only) in public secondary schools were estimated at Tsh 73,000 per year in 1992, and Tsh 60,000 in private institutions. Yet a study based on data from 1981 found that a private secondary-school student would be expected to perform 16 percent better on mathematics and verbal examinations than would a public secondary-school student with comparable family background. In short, the same amount of learning in private schools was found to cost only 59 percent of the cost in public schools.

Donor Spending

Net official development assistance in recent years has comprised approximately 40 percent of Tanzania's GDP. In 1991, external assistance represented about US\$43 on a per capita basis, making Tanzania one of the world's most dependent countries.

In 1994/95, donors funded about 5 percent of all government expenditures in education, 13 percent of expenditures in health, and 48 percent of expenditures in water and sanitation. In education, however, only 41 percent of external assistance is devoted to primary education. In health, donors do better. Approximately 70 percent of the donor supplement goes to preventive services and 30 percent to curative services, principally to basic services delivered in dispensaries and health centers⁸.

Summary

Overall, the expenditure statistics paint a bleak picture of a public system that is far more extensive than the budget can fund under almost any reasonable scenario. Despite the government's emphasis on basic education and health services, their allocations to comprehensive, highly subsidized services result in actual expenditures that have a different emphasis. High-cost institutions crowd out low-cost basic services. High personnel costs crowd out all other inputs, so that basic education and health services function poorly. In both sectors, substantial claims on the budget are made by activities with very low investment payoffs to the economy. Donors supplement domestic spending in a fairly positive way in health, but they distort education spending away from primary education.

Spending more money alone will not solve the budgetary problems in these sectors, as spending is already high for such a poor country. Even if social sector spending were doubled to 78 percent of the government's recurrent budget, which is impossible, this would not be enough money to adequately fund

⁸ Figures for health and education spending are based on Follmer and Kessy (1996). Figures for water spending are based on World Bank (1997).

everything the government has promised to do or to adequately fund the system that now exists. In education, for example, doubling the public expenditure per primary student would have a large impact, but it would only return real spending per student to the level reached in 1970. It would still be only about one-half of what Kenya spends per student. Moreover, because the real salaries of teachers in 1990 was the same as in 1980, and their salaries are among the lowest in Africa, it is likely that doubling spending would not result in a substantially improved mix of inputs. Higher spending would not eliminate the need for rationalization of social sector spending and for greater selectivity. The government is spread too thin, and as a result, the budget does not reflect its stated priorities.

EXPENDITURES IN THE SOCIAL SECTORS

Table S.5 summarizes the overall picture for social sector spending by showing estimates for total spending on education, health, and water from all sources for 1994/95. Almost all household spending in this table is cash, rather than in-kind. Tanzania was devoting about 5 percent of GDP to both education and health, and about 1 percent to water. The water data does not include the imputed cost of labor required for fetching water, which would dwarf all other expenditures in the table. Government was providing about 70 percent of the current cost of education, 51 percent of the cost of health care, and nearly 40 percent of the cash cost of water. Donors contributed from 4 to 34 percent of funds to each sector, favoring water over health and education in terms of their share of total sector spending. Households provided 30 percent of the cash costs of water, 26 percent of education costs, and 42 percent of health costs directly out of their pockets.

Households devote about 68 percent of their education expenditures to primary schooling and 32 percent to secondary schooling. They spend very little for higher levels of education because those levels are most heavily subsidized and because few households are able to take advantage of those opportunities. Virtually all household expenditures on health are for acute care for simple health problems. The exact nature of household spending will be explored in more detail in the next several sections, but the important points to bear in

Table S.5: Total Expenditures on the Social Sectors from All Sources, 1994/95

	<i>Expenditures (Tsh billion)</i>	<i>Percent of GDP</i>	<i>Percent of Sector Expenditures</i>
Education			
Total	120.510	5.3	100
Government	84.350	3.7	70
Household	31.209	1.4	26
Donor	4.952	0.2	4
Health			
Total	114.764	5.0	100
Government	58.579	2.6	51
Household	47.803	2.1	42
Donor	8.382	0.4	7
Water			
Total	18.651	0.8	100
Government	6.787	0.3	36
Household	5.556	0.2	30
Donor	6.308	0.3	34
Total			
Total	253.925	11.1	100
Government	149.715	6.6	59
Household	84.567	3.7	33
Donor	19.642	0.9	8

Source: Government and donor health and education data from Follmer and Kessy, 1996; household data estimated from HRDS (1993/94) and inflated to 1995 levels; water data from World Bank (1997).

mind are that (a) households contribute a substantial share of resources, even in this heavily subsidized system, for all types of social services; (b) households have their priorities right — they are making high return investments in basic education and health care; and (c) as the system is currently structured, they have very little voice in how their contributions, both out-of-pocket and government subsidies, are channeled. Thus they have little opportunity to influence the productive efficiency or quality of the social services that they consume.

WHO BENEFITS FROM GOVERNMENT AND DONOR SUBSIDIES?

Table S.6 presents the distribution of benefits from public spending in Tanzania's social sectors. These estimates are derived from household expenditure patterns for social services, plus total government and donor expenditures for each type of government service. If benefits were distributed equally, each quintile would receive a 20 percent share of each row item⁹.

Education. The benefits of primary education expenditures are fairly evenly distributed across expenditure groups, but the upper two

quintiles capture 60 percent of secondary school, and 100 percent of university subsidies¹⁰. The overall incidence of subsidies for education is consequently quite skewed toward the rich, as the highest expenditure quintile captures almost 40 percent of government spending, and the lowest only 14 percent. For the middle three groups, however, the distribution is fairly equal.

Health. The benefits of health services are also skewed to the highest expenditure quintile, but not as much as for education. This is partly due to the fairly equitable distribution of health center and dispensary subsidies, and the fact that the rich can opt out of the government system and pay for mission or private-sector services. They typically do not have that option in education because of the government monopoly at the primary and university levels. The highest quintile does, however, capture the largest share of the overall health budget, principally because it is the heaviest user of expensive hospital services.

Table S.6: Distribution of Benefits of Social Sector Expenditures, by Sector, Recurrent and Development Budgets by Expenditure Quintile, FY93/94

	Lowest 1	<<< 2	Quintile 3	>>> 4	Highest 5
<i>Education</i>					
Primary	19	22	21	20	18
Secondary	8	14	17	24	36
University	0	0	0	0	100
Overall	14	16	16	17	38
<i>Health</i>					
Preventive	20	20	20	20	20
Health Center/Dispensary	19	27	18	18	19
Hospital	16	16	15	20	34
Overall	17	21	16	19	27
<i>Water</i>					
	11	11	15	23	41
<i>Total for Social Sectors</i>	15	18	16	17	34

Source: HRDS, 1993/94; World Bank, 1994a.

⁹ In making these estimates, we were conservative in the sense that we tried rounding off so as to make the distribution look more equal rather than less equal.

¹⁰ The university line is based on a sample of only a few people.

Water Subsidies. The distribution of public subsidies for water is highly skewed toward the rich because prices for water are among the most highly subsidized in the world. Most access comes through the municipal water systems in Dar es Salaam, Arusha, and other secondary cities where the bulk of the higher-income population lives. As a result, the lowest expenditure quintile receives only about 11 percent of the subsidy placed on water, while the highest quintile receives 41 percent of the subsidy.¹¹

Overall. The health sector performs relatively well in distributing its expenditures evenly across the population, while the education and water sectors appear increasingly distorted in favor of the rich. The result is a distribution of benefits overall that leaves the poorer 60 percent of the population with 49 percent of the benefits, and the top 40 percent of the population with 51 percent of the benefits. The highest expenditure quintile alone captures 34 percent of all subsidies, principally through education and water. The main reason for the skewed result at the upper level is the ability of the urban high-income population to capture the more expensive public subsidies that come through urban-based facilities – hospitals, universities, water systems, and secondary schools.

In short, the government's scarce resources are targeted disproportionately to the richest segment of the population. Donors improve the distribution of benefits in health, but worsen it in education and water. Achieving an even distribution of subsidies, 20 percent to each quintile, would be one way to improve the current system. That could be accomplished by leaving the system as it stands and adding new resources to basic services in education, health, and rural water. But skewing the distribution toward the poor would be more in line with government policies. That could be achieved by increasing resources at the lower levels, plus moving resources from the upper levels to the lower levels of the system, either through reallocation or charging user fees in the more expensive parts of the systems (hospitals and the university). The government has begun to do just that.

Improving equity in the distribution of benefits also improves the efficiency of the system. Using the earlier example, moving a shilling from university education to primary education increases the rate of return by 23 percent. It also increases the likelihood that the shilling will be captured by a poor household. We estimate that in health, a reform package that raises spending by \$1 per capita and redistributes it to cost-effective community and preventive interventions would eliminate 12 percent of life years currently lost, and would tilt the distribution of subsidies toward the poor (World Bank, 1995b).

The next sections discuss major issues in each social sector covered by the *Review*. The emphasis is on household use, expenditure patterns, and outcomes.

¹¹ Water figures for 1994/95 were not available. Estimates of the distribution of benefits for health and education in 1994/95 were calculated based on the 1994/95 division of expenditures across subsectors assuming that each quintile's share of subsector benefits had not changed. For example, assuming that the distribution of benefits across quintiles for primary school, secondary school, and university had not changed, the distribution of total education benefits was recalculated using the 1994/95 distribution of expenditures across levels of education. Using this approach, it is estimated that the lowest expenditure quintile received 13 percent of education expenditures in 1994/95, the second lowest 16 percent, the middle quintile 15 percent, the second highest 15 percent, and the highest 41 percent of the benefits. Thus, the highest expenditure quintile appears to have increased their share of total education benefits. Using this same technique to estimate the distribution of health expenditures, the lowest quintile received approximately 17 percent of health spending in 1994/95, the second lowest 19 percent, the middle quintile 16 percent, the second highest 19 percent, and the highest quintile of the population 28 percent. Thus, the distribution of health benefits appears not to have changed from the previous year.

EDUCATION

Primary School Enrollment

In the household survey, we found that most children are attending school between the ages of 10 and 14. Between ages 7 and 9, only 32 percent of the children are in school, between ages 10 and 14, 82 percent, and between ages 15 and 19, attendance drops to 36 percent. In each age group, the poor are least likely to attend. Of those children starting school in 1993, the average age was 9.8 and 9.0 for boys and girls, respectively, and with little variation across income groups. Ninety-nine percent of children attend government schools. Approximately equal numbers of boys and girls are in primary school.

Expenditures on Primary Education

On average, Tanzanian families spend Tsh 5,148 per pupil in primary school. Rural households spend the least (Tsh 3,950 per pupil) and households in Dar es Salaam spend the most (Tsh 13,368 per pupil). Per-pupil expenditures vary across the welfare distribution as one might expect, with wealthier households paying about 3 to 4 times as much per student as poorer households. As shown in Table S.7, for example, a very poor household in a rural area spends Tsh 2,663 per student per year, while a wealthy rural household spends an estimated Tsh 7,295 per student.

Public spending of about US\$22.78 per primary student is allocated almost entirely to teachers' salaries and emoluments. Parents add Tsh 5,123 (US\$8.91) to this amount for a total of about Tsh 18,223 (US\$31.69). It is hard to detect, however, what they get for this money in terms of schooling for their children. Fifty percent of the parents' contribution goes for uniforms. Another 19 percent goes for fees and other assessments, for which there is little or no accountability. The school fee, essentially a sales tax on primary education, accrues to the district, where it is lost in the pool of general revenue. The final 20 percent of parents' expenditure is for school

Table S.7: Estimated Household Expenditures per Student Enrolled in Primary School, 1995 (Tsh)

Residence	Lowest Expenditure Quintile	Highest Expenditure Quintile	All
Dar es Salaam	8,916	27,639	13,368
Other Urban	3,926	14,408	7,314
Rural	2,663	7,295	3,950
All	2,692	10,973	5,148

Source: HRDS, 1993/94, inflated to 1995 levels.

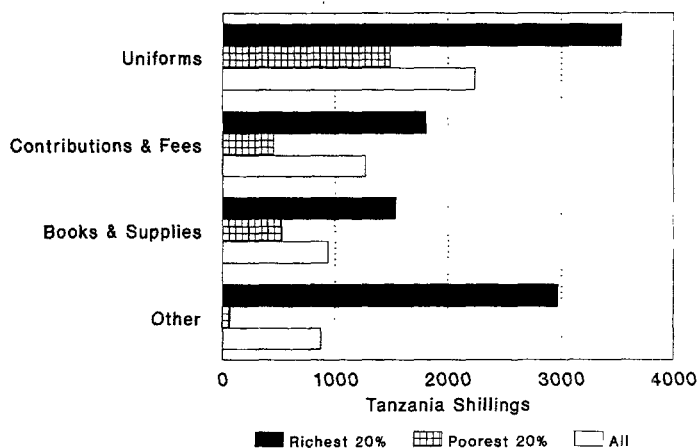


Figure S.5: Components of Per Student Primary Expenditures
Source: HRDS 1993/94

supplies. For the poor, these three categories account for 99 percent of spending, but for the rich, they account for 74 percent. The rich are able to add an additional amount on tutors and other expenses (such as clubs, extracurricular activities, pocket money, and so on). The relative size of these components can be seen in Figure S.5.

Thus, Tanzania has a primary school system of teachers and students, and not much more. The teacher is paid by the central government, and is often no more than a primary-school leaver with a little extra in-service training. Government and parents add a bit over Tsh 1,100 in school supplies. The school facilities are run down, since nearly nothing is spent on maintenance. There are 5 students per desk, the average teacher does not have a chair and a desk, and children typically eat little or no food all day. It is illegal for a child to own a textbook, yet the government cannot get textbooks to the schools.

For whatever reason, primary schooling in Tanzania is characterized by a long-term declining enrollment rate with quite late entry and early exit. Virtually everyone attends a government school. Tanzania has achieved parity at the primary level for boys and girls. Some of the richer parents are using tutors to supplement the schooling of their primary-age children. The problems of how to get more children, especially girls, into school earlier, and how to make schools more effective, are of paramount importance.

Consumers' Evaluation of Primary Education Services

The household survey asked respondents to rank characteristics of primary schools according to their importance to the household and to evaluate the closest government primary school relative to the same characteristics. Table S.8 contains descriptive statistics on these rankings. Parents agree that the quality of personnel is important, and they rate the quality of personnel as relatively good, with only 14 to 21 percent of the sample thinking that the teachers are either poor or very poor¹². Parents consider school supplies to be as important as teachers in the evaluation of schools. The foregoing evidence shows that these items have been squeezed out of the government budget by salaries.

Table S.8: Households' Priorities and Perceptions of Government Primary Schools

<i>Primary School Characteristic</i>	<i>Ranking^a</i>	<i>Percent Very Poor or Poor</i>	<i>Percent Good or Very Good</i>
Quality of Teachers	5.0	21	33
Adequate Supplies	4.9	49	13
Quality of Headmaster	3.8	14	49
Physical Infrastructure	3.3	44	16
Self Reliance Work	3.0	19	30
<i>Primary School Curriculum:</i>			
Math and Science	4.2	21	22
English	4.1	39	16
Kiswahili	3.7	12	35
Good Behavior	3.4	27	19

^a The ranking can range from 0 to 20. This column shows the average across the national sample.

Source: HRDS, 1993/94.

¹² The household survey responses are much more favorable towards personnel than responses derived from qualitative studies. Typically, focus-group respondents vehemently complain about the lack of conscientiousness and integrity of the teaching staff in local primary schools. Focus groups conducted for this Review found that the most prevalent complaints raised by parents were about personnel when asked about problems with primary schools in eight districts.

Forty-nine percent of households say that school supplies are either poor or very poor. Parents indicate that math, science, and English are the highest priorities in the curriculum. On English, though, 39 percent rate the schools as either poor or very poor.

Willingness to Pay for Primary Schools

Figure S.6 shows how much respondents were willing to pay for a primary school that delivered the types of services they thought were important. The average amount the whole sample would be willing to pay for one student for one year is Tsh 11,486, a few thousand shillings more than the current average household expenditures per primary student. About 18 percent of the respondents indicate that they would pay nothing. About 31 percent of the sample would pay Tsh 1,340 to 4,020 for all school costs, another 31 percent would pay between Tsh 6,700 and 17,420, and a full 22 percent would pay over Tsh 26,800, with most of those over Tsh 33,500.

That a fifth of the sample gives a response higher than the maximum asked in the survey is surprising because the assumption of such questionnaires is that we are getting *lower bound* responses on willingness to pay, as households sensibly make offers lower than what they would actually pay.

In the context of the willingness-to-pay questions, we should address the issue of cost recovery from users. If there is any expansion of the quantity or quality of services, the government will have to pay attention to how the improvements are financed, including the roles of both government and households in footing the bill. Households pay the bill whether through taxes or direct payments, so cost sharing in this context is really a question of clarifying who benefits and who pays.

These responses also tell us a lot about how households might react to very costly investments in specific characteristics such as the physical condition of school buildings. It is clear that parents value the inputs that make schools work, namely teachers and supplies. They want to see the schools teach basic numeracy and literacy, plus English. They do not think the schools perform very well in most of these areas, but they would highly value, and would be willing to contribute more to, schools that provide these services adequately.

Secondary Education

Very few Tanzanian children have the opportunity to attend a secondary school, whether government or private (only 7 percent of children entering Standard I make it through to Form I, or eighth

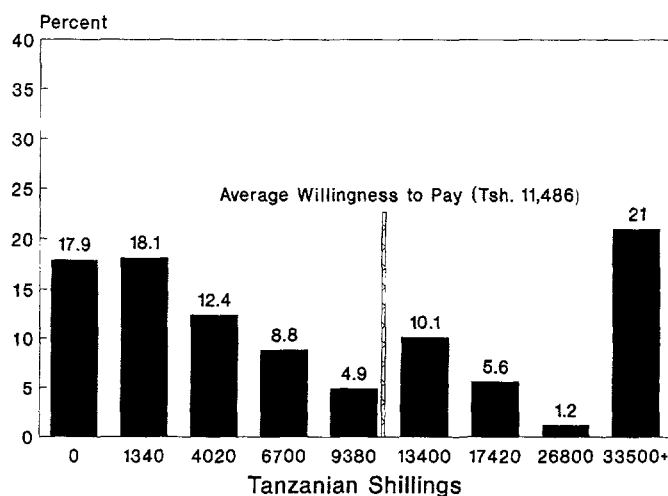


Figure S.6: Willingness to Pay All Costs, One Year, for Primary School
Source: HRDS 1993/94

grade). In the whole of Tanzania, there were only about 176,000 secondary students in 1992¹³. Of those in the survey attending secondary school in 1993/94, 39 percent attended a government school, 17 percent a church-related school, 32 percent a private secular school, and 12 percent a community school. The rich dominated all types of secondary schools except community schools, where 11 percent of the students were from the poorest households and 9 percent came from the richest. The rest came from the middle three expenditure groups. About one-half of the students were in boarding school, the remainder in day school, and there was virtually no difference across the sexes.

Gender is an important concern at the secondary level. The gender ratio of secondary students for the whole country is fairly even, at 46 percent girls and 54 percent boys. While there is near-gender parity in enrollments at entry into government secondary schools, girls are far less likely than boys to continue on to upper secondary school (Forms V and VI). They enter secondary school at a deficit, since the cut-off point for girls' selection into government secondary school is approximately 10 points lower than for boys. As a result, they do worse during secondary school and are more likely to drop out. In upper secondary schools, only about 25 percent of the students are female. The top 10 ranking schools in the national Form IV examinations in 1992 were all-male seminaries. Out of the total enrollment in the 30 top-performing schools on Form IV exams, only 17 percent of the students are female. At the university, only 13 percent of students were female in 1990, compared to 18 percent in 1980.

Expenditures on Secondary School

Parents with children in secondary school spent an average of Tsh 55,527 (US\$97) per student in 1994/95. In rural areas, a poor household with a child in secondary school pays somewhat less per student than the richest households (Tsh 45,058 and 59,977, respectively). However, the urban poor spend much less than the rural poor, and they spend only one-half to one-fourth of what the rich spend (see Table S.9).

Table S.9: Average Household Expenditures per Student Enrolled in Secondary School per Year, by Expenditure Quintile, 1994/95 (Tsh)

<i>Residence</i>	<i>Lowest Expenditure Quintile</i>	<i>Highest Expenditure Quintile</i>	<i>All</i>
Dar es Salaam	35,803	117,140	65,901
Other Urban	35,412	77,985	55,867
Rural	45,058	59,977	53,650
All	38,039	71,902	55,527

Source: HRDS, 1993/94, inflated to 1994/95 levels.

About 36 percent of household expenditures on secondary school are for fees and contributions. Transportation and boarding costs account for 28 percent of expenditures. Sixteen percent of expenditures are for uniforms, 13 percent for books and supplies, and 7 percent for miscellaneous costs (Mason and Khandker, 1997).

¹³ There were approximately 2,338,560 children aged 14-17, the age that typically attends Forms I-IV, and another 1,088,640 aged 18-19, the age of children in Forms V and VI. Thus, 176,000 students represent only 5 percent of the total number eligible for all 6 levels of secondary school.

Summary

Entry to secondary school in Tanzania has historically been rationed in the interest of manpower planning, to avoid producing more students than could be absorbed by the public sector, and to increase equality of opportunity in the population. Thanks to the law of unintended consequences, this policy has had many negative effects on human capital formation. Tanzania has succeeded in producing so few secondary students that it shares with Malawi the distinction of having the lowest secondary-school gross enrollment rate in the world. Comparisons with almost any other country are alarming. Uganda, despite being racked by civil violence for almost two decades and spending only a fraction as much on education, raised its gross secondary enrollment rate from 3.7 percent in 1970 to 13.0 percent in 1992¹⁴. Over the same period, Tanzania's rate rose from 2.7 to 5.0 percent. Rationing has deprived the country of a huge stock of human capital, channeled public subsidies for secondary school to the rich, and distorted its income distribution (World Bank, 1994b). The failure to get girls through secondary school has reduced the impact of other costly investments Tanzania has made in health, nutrition, family planning, water, and sanitation.

The de facto liberalization of secondary schooling in 1986 has begun to relieve this constraint. Up to 1985, the gross secondary enrollment rate was 3.3 percent, and it did not rise to 4.7 percent until after private schools started opening for business. The supply response to this change in policy has been incredible, despite continuing price controls on secondary-school fees, taxation of fees, absorption of the best students by government schools, and other roadblocks put in the way of private schools. The public sector now enrolls less than one-half of all secondary students. The change is due not to a decline in the number of spaces in public sector schools but to growth in private non-public secondary schools. The high expenditures of the rural poor for the few places they are able to capture in secondary schools is surprising, and is an indicator of the importance they attach to education as a way out of poverty. It will take many years, however, for Tanzania to recover from its original decision to ration education.

HEALTH

Burden of Disease and Health Spending

Table S.10 shows the top ten causes of mortality in Tanzania and eastern Africa (Eritrea, Ethiopia, Kenya, Tanzania, and Uganda).¹⁵ These ten diseases alone account for nearly 77 percent of the life years lost annually in Tanzania. The mortality profile of Tanzania is similar to that of the region, although malaria and AIDS are more serious problems in Tanzania, and diseases among children under 5 and pregnant women account for a much smaller share of total life years lost in Tanzania relative to the other countries in the region. Cardiovascular disease and injury are gaining slightly in importance.

¹⁴ In purchasing power parity equivalents, Uganda spent US\$148.9 million on education in 1970, US\$39.1 million in 1980, and US\$106.3 million in 1985. Tanzania spent US\$392.6, US\$439.5, and US\$386.6 million in each of those years (International Institute for Educational Planning, 1994; World Bank, 1995a).

¹⁵ This section is based on information from World Bank 1995 "Health Policy in Eastern Africa: A Structured Approach to Resource Allocation," Report No. 14040 AFR, March 14.

This success is not accidental, as Tanzania has devoted considerable resources over the past two decades to providing basic health services through the public sector. Table S.11 shows this in absolute terms for FY1993/94. The table includes spending from all sources, including households, government, and donors. Because of the high labor element in health care costs, and to compare expenditures across countries, this table converts half of expenditures to the purchasing power parity equivalent in dollars. Tanzania spends more per capita than Eritrea, Ethiopia, and Kenya, and about double the amount per capita recommended by *The World Development Report 1993* (WDR). It distributes the expenditures across intervention categories in nearly the same proportion as recommended by the WDR. Thus its relatively good performance in the health sector can be explained partially by its high spending and effective allocations of expenditures. However, much of the spending on community and preventive interventions is driven by donors.

The relative position of the government's own health sector budget is shown in Table S.12. Tanzania's recurrent budget is skewed toward curative services, and close to the regional average. Tanzania has used high total spending to "buy down" avoidable mortality due to childhood diseases. However, the most effective spending in this regard is being provided by donors. While this role is a common one for donors to play, it leaves Tanzania and the region dependent on outside funds for its high-impact health care spending.

Perhaps more importantly, Tanzania appears to have a very inefficient system. With a lower overall level of spending and about the same

Table S.10: Eastern Africa Regional Comparison of Burden of Disease, 1993

Cause of Death	Percent of Life Years Lost	
	Tanzania	Eastern Africa
Perinatal/Maternal	22.9	23.3
Malaria	18.2	9.8
Diarrhea	7.5	12.7
AIDS	6.0	4.7
Injury	5.9	2.3
Pneumonia	5.7	11.7
Tuberculosis	4.8	4.2
Cardiovascular	3.5	2.4
Measles	1.0	2.3
Protein-Calorie Malnutrition	0.9	3.3
Total Target Causes	76.5	76.9
All Other Causes	23.5	23.1
Total	100.0	100.0
Diseases of Children < 5 and pregnant women	38.0	53.4

Source: Ravicz 1996

Table S.11: Purchasing Power Parity Adjusted Per Capita Health Care Expenditures, by Type of Intervention

Country	Purchasing Power Parity Adjusted US\$ Per Capita			
	Community	Preventive	Curative	Total
Eritrea	0.17	0.85	7.27	8.28
Ethiopia	0.33	1.01	4.97	6.31
Kenya	1.41	4.44	15.13	20.98
Tanzania	2.63	7.92	14.02	24.58
Uganda	5.70	5.89	21.72	33.31

Note: This table adjusts one-half of the expenditure by the PPP adjustment factor for that country.

Source: Ravicz, 1996

Table S.12: Government Health Care Expenditures, by Type of Intervention

Country	Share of Total Government Expenditures			
	Community	Preventive	Curative	Total
Eritrea	1.3	8.3	90.4	100.0
Ethiopia	8.5	13.0	78.5	100.0
Kenya	7.9	15.5	76.6	100.0
Tanzania	6.7	15.4	77.9	100.0
Uganda ¹	13.4	24.5	62.1	100.0
E. Africa	8.1	15.3	76.6	100.0

¹ Note that if water expenditures were omitted from the Ugandan data, the Community share of total government spending would decline from 13 percent to 10 percent.

Source: Ravicz, 1996

pattern of government allocations, Kenya is able to achieve 8 years' longer life expectancy, over a third lower infant mortality rate, over a third lower child mortality rate, and a total fertility rate that is an average of one child lower. Table S.13 shows the results of a simulation of how each country in the region would fare

if part of the government budget were reallocated and an additional exogenous infusion of US\$2 per capita were spent by the government on the most effective community and

Table S.13: Simulated Impact of Reallocation and Spending Increase on Under-Five Mortality Rate

	<i>East Africa</i>	<i>Eritrea</i>	<i>Ethiopia</i>	<i>Kenya</i>	<i>Tanzania</i>	<i>Uganda</i>
Current Under-5 Mortality Rate per 1,000	172	203	205	102	148	205
Percent Reduction with Reallocation and Additional \$2 Per Capita Spending	40	38	37	82	14	44
Post-Reform Under-5 Mortality Rate per 1,000	104	125	130	19	127	116

Source: Ravicz, 1996.

preventive interventions. If we ignore Kenya and just compare Tanzania with other east African countries, Tanzania achieves only a 14 percent reduction in under-five mortality. With this small additional expenditure, the other countries meet or exceed Tanzania's child mortality rate. Why? Because there are a dearth of cost effective interventions in Tanzania relative to the other countries. The system is relatively ineffective in producing the desired outcomes, even with reallocations and additional spending.¹⁶

Based on the results, Tanzania should pay attention to increasing the impact of the health system. The health system is consuming a large volume of resources relative to other countries in the region and relative to what it is able to produce. The remainder of the health section reviews how households interact with the system.

Illness and Use of Health Services

About 15 percent of Tanzanians reported being ill or injured during the month prior to the HRDS survey, and two-thirds of those sought care. In a pattern seen in many countries, individuals in the poorest 20 percent of households were about half as likely as the richest 20 percent to report being sick (11 versus 21 percent), and were less likely to seek care if sick (57 versus 74 percent).

¹⁶ An extra US\$5 is added per capita in Kenya in this simulation because of the high rate of return to the additional investment there.

The government system is the most important source of care for the poor by far (Table S.14). Approximately 70 percent of sick individuals in the poorest 20 percent of households who sought care first went to a government facility, compared to 46 percent of the richest 20 percent. About 36 percent of the richest households seek nongovernment, non-voluntary agency, private-sector care.

Despite the fact that the government operates about half (52 percent) of the hospital beds in Tanzania, government hospitals are used by only about one-third (35 percent) of those who reported being admitted for at least one night (Table S.15). Better-off individuals are more likely than the poor to use government hospitals for both outpatient and inpatient services, which accounts for why they are able to capture such a large share of the government's subsidy at this level of health care.

Health Expenditures

On average, Tanzanians spent Tsh 1,118 per short-illness episode when health care was sought (Table S.16). Rural households spent more than urban ones for care at a hospital, but substantially less for care at a health center or dispensary, principally because of high rural transport costs.

Table S.17 shows expenditure per visit by type of provider and welfare quintile. The poorest group pays about one-third what the richest group spends on a visit overall, but the patterns are not consistent. In the government system, the poor pay much less at the dispensary level, but they pay more than the rich for services at government health centers and hospitals. The rich pay significantly more for

Table S.14: First Source of Curative Outpatient Care, by Expenditure Quintile (%)

<i>Source of Care</i>	<i>Lowest Expenditure Quintile</i>	<i>Highest Expenditure Quintile</i>	<i>All</i>
Government Hospital	15	20	17
Voluntary Agency / Private Hospital	5	9	6
Government Health Center or Dispensary	55	26	40
Voluntary Agency Health Center or Dispensary	10	9	10
Private Health Center or Dispensary	6	24	14
Other (traditional and pharmacy)	9	12	13

Source: HRDS, 1993/94.

Table S.15: Use of Inpatient Services, by Welfare Level (%)

<i>Source of Care</i>	<i>Lowest Expenditure Quintile</i>	<i>Highest Expenditure Quintile</i>	<i>All</i>
Government Hospital	35	44	35
Other	65	56	65

Table S.16: Expenditures per Illness Episode Among Those Seeking Care, by Residence in 1994/95 (Tsh)

	<i>Dar es Salaam</i>	<i>Other Urban</i>	<i>Rural</i>	<i>All</i>
Hospital	2,897	1,404	4,332	2,751
Health Center	2,856	784	531	663
Dispensary	2,458	1,596	741	1,009
Other	1,337	2,291	1,395	1,715
All	2,641	1,495	1,361	1,498

Source: HRDS, 1993/94, inflated to 1994/95 levels.

non-governmental services at each level.¹⁷

Figure S.7 shows the distribution of expenditures among visits, drugs, and transportation for the lowest and highest expenditure quintiles. The main reason for much higher spending overall by the rich is that they spend about 8 times more on drugs than do the poor. For visit costs, the poor are spending about half as much as the rich, but for transportation, expenditures are similar for both groups. The poor pay more for transport than for any other expense item.

Use of health services in Tanzania is quite high by international standards among the rich and poor alike. The rich are more likely than the poor to perceive themselves as sick and to seek care from expensive public institutions like hospitals. In data not reported here, very high percentages of women seek prenatal care, primarily from the government. These are major accomplishments of the health system. Yet the impact on health statistics, such as infant mortality, has been small, which suggests that despite a good record of deploying medical resources, some of the other inputs to good health in Table S.1 may not have been available in adequate quantities (especially higher levels of female education and investments in effective preventive health programs).

Consumers' Evaluation of Health Services

The household survey asked respondents to rank characteristics of an ideal dispensary or health center according to their importance to the household, then to evaluate the closest government health center/dispensary relative to the same characteristics. Table S.18 contains descriptive statistics on these rankings. By far the highest priorities are availability of drugs and quality of personnel. The most important item, adequate drugs, is the one that respondents think the government performs worst in delivering (63 percent rated the system as poor or very poor). The least important items to households

Table S.17: Expenditures per Visit, by Type of Provider and Expenditure Quintile, 1994/95 (Tsh)

Source of Care	Lowest Expenditure Quintile	Highest Expenditure Quintile	All
<i>Dispensary</i>			
Government	107	322	229
Other	1,258	2,759	2,021
<i>Health Center</i>			
Government	804	531	667
Other	1,731	2,362	2,052
<i>Hospital</i>			
Government	1,611	1,522	1,276
Other	2,467	7,172	7,267
Total	878	2,399	1,572

Source: HRDS, 1993/94, inflated to 1994/95 levels.

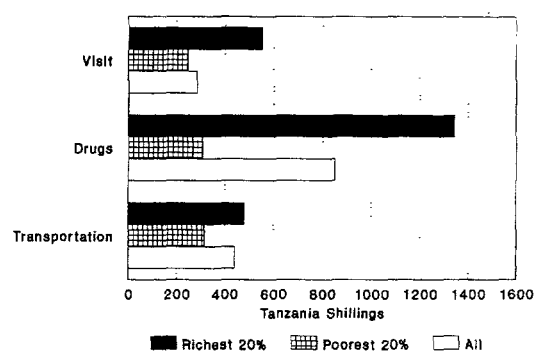


Figure S.7: Components of Expenditures per Visit
Source: HRDS 1993/94

¹⁷ Total spending of Tsh 1,572 in Table S.17 is higher than in Table S.16 because S.17 includes self care.

are the ones the World Bank typically finances: additional facilities to reduce the distance from the household, and improved physical plant and conditions.

Willingness to Pay for Primary Health Services

Households were also asked how much they value a dispensary or health center that embodies the characteristics the respondent himself or herself values. Nearly one-half the sample (47 percent) indicated that they would pay Tsh 134 shillings or less for all the costs associated with a visit to such a dispensary. However, the distribution, which can be seen in Figure S.8, is quite skewed. While half the responses lie at Tsh 134 or below, and two-thirds are at Tsh 2,680 or below, the remaining one-third would pay Tsh 5,360 and up for a visit. The result of the skewed distribution is that the average willingness to pay is quite high, at Tsh 4,401 (about triple the average expenditure per visit to any source of care today, and 30 times higher than average expenditures for a dispensary visit)¹⁸. However, most people fall far below this amount.

Figure S.9 shows how willingness to pay varies by each 10 percent of the expenditure distribution, further disaggregated by urban and rural population. Average willingness to pay in rural areas is actually slightly higher than in urban areas despite the fact that the urban population is substantially richer than the rural population. This is especially true at the lower end of the scale.

Table S.18: Households' Priorities and Perceptions of the Local Government Health Center or Dispensary

Characteristic	Ranking ^a	Percent Very Poor or Poor	Percent Good or Very Good
Adequate Drugs	5.2	63	10
Quality of Personnel	4.5	25	35
Community and Preventive Health	3.8	26	37
Distance from Home	3.3	44	28
Physical Plant/Clean Toilet/Water	3.1	30	25

^aThe ranking can range from 0 to 20. This column shows the average across the national sample.

Source: HRDS, 1993/94.

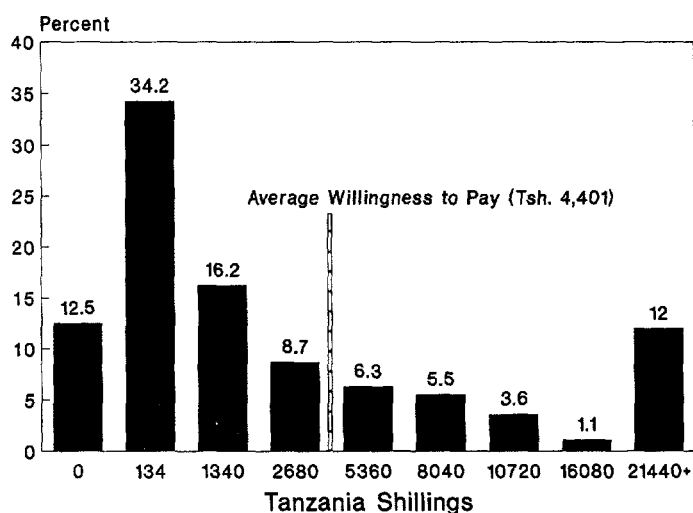


Figure S.8: Willingness to Pay for Health Center/Dispensary Visit Including All Costs
Source: HRDS 1993/94

¹⁸ Average willingness to pay for a health visit is Tsh 3,284; for a year of primary school, it is Tsh 8,572.

Many people use such figures to justify increased cost sharing for health services, as the average willingness to pay is much higher than current charges in the facilities. However, the highly skewed distribution is significant. One-half the sample would pay very little, even though the rest of the sample would pay Tsh 1,340 and more for a visit at a government clinic that offers drugs and good care. The best-off, urban segment of the population is willing to pay by far the most for health services, yet is the most heavily subsidized group of healthcare consumers.

Summary

Tanzania is a heavy spender on the health sector, and Tanzanians are heavy users of health services. Spending on health care by government and donors has the most pro-poor impact of any social sector spending in the country. Much of the spending is “right” in the sense of being targeted to cost-effective interventions. What is missing from the picture is impact. Why is Tanzania not getting better results? Is it a lack of complementary inputs that produce health, such as education and improved environmental conditions? Is it an ineffective public sector that consumes resources with little to show for it? Or is the physical environment in Tanzania so bad for health that the country must spend as much as it does just to stay even with its neighbors? Whatever the reason, the result is that the largest potential gains in the health sector will come not from increased government spending, but by making existing spending more effective, and by enabling consumers to get more for the money they spend on services.

WATER AND SANITATION

Water and Sanitation Sources

Water. Only about 11 percent of households in Tanzania have a private water connection inside their home or yard (Table S.19). Even these households must sometimes collect water from other sources due to the unreliability of the municipal

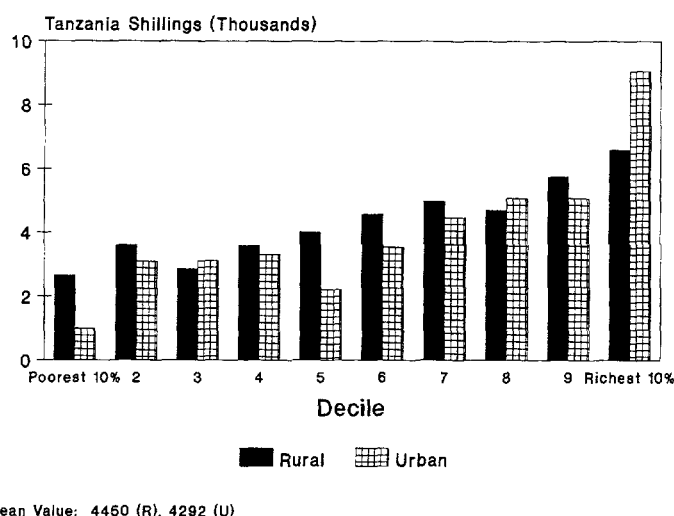


Figure S.9: Willingness to Pay for One Visit, Health Center or Dispensary, by Decile and Residence
Source: HRDS 1993/94

Table S.19: Household Water Sources, by Residence (%)

Type of Water Source	Dar es Salaam	Other Urban	Rural	All
Private Connection (inside or outside dwelling unit)	50.0	28.6	1.8	11.3
Distributing Water Vendor	2.7	0.36	0.0	0.3
Tanker Truck Vendor	0.1	0.14	0.0	0.0
Neighbor	32.9	17.3	1.2	7.1
Public Standpipe	8.7	26.1	19.7	20.6
Handpump	0.7	9.6	8.8	8.6
Open Well	3.9	10.6	27.8	22.2
Surface Water Source (river, stream, lake, pond)	0.4	7.2	41.0	29.9
Other	0.4	0.1	—	0.1
Total	100	100	100	100

Source: HRDS, 1993/94.

water supply system in most towns. Fifty percent of residents of Dar es Salaam and 29 percent in other cities now have a private water connection in their dwelling or yard, but 47 percent of households in Dar es Salaam collect water from outside their home (from a neighbor, public standpipe, handpump, open well, or surface water source). In other cities, 71 percent get water from these sources, principally from public taps and public wells.

In the rural areas of Tanzania, very few households have private water connections in their home or yard, and the vast majority of households collect water from sources outside the home. Sixty-nine percent still rely on traditional surface water sources or open wells. These sources are often a considerable distance from people's homes.

The urban figures track the sources of water by expenditure quintile. The richest 20 percent of all households have almost two-thirds of the private connections in Tanzania and buy more than half the water sold by tanker trucks and distributing water vendors. However, in rural areas, unimproved surface water sources are used by households in all income groups because many rural areas have no improved sources available. Conversely, when improved water sources such as public standpipes and handpumps are available in rural areas, they are used by all income groups.

Sanitation. Approximately 12 percent of the population have no sanitation facility at all (Table S.20). The most prevalent form of household sanitation system in both urban and rural areas is a traditional pit latrine. Data from the HRDS show that between 90 and 95 percent of households in urban and rural areas use traditional pit latrines.

Table S.20: Type of Sanitation Facility, by Residence (%)

<i>Sanitation Facility</i>	<i>Dar es Salaam</i>	<i>Other Urban</i>	<i>Rural</i>	<i>All</i>
Own or Shared Flush Toilet	8.1	4.9	1.1	2.5
Traditional or Improved Pit Latrine	90.2	92.4	92.3	92.2
No Facility, Bush, Pan, Bucket	1.7	2.7	6.6	5.3
Total	100	100	100	100

Source: HRDS, 1993/94.

In Dar es Salaam and other urban areas, only about 3 percent of the population have either a flush toilet for their own use or one that is shared with other households. Eight towns on mainland Tanzania have limited sewerage systems. In these towns, some of the few households with flush toilets have connected to the sewer system, while others empty into septic tanks and drainage fields.

Household Expenditures on Water

Only a small percentage of Tanzanian households (15 percent) pay any significant amount of cash for drinking water. On average, households with private connections and those buying from neighbors spend about the same amount annually, slightly more than Tsh 6,000 per year. Few households use vendors as their main source of drinking water, but those that do spend almost 10 times as much for water as a household with a private connection or a household purchasing from neighbors. Virtually no households in the lower 40 percent of the welfare distribution buy water from distributing vendors.

In short, the majority of Tanzanian households do not incur any monetary costs to obtain their domestic water supply. They pay instead with their labor by committing a significant share of their human capital resources to the daily task of obtaining small amounts of water for domestic use. In rural

areas, for example, an average household spends about three hours a day to collect water, or over 1000 hours per year. Even in urban areas, the average household collecting water from outside the home spends about 1.5 hours a day (500 hours per year) on such activities.

Huge sums have been spent on water and sanitation services in Tanzania, but much of that investment is standing idle in the country, producing little or no water for the intended beneficiaries. A major question is whether any of the investment can be salvaged to reduce the burden of water gathering on the population. The fundamental problem the country faces in the water sector is not how to fund new investments, but to find viable organizational structures through which existing assets can be given economic value or new, sustainable systems can be developed. In the water sector, perhaps more than any other, the need for decentralization, local responsibility, pricing that is related to costs, and a stronger connection between the demand for, and supply of, services are essential elements of a new approach.

NUTRITION

The review of household nutrition generated some surprising and provocative results. Levels of malnutrition in Tanzania are surprisingly low, relative to other Sub-Saharan African countries, and relative to other developing countries with comparable living standards. The incidence of moderate wasting (low weight for height) among children is around 6 percent, compared to 9 to 11 percent in neighboring countries. The major determinants of child malnutrition are low per capita income and inadequate schooling of women. Economic growth in hand with early and long schooling for girls would go far towards reducing the undernutrition that exists in Tanzania.

It is clear from expenditure patterns in the household survey that the poor currently consume a wide variety of foods not normally found in the diets of the poor in other countries, including eggs, meats, and dairy products. The latter comprise about 14 percent of the lowest quintile's food budgets, well over half of what they spend on the staple food (maize). As the poor increase their incomes, they will tend to switch even more toward "luxury" foods rather than to devote all of the additional funds to purchasing more staples. This suggests that the poor probably consider themselves fairly well fed, but that higher incomes alone will not reduce the significant malnutrition problems that exist.

There is consequently plenty of room for carefully targeted interventions to improve nutrition status among vulnerable groups. The mean duration of breast feeding is excessively long (21 months), but rarely are babies exclusively breast fed for the first 6 months. Supplementary foods are introduced for over half the infants during the first month of life. These foods are low in energy and nutritionally inadequate. There are also some specific micronutrient problems, most of which are closely associated with a high incidence of infectious and parasitic diseases. From the household survey, we also know that about 45 percent of primary school students do not receive any food before going to school, and 89 percent receive no food while at school.

So, while the overall nutrition picture looks surprisingly good, there is great potential for targeted interventions to improve human capital formation, particularly during pregnancy, for women at birth, and for children through primary school. Apart from the need for more educated mothers, the benefits of short-term but well-targeted nutritional interventions could be high.

FAMILY PLANNING

In family planning, as in all other sectors, there is much to be positive about in terms of services available but much to be concerned about in terms of results. Family planning shares most of the same health system that draws almost all pregnant women in for prenatal checkups. Overall, 80 percent of health facilities provide mother-and-child health services, and 69 percent offer family planning services. This system has achieved high levels of awareness of family planning methods and a reasonable supply of contraceptives throughout most of the country. Some areas are not covered as well as others, and many women must travel long distances for supplies, but an analysis of the 1992 Demographic and Health Survey (TDHS) suggests that supply of services is not the main constraint.

If there is a failure in the system, it is at the household level in that families are not demanding family planning services. Current use of effective modern contraceptives is, according to the TDHS, well below 10 percent. The high prevalence of sexually transmitted diseases and endemic HIV infections add to the importance of increasing demand for family planning. Analysis of the TDHS survey suggests that the major factor increasing demand for contraception is female education. While some levels of primary education can increase the demand, demand is strongly affected by secondary education. The relatively high impact of secondary education has been demonstrated in countries with low levels of contraception. As the prevalence of contraception increases, the impact of primary education for women also increases. Tanzania can expect continued high rates of fertility unless it can affect a real change in the environment within which family size decisions are made.

“Unmet need,” or demand for contraception, is determined by subtracting the number of desired births from actual births. In the HRDS, we asked respondents how much they would have to be compensated (or would pay) to delay the birth of their next child by an additional year¹⁹. Responses to the question ranged from the respondent *paying* at least Tsh 67,000 to space the next child, to a *subsidy* of Tsh 335,000 or more to delay the birth. If the individual would not accept Tsh 335,000 to space the next birth, we do not know the actual amount she or he would accept, only that it is higher²⁰. The relevant questions were asked to about 5,000 people, but the results reported here are only for 2,516 women between 15 and 45 who are married, widowed, divorced, or have a partner (93 percent are married).²¹

Figure S.10 shows the distribution of responses for these women (HRDS, 1993/94). The group would require an average subsidy of Tsh 170,717 (US\$297) to delay the birth of the next baby by one year. However, the distribution is quite skewed. About 45 percent of the women would pay to delay the next birth. Another 15 percent would space the next birth if subsidized by Tsh 67,000 (US\$117). For all practical purposes, the remaining 40 percent of women appear to have little or no interest in contraception to space births, as most of them say they would require a subsidy of over Tsh 335,000

¹⁹ Spacing children more widely results in a lower fertility rate.

²⁰ In the analysis discussed here, we assume that the maximum subsidy is Tsh 350,000, but that is arbitrary. It could well be infinite, and we chose this value so as not to overstate the subsidy that would really be required.

²¹ The exact survey question was: “The choice we would like you to think about is whether to delay a birth by a year in exchange for a sum of money. The money would be paid to the woman whose pregnancy is delayed. Please understand that this question is about delaying a birth, not stopping it altogether.” The question was introduced by a longer explanation, including the fact that the question was not about abortion, and that the woman would not be paid if she became pregnant during the year.

(US\$583) to space for one year.

Table S.21 shows characteristics of these women. They differ very little in age and only moderately in whether they use any contraceptive. About one-third of the women in each willingness-to-pay category are using contraceptives, but given their responses to this question, many are probably doing so for reasons other than child spacing. The women who would pay are quite serious about it, however, as they are much more likely than the others to use effective modern contraceptives. They are also, on average, better educated by about 1 year. The expenditure patterns are a bit surprising, since the women who are most willing to pay for spacing their children pay more overall for contraceptives, but they spend the least for modern contraceptives. The ones who say they would need the highest subsidy are paying the most.

We estimate that about 266,000 women were using modern contraceptives at a direct program cost of about Tsh 1,200 (US\$2.42) per woman in 1992. Much of this is spent by women who would be willing to pay to space their next births. However, this subsidy level is nowhere near what it would take to induce most women who are not currently spacing to begin doing so. The women who most value child spacing are capturing public subsidies for family planning, but are the ones whose behavior is probably least affected by the subsidy.

In Tanzania, according to the 1992 Demographic and Health Survey, the difference in actual fertility between a woman aged 40-49 with a secondary education relative to one with a primary education is almost 2 births. For Tanzanian girls in the 15-19 age group, only 5 percent of those in secondary school have begun to have children. However, 34 percent of those who left school having completed only the primary level have had at least one child.

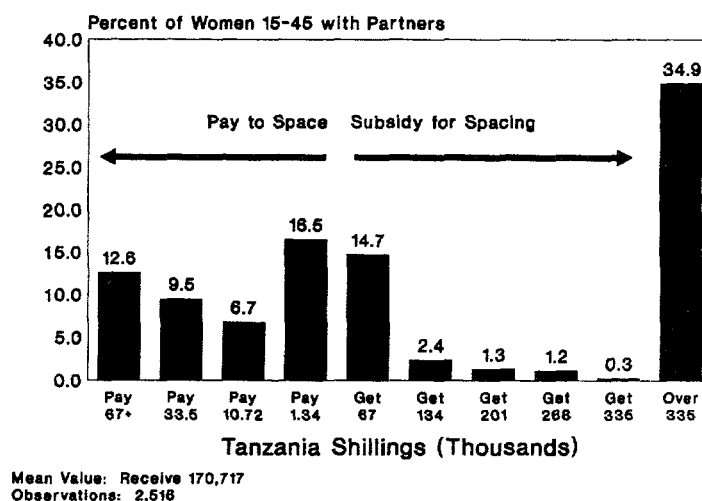


Figure S.10: Willingness to Pay, or Accept a Subsidy, for Spacing the Next Child an Additional Year
Source: HRDS 1993/94

Table S.21: Characteristics of Women between 15 and 45 Responding to Contingent Valuation Question of Child Spacing

	Would Pay Tsh 1,340 or more	Would Require Subsidy of Tsh 67,000	Would Require Subsidy Greater than Tsh 67,000
Years of schooling	5.4	4.4	4.7
Age	29.2	29.5	28.8
Currently use any contraceptive	49.6	36.8	31.4%
Currently use modern contraceptives	20.1%	8.5%	8.3%
Expenditure on family planning	Tsh 236.5	Tsh 71.8	Tsh 115.9
Expenditure on family planning if using modern contraceptives	Tsh 420.5	Tsh 574.2	Tsh 1,306.9

Source: HRDS, 1993/94, inflated to 1994/95 levels.

Four years of additional schooling, at a rate of subsidy of US\$152 per year from the government, costs the government approximately US\$309 to avert one birth. This investment reduces the infant mortality rate by about 30 percent, and creates many other benefits, not the least of which is improving the girl's education. For the 25 percent of secondary-school girls in Tanzania who are enrolled in nongovernment schools at the parents' expense, the country gets the same benefits for free. Worldwide, it costs about US\$65 to avert one birth through family planning programs.

Referring to Figure S.10, what Tsh 335,000+ subsidy would induce the large group of women clustered in the "over Tsh 335,000" group to space the next child? The existing Tsh 403,286 subsidy for four years of public secondary education would do the trick. In fact, the required subsidy would probably amount to much less than that, as parents and girls would contribute to schooling. Because 63 percent of the women saying they would require this high subsidy are 30 years old or less, and 36 percent are 25 or less, appreciating and acting on this information just 10 years ago (in 1985) could have had a tremendous impact on the fertility of this cohort today.

A demand-side intervention like secondary education for girls may not be as high profile as a contraceptive program, but it can be every bit as effective at lowering costs, and has a high immediate negative impact on fertility for girls while they are in school. The effects of secondary education on fertility are both immediate and long lasting, and produce a range of other benefits. For the time being, it may be the only family planning intervention for which there is plenty of in-built but un-met demand.

SUPPLY-SIDE CONSTRAINTS

The foregoing has focused on public finance in the social sectors and on the household side of the equation. Supply-side and management issues in the government system are serious but are well known and discussed in many other reports. We will do little more here than to summarize them (see Table S.22). The government has already put in place many reforms aimed at removing some of these constraints, primarily through decentralization of authority in the government and liberalization of the economy. Giving households more choice over social-service providers, and a stronger voice in the operation of the governing system (by moving authority and funds farther down into the system), would go far towards changing incentives and improving performance in the system.

LOCAL GOVERNMENTS AND THE SOCIAL SECTORS

At present, the delivery of basic education, health, and water and sanitation services in Tanzania involves regional and district governments and administration. The main problems at this level are related to the confused role of the local government in the system of governance as an administrative unit of the central government but also as a representative unit of the people in its jurisdiction. Ownership of primary-level facilities ostensibly lies with the community, but there are few privileges of ownership, as there is no local control over inputs. In addition, there are severe budgetary constraints and problems of accountability in local government. Four major issues include:

- **Extensive central control:** Social services are funded almost entirely by the central government, and the present revenue instruments available to district councils are not sensitive to growth in the local economy. As a consequence, the ability of the local government to fund social services

Table S.22: Constraints on the Supply of Social Services

<i>Sector</i>	<i>Financial</i>	<i>Managerial/Human Resource/Institutional</i>	<i>Non-Government Providers</i>
<i>Education</i>	<ul style="list-style-type: none"> • under-funding, with personnel costs squeezing out complementary inputs • high recurrent cost burden for extensive primary school infrastructure • disproportionate allocation of resources to university 	<ul style="list-style-type: none"> • heavy central control but little supervision or incentives for good performance • low accountability to parents or students • large numbers of teachers with relatively low qualifications • remuneration structure discourages well-qualified entrants into teaching • low morale among teachers • split and unclear responsibilities between ministries, with multiple ministries and levels of government involved at all points of service • headmasters typically lack managerial discretion 	<ul style="list-style-type: none"> • legal constraints at the primary level • competition from subsidized public schools for secondary, university, and training institutions • lack of financing mechanisms for nongovernment education (credit markets, capitation grants) • exam system reduces access to best students • inadequate information sources for parents to make choices among schools and decisions on educational investments • price controls on, and taxation of, secondary-school fees • training by all ministries and parastatals crowds out private sector
	<ul style="list-style-type: none"> • dependence on donor support for essential nonsalary inputs • public funding of boarding forces rationing of secondary and tertiary slots • UPE contribution goes to district government • resources poorly matched to demand 	<ul style="list-style-type: none"> • heavy central control but little supervision or incentives for good performance • low morale among health workers • low accountability to consumers • multiple ministries and levels of government involved at all points of service 	<ul style="list-style-type: none"> • competition from subsidized public hospitals and clinics • inadequate financing mechanisms for nongovernment services (insurance, capitation grants) • inadequate information sources for patients
<i>Health, Nutrition, and Family planning</i>	<ul style="list-style-type: none"> • disproportionate allocation of resources to hospitals • high recurrent cost burden for extensive network of facilities • dependence on donor support for essential nonsalary inputs 	<ul style="list-style-type: none"> • heavy central control but little supervision or incentives for good performance • low morale among health workers • low accountability to consumers • multiple ministries and levels of government involved at all points of service 	<ul style="list-style-type: none"> • competition from subsidized public hospitals and clinics • inadequate financing mechanisms for nongovernment services (insurance, capitation grants) • inadequate information sources for patients
	<ul style="list-style-type: none"> • free public provision of all services (with nominal cost sharing now in hospitals) 	<ul style="list-style-type: none"> • multiple ministries and levels of government involved at all points of service 	<ul style="list-style-type: none"> • inadequate information sources for patients
<i>Water and Sanitation</i>	<ul style="list-style-type: none"> • high recurrent cost burden for large capital projects 	<ul style="list-style-type: none"> • lack of beneficiary involvement • poor intersectoral communication and cooperation 	<ul style="list-style-type: none"> • historical central government monopoly • lack of contracting mechanisms or experience in outsourcing
	<ul style="list-style-type: none"> • free or very low-cost public provision of services 		

is poorly connected to the community's demand for those services. Central-government control and nationally set prices for water, education, and health services limit the ability of local government, or for that matter the service providers themselves, to finance the services they deliver.

- Separation between budget decisions and local needs: During various

stages of the budgeting process, cuts may be made at the center that reflect central-government constraints and priorities, but they do not reflect local needs. Under the current system, local authorities have little room to affect what actually happens on the ground as a result of these central decisions, as they have virtually no capacity themselves to make up the shortfalls.

- Inefficiency: Much of the reluctance of the center to give up control stems from the perceived lack of political and administrative accountability and efficiency on the part of local governments. Many local authorities have failed to produce their accounts on a regular basis, external audits are often delayed, and only a few councils have a functioning internal audit unit. In addition, many local authorities encounter serious difficulties and are ineffective in collecting taxes, fees, and charges that are due.
- Lack of capital or labor markets for local social services: Local governments are unable to borrow money for improvements in physical capital, such as water delivery systems, schools, and health facilities. These investments are centrally controlled. Local governments have little or no control over personnel posted by the center to these facilities, as all professional employees in health and education are part of a national cadre that rotates throughout the country.

In short, local governments are at the mercy of the central government for all inputs, including policy, management, capital, personnel, the budget, even books and other supplies. The district hospital, for example, is funded by local government, but its pharmaceutical budgets are managed by the Central Medical Stores Unit. The hospital must requisition drugs from the center, and may not purchase them elsewhere if they are unavailable from the Unit. District administrations, not schools, are shipped books from the central government. School libraries are stocked with a list of books predetermined by the central government, yet on paper, local communities are responsible for these services.

The result is a system in which responsibility is so fragmented that there is no accountability at any level. The center maintains control over almost all resources, but has delegated almost all of the responsibility to the local governments. The local governments have all the responsibility in principle, but are fully dependent on the largesse of the center. Local governments can always put the blame elsewhere when the system fails, and the central ministries blame the local units for incompetence.

CONCLUSIONS

The conclusion of the many parties involved in the production of this *Review* was an appreciation for the new facts put on the table, but a desire to jump to action quickly. Tanzanians are concerned about fixing the problems that jeopardize the future of their children. They are prepared to take bold steps to improve the situation. The following conclusions are shared by all who have participated in this process.

First, there is general agreement about the importance of primary and secondary education as a prerequisite for fast economic growth and creating a flexible and well trained work force. Similarly, there

is agreement about the strong impact of women's education in improving growth prospects and in facilitating improved health and nutrition, as well as smaller families and better educated children. Investing in early childhood care and development and basic education, especially for girls, will have high payoffs in Tanzania.

Second, the traditional mode of investment by the government and especially The World Bank must be adjusted to the realities of the situation. The traditional approach of putting investments into publicly owned schools, health dispensaries, water systems, and training with minimal input by beneficiaries, will probably do little to increase the stock of human capital in the country. One of Tanzania's main strengths is its development of a widely dispersed system of local social infrastructure in education, health, and water. But many of these investments have depreciated heavily through lack of maintenance or use because the intended beneficiaries' needs were either not met by the supply system, or it was simply not sustainable with the resources available. The last ten years have seen a deterioration of primary school enrollments, persistently poor health indicators, and abandonment of rural water systems. Additional investments in bricks and mortar are not justified without the assurance of increased demand for those services. The liberalization of secondary schools and primary medical care has revealed a huge potential supply (and demand) response when choices are made available to the public. Additional investments in social infrastructure take into account the fact that the public system is already too extensive to be supported by available resources and in many cases responds poorly to the felt needs of the population. Further investment should not occur in the absence of an incentive system that gives clear responsibility for operation and maintenance to local owners (including nongovernment owners). Finally, rationalization of existing public-sector plant and equipment cannot be maintained under any incentive system for want of adequate local resources or demand.

Third, Tanzania has tried for several decades to channel resources to the poor through direct provision of health and education services. The strategy of accomplishing this goal must be reconsidered in light of the fact that the rich are capturing a large share of public subsidies through the current system. It is time to re-examine how to better target the benefits from public sector spending to the poor. Such reallocations would be difficult, but they are feasible.

TANZANIA'S SOCIAL SECTOR STRATEGY

The Government of Tanzania has now prepared a *Social Sector Strategy* that proposes the following strategies:²²

- Strategy 1: Concentrate public-sector resources on core activities of the government. This strategy involves increasing the relative budgetary allocations to the social sectors, and focusing spending within the social sectors on basic education and health.
- Strategy 2: Balance personnel and other inputs within the social sectors. This strategy includes altering the number and structure of personnel in the social sectors and allocating funds to inputs that have been given too little attention in the past.

²² These six strategies are extracted from the Government of Tanzania's *Social Sector Strategy*, October 1994, pp. 17-20.

- Strategy 3: Decentralize authority to the local level. This strategy extends beyond the social sectors, and applies to the overall structure of the central-local government relationship. It is likely that this will entail revision of the Local Government Act of 1983.
- Strategy 4: Eliminate constraints to private-sector participation in the provision of social services. Several actions have already been taken, including the liberalization of secondary-school ownership and the legalization of private medical practice. In addition, implementation of the user fee program in the health sector is likely to shift some users to the private sector. Additional actions can also be taken to broaden the supply of social services.
- Strategy 5: Promote high quality standards. There are two aspects to this element of the strategy. First, quality-related problems must be addressed within the public system. Second, among the government's core functions is the appropriate regulation of health, education, and water services. The implementation of this function will be consistent with the changing role of the government in the economy.
- Strategy 6: Move resources closer to the household and promote household investment in human capital. This element of the strategy represents a full departure from the supply-side approach to the social sectors that has prevailed since Independence. In the long run, it will be the most effective way to finance important inputs into human capital.

IMPLEMENTATION OF THE SOCIAL SECTOR STRATEGY

The government, with assistance from The World Bank, has now begun to implement the *Social Sector Strategy* through pilot projects. The pilot schemes are being financed through existing IDA credits, and successful programs will be extended nationally and financed through IDA and other donor assistance. The four pilots are briefly described below.

- Pilot 1: Community Education Funds. These funds collect local contributions that are being matched by additional funds from the outside. Matching grants to supplement existing primary-school budgets, to be administered by local communities, are being forwarded by these funds to the schools. When primary education is liberalized, these matching grants will follow the student to the school of choice.
- Pilot 2: Scholarships for Girls to Attend Secondary School. This program may also include nonmonetary assistance to improve the performance of girls in secondary school.
- Pilot 3: Community Health Fund. This is a quasi-insurance system that collects premiums from households to finance a prepayment system for health care. It is a capitation system, under which families choose a

single provider for a specified period.

- Facility-Based Management. The community education and community health pilots provide for a local management board that manages public-sector facilities that participate in the pilot scheme.
- Pilot 4: Early Childhood Care and Development. Today, there are 7.2 million children from age 0 to 6 years or roughly 23% of the population. Investments in Tanzanian human capital begin at this early age, and the goal of this pilot is to enhance the quality and quantity of these investments. This is a community-based program aimed at preparing children from birth to age six for a healthy and productive life through community-organized interventions for mothers and care givers. These interventions will include practical mother-child activities aimed at better nutrition, education for better parenting, preparing the child for school by beginning to teach the rudiments of literacy, teaching mothers to identify various danger signals in their children (e.g. swollen bellies for worm infestation, white spots on pupils for Vitamin A deficiency, etc.), and providing community-based care.

As stated at the outset, the key recommendations flowing from the background work contained in this *Review* are to invest in expanding the quantity and quality of primary schooling, and to advance many more girls through lower secondary school. Through the *Strategy* and the pilot projects, the government is acting on these recommendations and is doing so in a way that puts decision-making at the parental and community levels. These changes are likely to result in new problems, and they will turn out to be imperfect fixes for what ails the system. As pilots, it is expected that the most serious problems can be corrected before nationwide implementation begins.

The process of getting started is now complete. The enormity of the problems Tanzania faces in the social sectors has been documented by this *Review*. The government has enunciated principles in its *Strategy* that will guide its efforts to find solutions for these problems. Finally, the government is trying to implement workable solutions on a pilot basis. Getting to this point has been a tremendous achievement for Tanzania's social sectors.

1

BACKGROUND

Tanzania is experiencing a crisis in the social sectors that threatens the country's future economic and social development. After encouraging progress up to about 1980, education and health outcomes have stagnated or even worsened in recent years. The government system of social service delivery, once a model envied by other countries, is ill suited to today's budget constraints and growing demands. The weaknesses of the current health, education, water, and other social services have been recognized by the government, donors and, most importantly, the Tanzanian people.

The World Bank has made investments in the social sectors in Tanzania since Independence. In general, Bank operations have supported the government's social services delivery system. Schools, health facilities and central institutions have been constructed, rehabilitated and supported. Government managers and service deliverers have been trained, and public water systems have been created. Experience has shown, however, that World Bank investments have yielded minimal results and have had an undetectable impact on human capital. Implementation constraints have limited the size of the total resource transfer, so the Bank has been able to invest only a tiny sum per capita annually. In addition, public infrastructure, financed by the Bank and others, has depreciated rapidly due to lack of maintenance. Little actual improvement in the quality of health and education services can be documented, and the lack of improvement in outcome indicators documented in this report should be disturbing to any organization, and not the least, parents, who have been investing in these systems.

The Government of Tanzania and the World Bank have made a commitment to change. Investments in human capital, ensuring that the next generation of Tanzanian children will be healthier and better educated, have risen to the top of the government's agenda, and also drive the World Bank's strategy. As a first step toward developing a collaborative work program, the World Bank and the Government of Tanzania agreed in 1993 to prepare a review of the social sectors that would bring together a common, objective set of information from which to design future operations. The *Social Sector Review* (SSR) was to have an explicit focus on the household, an often-neglected but vital actor in human capital investment. Without duplicating existing studies, the SSR was designed to present the results of the 1994 Human Resources Development Survey, supplemented with information from a set of background reviews on specific sectoral issues.

OBJECTIVES OF THE SOCIAL SECTOR REVIEW

This *Social Sector Review* has the goal of highlighting the role of the families and household members as the most important investors in human capital. At the same time, recognizing the importance of characteristics of the supply of social services in determining health and education outcomes, the SSR

also seeks to synthesize information about how the government and other institutions deliver and finance services.

Specifically, the SSR seeks to:

- present indicators of the status of human capital in Tanzania;
- describe patterns of use of, and spending on, social services at the household level, with specific attention to differences according to welfare, income level, and gender of the beneficiary of social services;
- estimate the demand for social services, both under existing conditions and under the conditions induced by policy change and improvements in the provision of services;
- describe patterns of government and non-governmental provision of, and spending on, social services; and
- identify the major constraints affecting the provision of social services.

This document reviews issues concerning the social sectors in Tanzania, but we try not to duplicate information readily available from other sources. For example, the education sections of this report emphasize primary and secondary education. A more complete analysis of post-secondary education is contained in Higher and Technical Education in Tanzania: Investments, Returns and Future Opportunities (World Bank Report No. 15327-TA).

This analysis is intended to provide readers with insights about how specific interventions can work in synergy with household-level behaviors to increase the quantity and effectiveness of investments in human resource development in Tanzania. It is intended to provide readers with insights about the potential for partnership between the government and an emerging private sector, and about specific interventions that could ease the constraints now impeding the effectiveness of social service delivery.

This document is the result of a participatory process that took place between July 1993 and September 1995. It was a fully cooperative effort of the government and the World Bank, with most of the data collection, analysis, and discussion carried out by Tanzanians for Tanzania. Other donors and representatives of NGOs also participated. One of the key concerns of the government and other donors was that the Bank not make recommendations on policy, but rather, facilitate a process whereby the government would prepare its *Strategy*, a longstanding commitment it had made to the donor community. The government (using the background papers and surveys produced for this report, along with the initial draft produced in June 1994, workshop discussions, its own policy pronouncements as embodied in its *Rolling Plan for the Budget*, and other sources) completed the *Strategy*, and presented it to donors at the Consultative Group Meeting in Paris in February, 1995.

This document, unlike most Bank reports, is not filled with recommendations, although it has a clear purpose and themes. Portions of the government's *Strategy* are quoted throughout this report in boxes, allowing the reader to see what the government proposes to do in response to the findings of our joint research and analysis. As has been the case with this work from the beginning, the participatory process has caused action to race ahead of the production of the analysis. Since August 1994, soon after

the workshop to review the background work for this report and the production of a first draft of the government's strategy, we have been working with the Planning Commission, the Ministry of Education and Culture, the Ministry of Health, and the Prime Minister's Office, to review and reorient existing World Bank-funded projects in education and health in order to implement elements of the reforms envisaged in the government's *Strategy*. Three pilot projects were implemented in August, 1995.

KEY DEFINITIONS

For our purposes, we define *human capital* as the productive assets that are embodied within individuals. Principally, these are formal and informal education, and good health. We define *investments* in human capital as the inputs (or payment for inputs) that increase human capital. These include, for example, schooling, use of preventive and curative health services, and child nutrition. The greatest potential for increasing human capital occurs during childhood, so our emphasis is largely on inputs that directly affect children. By design, therefore, we pay less attention to adult health, literacy, and technical education than to child health and primary and secondary schooling.

We define *household* as a group of individuals sharing cooking facilities. In most cases, these individuals are related by marriage and kinship ties. Households often also include unrelated individuals and may have close financial and other types of links to other households. Thus, while the primary context for decision making is the household, as defined above, we also pay attention to the larger community of households that influence decisions. It is essential to acknowledge that household members may (and typically do) have differential access to resources, and "household decisionmaking" may not reflect a uniform set of preferences among all household members. To the extent possible, therefore, we provide analyses that distinguish among age groups and between genders within the household.

DATA SOURCES

The primary source of data on household characteristics, use of social services, and spending is the Human Resources Development Survey 1993/94 (HRDS). The HRDS is a nationally representative survey of approximately 5,000 households based on the National Master Sample created by the Bureau of Statistics in the Planning Commission. It was conducted with the objective of obtaining detailed information about investments in human capital within the context of overall household expenditures. We also use data from other population-based surveys, specifically the Tanzania Demographic and Health Survey 1991/92 (TDHS), and the 1994 Tanzania Knowledge, Attitudes and Practices Survey (TKAP).

Insights from community case studies carried out for the *Social Sector Review* are also presented in this volume. The qualitative and quantitative research (using the Focused Area Study Technique, or FAST) involved focus group discussions and in-depth interviews with parents, children, teachers, and health care workers. It also employed time-use studies of children in and out of school, and the collection of data on the personnel and material inputs available in schools and health facilities.

Data on government facilities and expenditures come from government reports and previous budget analyses carried out for 1996's *Tanzania Social Sector Expenditures Review* (Follmer and Kessy, 1997). Analyses of the main constraints in each sector are derived from a set of sector-specific "overview papers" and several small-scale studies prepared as background for the SSR.

Many earlier studies have analyzed the financial and managerial difficulties facing social service delivery in Tanzania. In addition, donor agencies have documented implementation of specific interventions in the education, health and other sectors. Information from these reports is incorporated in this volume. However, this report is not intended to be a comprehensive review of all aspects of each element within the social sectors.

ORGANIZATION OF THE REPORT

Organizing this immense volume of information into a sensible structure that systematically highlights the role of household-level behavior and choices proved to be a significant challenge to the authors. The dividing line between the demand and supply sides of the equation are not as simple to define in practice as they are to discuss in theory. For example, it is difficult to describe patterns of school enrollment and household spending without referring to the structure and constraints of the school system. In addition, some elements of the social sectors (nutrition, for example) do not have an obvious “supply” side, although government actions can and do affect the supply and use of nutritious food within households.

Given these complexities, the *Social Sector Review* is organized as follows. This chapter continues with the conceptual framework for the rest of the report. Chapter 2 describes the government’s approach to the social sectors since Independence, presents information on public spending, and emphasizes the critical role of the local government in social service operation. Chapters 3 through 7 present information on the demand for and supply of education, health, nutrition, family planning, and water sectors, respectively. Those chapters emphasize outcomes and the role of the household first. Then they present background information on characteristics of the supply of services.

IMPORTANCE OF HUMAN CAPITAL AND HUMAN RESOURCES TO DEVELOPMENT IN TANZANIA

Growth and Human Welfare

Figure 1.1 shows the growth in the Tanzanian economy since 1980. Since structural adjustment began in 1984, there has been steady growth in the economy in gross terms. However, if population growth is taken into account, there has been little growth in per capita income. While this is one of the better growth records in Africa over the period, growth at this pace is not adequate to achieve rapid poverty reduction and broad improvement in the welfare of the population.

Consider a child born in 1994 in Tanzania who will be six years old in the year 2000. What kind of economic prospects will that child face, depending on the ability of the Tanzanian economy to grow? Figure 1.1

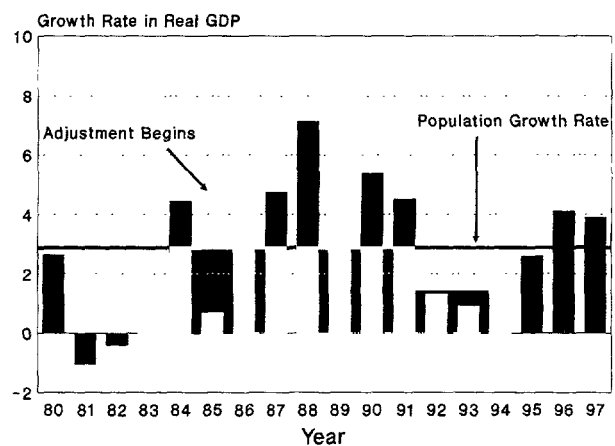


Figure 1.1: Tanzania's Record of Growth Since 1980
Source: World Bank Data

shows a few scenarios. If the economy can sustain a growth rate in per capita income of 10 percent annually, when this child is 56 years old and officially retired, Tanzania will be richer than the United States is today. That child will have quite a life – he or she will see Tanzania get wealthier every single year by such a large amount that the improvements could probably be noticed almost monthly. No economy, however, has sustained such a high growth rate in per capita income over such a long period. If the economy can sustain a growth rate every year of 7 percent, which is approximately what has been done in East Asia, Tanzania will have a GDP per capita that would put it at the high middle-income level by 2050. A growth rate of 5 percent yields respectable results, but at a rate of only 1 or 2 percent per annum, which is above Tanzania's sustained rate of growth over the past 15 years, the country will still be extremely poor in 2050. The child born today will live in a fairly stagnant world and face many of the same problems of poverty endured by his or her parents and grandparents. Tanzania is a wonderful place, and this individual could have a good life, but this will not happen unless high sustained rates of growth in per capita GDP can be achieved.

What does this have to do with human capital? Simple. There are basically three resources available to create wealth: land, people, and capital. We are focusing on the *people* dimension. Economic research into the determinants of economic growth suggests that 40 to 60 percent of growth rates in per capita GDP can be attributed to accumulation of human capital and increased productivity of people. In economic development, and this is certainly the case in Tanzania, the emphasis has been on accumulating physical capital and increasing the productivity of land, often neglecting *investments in people*. We are now beginning to understand that people are the key ingredient in economic growth, and investing in them can have huge payoffs. Thus, this Review is much more than just a review of social sector welfare programs for the poor. Close attention to the amount of resources being invested in the social sectors, the efficiency of social programs, and the quality of the outputs can have a major impact on Tanzania's growth prospects. Decisions the government makes in the social sectors will have much to do with the sort of lives today's Tanzanian children will face when they are adults, and with their ability to further improve the prospects for their own children.

Human Resources as Capital

What is human capital? We cannot see it or touch it, but it is something we create in our minds and our bodies. It is like building a dam inside our heads or a railroad in our bones. A dam or a railroad can be seen and touched, but the economic value of those investments is every bit as intangible as the human capital that each of us has accumulated. Both can become worthless or even a drag on the economy even though they are still physically in view. We usually think of human capital as the bundle of knowledge, health, skills, energy, creativeness, and other such characteristics that each of us brings to solving problems and earning a living. It is an economic phenomenon that becomes embodied in each of us. We can earn money from it. It has economic value.

Human capital is acquired not solely to make money, of course. Greater knowledge and skills make life better, and each of us benefits in innumerable ways when the person next to us is also well

Table 1.1: Compound Rates of Growth and per Capita Income in 2050

<i>Annual Growth Rate in GDP Per Capita (%)</i>	<i>GDP Per Capita in 2050</i>
10	US\$23,478
7	US\$5,891
5	US\$2,293
2	US\$538
1	US\$329

Note: Assumes US\$200 per capita GDP in 2000

Source: Author's calculations

educated and healthy. While these other types of direct “welfare” benefits are important, the point of this document is that even without them, only looking at the economic investment aspects of human capital, a very strong case can be made for greater investment in human beings. The indirect benefits that are not measured in GNP statistics make a very strong case even stronger.

The latest regional estimates of rates of return to education are shown in Table 1.2. There are wide variations by region and level of schooling, as would be expected. However, by any standard, these rates of return are high and competitive with other uses of investable funds. A recent review of 1,200 World Bank and IFC projects showed rates of return of from 3 to 17 percent for public-sector agricultural projects, and 10 to 15 percent for private-sector projects. The range depends on macroeconomic policies that accompany the investments (World Bank, 1991b, p. 82). The average social rate of return to primary education in Africa, Asia, and Latin America lies well above these rates, and even higher levels of schooling are very competitive. In Sub-Saharan Africa, in particular, the social rate of return to primary education is nearly 25 percent and to secondary education, 18 percent. The private rates of return are much higher, and these are the rates that parents face when they make schooling decisions for their children¹. While there has been considerable controversy over the last two decades about estimating rates of return for education, there is now little question that investments in education, especially primary and secondary education, are very profitable for parents and for nations.

Table 1.2: Returns to Investment in Education, by Level and Region, Latest Year

Region	Social Return in Percent			Private Return in Percent		
	Primary	Secondary	Higher	Primary	Secondary	Higher
Sub-Saharan Africa	24.3	18.2	1.2	41.3	26.6	27.8
Asia	19.9	13.3	11.7	39.0	18.9	19.9
Europe, Middle East, North Africa	15.5	11.2	10.6	17.4	15.9	21.7
Latin America, Caribbean	17.9	12.8	12.3	26.2	16.8	19.7
OECD	14.4	10.2	8.7	21.7	12.4	12.3
World	18.4	13.1	10.9	29.1	18.1	20.3

Note: Social and private returns are the internal rate of return to another dollar spent on education at each level.

Source: Psacharopoulos, 1993, p. 7.

From an investment standpoint, Table 1.2 contains another important piece of information. Rates of return to education fall very slowly as more people become educated. Cross-sectionally, this is easy to see. The social rate of return to secondary education falls from 15.2 percent for low-income countries (US\$610 per capita or less) to 10.3 percent for high-income countries (US\$7,620 per capita). This is a drop of only one-third in the rate of return across groups of countries that differ in incomes by a factor of over 12 (Psacharopoulos, 1993). The net secondary-school enrollment rate in low-income countries was 37 percent in 1988, compared to 95 percent in OECD countries (World Bank, 1991b). For Africa, where the stock of educated people is relatively low compared to OECD countries, the social rate of return to primary education is 24.3 percent, compared to 14.4 percent for OECD countries. Thus, additional investments in primary education could be expected to earn high returns well into the future. Although

¹ Private rates of return exceed the social rate of return because the social rate of return includes the public subsidy at each level of education.

we do not have similar information for returns to health, we would expect that there would also be high economic returns to investments in better health, especially in high-mortality areas.

Human capital can also be safely assumed to share a number of features with physical capital. Increasing the level of human capital should yield diminishing returns. The previous paragraph suggests that on an economy-wide basis, diminishing returns set in slowly. However, for individuals this is not the case. Those with a lot of human capital begin to reach a point where it makes little sense to invest more in themselves. Conversely, those with little capital can benefit relatively more from small investments.

Unique Features of Human Capital

Everyone owns some human capital. Not everyone owns land, buildings, and machines. Thus land and physical capital is often very inequitably distributed. In contrast, every person gets an initial endowment of human capital at birth. These endowments may not be equal, they may come with defects, but everyone has some. Females are not discriminated in this, and in fact, they start out with a little more health capital than do males. For many people, human capital is the only capital they will ever own. What happens to the endowment after birth is a matter of private and public investment choices, which is what this report is all about.

Human capital cannot be bought or sold. Human capital depreciates, like any investment, but it cannot be given away, lost to a swindler, gambled away, or misplaced. It is a form of capital that can only be rented by others, usually for a wage. There may be imperfections in the rental or wage market, but human capital can be an equity-enhancing source of wealth in a society if subsidies for it are properly targeted.

It is slow to depreciate. In industrial countries, earnings for college-educated people tend to rise continuously after college up to their late 50s, and many well-educated people continue to enjoy very high earnings into their 60s or 70s if they continue to work. In contrast, those with lower levels of education, especially those in manual jobs, see their earnings peak in their early 50s. Investments in general knowledge and skills have very long payoffs because they result in greater flexibility, adaptability, and mobility, among other things. Even our health tends to be slow to degenerate, and we now know that we have considerable control over the rate of depreciation of our physical and mental capacities by virtue of how we live.

It is possible to catch up. It is also possible to catch up quickly if investments are targeted to basic services. Richer countries have literacy rates closing in on 100 percent. It takes only a few decades to close the gap that exists in literacy rates between poorer and richer countries. Figure 1.2 shows how the trajectory has steepened during the last four decades as countries have striven for higher levels of literacy. Sweden and other OECD countries have been slowly moving toward 100 percent from a much higher starting point over the last century. In health, diminishing returns to additional investments means that poorer countries can close that gap as well, and a few have done so quickly. However, many

countries, including those of eastern Africa, have not yet effectively begun to exploit high-return options for improving health outcomes. Poorer countries like Tanzania can catch up quickly to countries much richer than they are by investing selectively in high-return human capital investments.

Producing Human Capital

Most production of education capital in a person takes place during the first two decades of life, while that of health capital comes before age five. People continue to invest in themselves throughout life, but much of that investment is re-tooling and maintenance.

Virtually all human capital investment in children is produced in the home, in schools, environmental health investments, or through the use of medical services. The range of investment opportunities for adults is somewhat wider, including on-the-job training, experience in a job, and other little tricks each of us has learned to upgrade our skills and continually invest in ourselves. This report is focused primarily on investments in children, because they are the key to future economic development, and they are the focus of present concerns about social welfare and poverty in Tanzania. Children depend on the household, particularly their mothers, for the mothers are the agents that contract for, or produce, most of the capital that children take into their adult years. A very large share of the investment in children is produced through social sector services.

One of the key features of human capital production is the complementary nature of the various investments that can be made. Table 1.3 provides an illustration of the types of interactions that are known to exist across the social sectors. The diagonal elements are suppressed on the assumption that there is a positive effect of each type of investment on its own outcome, such as health investments on health status.

Look first at education. We know that it increases the ability of couples to choose their level of fertility and achieve their goals. We also know that better educated people are considerably healthier than less educated people. People with higher levels of schooling eat better, and tend to take greater advantage of safe water and sewerage services. These effects are true for educated men and educated women. However, education for women has an even broader impact in that education for them generates strong additional benefits for their families, especially the children. Educated women have fewer, healthier, better-fed, and better-educated children. A father's education matters in many ways (particularly in adding to household income), but a mother's education is the most important input to improved human capital formation in her children.

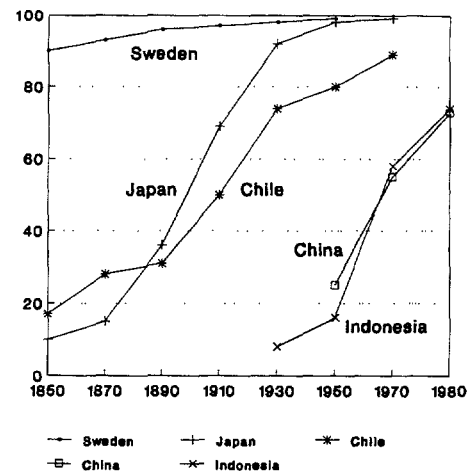


Figure 1.2: Increases in Literacy in Selected Countries, 1850-1980

Source: World Bank, 1991b

Table 1.3: Interactions among Social Sector Investments and Human Capital Outcomes

INPUTS FROM SOCIAL SERVICES	IMPACTS ON HUMAN CAPITAL FORMATION				
	Knowledge	Family Size and Child Quality	Health Status	Nutritional Status	Healthful Living Conditions
Education					
Family planning				+	
Health	+	+			+
Nutrition	+				
Water and Sanitation				+	

Note: The strongest cross-sector effects are shaded. The two cells surrounded by heavy lines with no shading indicate high potential for carefully targeted interventions. All of the diagonal cells could be shaded, of course, but in this table only cross-effects are considered.

Source: This is the authors' summary of the general findings of the empirical literature.

To look at the other shaded cells, family planning investments improve the health of mothers and children. Health investments improve nutrition outcomes because of the strong links nutrition has to disease from parasites, endemic diseases, and nutritional failures. The links also work in the opposite direction. A more healthful living environment resulting from investments in water and sanitation is complementary to many other investments such as education and nutrition. In addition, targeted health and nutrition interventions before and during the primary-school years have been shown to have important positive impacts on educational outcomes.

Four clear messages emerge from this chart. First, *education is the key producer of cross benefits to increasing the stock of human capital*. It has strong impacts across the board for the individual receiving the investment. Second, *education for women has large external benefits in increasing the stock of human capital*. Because women bear children, but also because of their traditional roles in the household and as cultivators in Africa, investments in the schooling of women directly affect the quality of the lives of children and others in the household. Third, *targeted health, nutrition, and sanitation investments can have high cross-benefits, especially for school children*. Fourth, *health is the major "user," or beneficiary, of other social sector inputs*.

To illustrate, let's examine one important example from Tanzania of the relationships among education, health, and population growth. As indicated above, female education is strongly correlated with lower demand for children and higher rates of child survival. According to the Demographic and Health Survey 1991/92, Tanzanian women with no education have an average of 6.5 children during their lifetimes, while women who have at least some secondary education have 4.2 children. The same survey estimated infant mortality in the past 10 years to be 103 per 1,000 live births for mothers with no education but 72 per 1,000 live births for mothers with secondary or higher education. These same relationships exist in industrialized and less-developed countries alike. A World Bank study of 13 African countries between 1975 and 1985 found that a 10 percent increase in female literacy rates reduced child mortality by 10 percent, while changes in male literacy had little influence.

It appears, however, that in Tanzania, female primary education does not have a large negative impact on fertility but secondary schooling does. This is a typical finding in countries that have high levels of fertility and low use of contraceptives. In Tanzania, total fertility and the mean number of

children born to one woman falls only slightly with increasing education, until secondary school (see Table 1.4). Much of the impact is direct in that it comes from delayed childbearing while girls are still attending school². One problem for Tanzania is that girls are starting primary school so late (an average of almost age 10 in our 1993/94 survey) that they may complete only a few years before child-bearing begins. Very few are advancing at all to secondary school, and there the drop out rate for girls is at least double that for boys. For Tanzania to reap the health and population-control benefits of improved schooling of women will require large and sustained investments in female education. These investments may be one of the most effective investments towards increasing the rate of accumulation of human capital in the country because of the cross-effects shown in Table 1.3.

Table 1.4: Fertility and Education in Tanzania

<i>Education</i>	<i>Total Fertility Rate for Women Age 15-49</i>	<i>Mean Number of Children Ever Born to Women Age 40-49</i>	<i>Teenagers 15-19 Who Have Begun Child-Bearing (%)</i>
No Education	6.11	7.08	39.9
Primary Incomplete	5.21	6.47	14.1
Completed Primary	5.17	6.26	30.0
Secondary/Higher	4.2	4.8	9.6

Note: All information is for 1994 from the Knowledge, Attitudes and Practices Survey except for information about total fertility and mean number of children born for women with a secondary or higher education. These data for these women are from the 1991/92 TDHS.

Source: TKAP, 1993 and TDHS, 1991/92, p. 23.

Paying for Investments in Human Capital

Most of the costs of human capital formation are up front. We generally pay for an entire education long before we start to see the economic payoffs to it, although many of the non-economic benefits become obvious quite early. The development of human educational capital takes a very long time, 6 or 7 years of primary school, plus an additional 2 to 12 years of secondary or higher education. The cash and opportunity costs of time in school are usually quite high, especially beyond primary school, and they make up most of the costs born by the household. Even if the cash costs are paid by the government, households pay the taxes that make such subsidies possible, so there is no escaping the high cost of such investments.

The problem of financing human capital, with high up-front costs and long-term pay-back, is compounded by poverty. While everyone can benefit from human capital investments, not everyone is equally capable of making them. The poor often have to make tragic choices between today's consumption and productive investments in their children. They simply cannot afford to do both.

Once a child finishes about three or four years of primary school, he or she is passably literate and numerate. Another four years, and the child is competent in all basic intellectual processes. In Tanzania, completion of primary school cost the government about US\$153 in FY 1995 in direct subsidies, and cost parents about US\$80. One year of secondary school cost about US\$575 in FY 1995. Of this total, the government paid approximately US\$167, and parents paid about US\$408 (Follmer and Kessy, 1996; Dar and Levine, 1996). One year of university education costs about US\$5,781, paid

² Although Table 1.4 contains simple correlations, the pattern is supported by multivariate work and is robust across many developing countries.

entirely by the government.

Government recurrent spending in FY 1995 was about US\$48 million on primary education, US\$8 million on secondary education, and US\$22 million on primary health care, a total of about US\$78 million. Households pay approximately double this amount. The key message of this report is that public sector spending on human capital investment is very low relative to the needs of the economy and its potential to absorb such investments. Public subsidies are provided inefficiently, and the distribution of the subsidies is inequitable.

Summary

The payoffs to human capital investment in Tanzania are large even if we only look at the impact they can have on earnings capacity and economic growth. Because of the synergistic effects of investing in one type of human capital on another, it is clear that the highest priority investments should be in basic education and education for girls. Targeted health and nutrition subsidies can also substantially improve the stock of human capital.

Perhaps most importantly, efficient investments in human capital are powerful poverty-reduction tools. When all of the benefits, both direct and indirect, of investing in people are tallied up, it is hard to find a loser in the process. The benefits extend across all productive sectors of the economy, tend to improve the relative position of the poor, and offer high payoffs to future growth potential. This is a win-win situation. Tanzania will only benefit by reviewing its social sectors, improving its human capital investment policies, and constantly monitoring those policies to make sure the goals are being achieved.

DEVELOPMENT AND STRUCTURE OF THE SOCIAL SECTORS

The conditions of the social sectors in Tanzania are, in large measure, a result of policies that have been in place for the past several decades. This chapter provides an overview of the development of the social sectors in Tanzania. It begins by describing the general policies, practices and problems in the social sectors since Independence. It then presents information on the implementation of social sector policies through the local government structure. The chapter concludes with a review of public spending levels and patterns.

THREE ERAS¹

The Government of Tanzania, recognizing that the country's development depends on the education and well-being of the citizenry, has had a long and enduring history of progress in the social sectors. From the time Tanzania gained its independence, the delivery of a wide range of social services has been viewed as the government's responsibility, and policymakers have sought to extend health, education, water, and other social services to the largely rural population. In light of the low income levels in most of Tanzania, the government historically provided services at no direct charge.

Bilateral and multilateral donors have played an important role in the development of Tanzania's social service infrastructure. Much of the capital for construction of service delivery points (dispensaries, health centers, primary schools, and water systems) has come from external sources. In addition, basic inputs such as essential drugs for rural health units and primary school textbooks have been provided by donor agencies. Both short- and long-term technical assistance have been offered in the form of managerial and technical support for social services.

Non-governmental organizations, particularly those associated with religious organizations, also have contributed to the development of the social sectors in Tanzania. Religious missions have supplemented government-provided services with hospitals, dispensaries and schools in many areas of the country.

Phase I: Independence to Early-1980s

In 1961, upon gaining its independence, Tanzania inherited the British colonial economic and public sector structure. The health system consisted of a few hospitals and private doctors in urban areas,

¹ This section is adapted from the *Social Sector Strategy* prepared by the Government of Tanzania Planning Commission for the Consultative Group meeting, February 1995.

religious mission services, and traditional healers in rural areas. The education system was stratified according to race, and the quality and accessibility of African schools were poor. In the water sector, most households obtained water at no charge from natural sources (surface water) or purchased it at kiosks.

Recognizing the fundamental inadequacies of the colonial system, and the needs of the population and the economy, the government sought to increase access to basic health, education and other social services. Much of this was done with the generous assistance of bilateral and multilateral donor agencies willing to support the newly-independent country.

The government's approach was to provide both basic and specialized social services using uniform, population-based standards for construction and staffing. It sought to provide those services at no charge to the users, and to finance the services using tax revenues and donor support.

The expansion of social service infrastructure and service provision during this period was impressive. In the health sector, for example, the number of government-operated rural health centers more than tripled between 1969 and 1978, and the number of dispensaries nearly doubled (see Table 2.1). Most of the 107 institutions now training health personnel were opened during this period, and large numbers of rural medical aides, medical assistants, medical officers, and nurses were trained and deployed in rural areas. As a result, the number of doctors increased more than three-fold and the number of medical assistants, rural medical aides, and health assistants increased by an order of 10. This expansion resulted in about 90 percent of the population living within 10 kilometers of a health facility, and nearly three-quarters within 5 kilometers of health services.

In the education sector, expansion was even more rapid. As shown in Table 2.2, both the number of enrollees in primary schools and the number of education sector workers increased by nearly four-fold during the 1970s. The majority of the 10,900 primary schools now in operation were constructed during the 1970s, allowing each village to have its own primary school. Most of the 40 teacher-training colleges now in operation were opened during this period.

Secondary-school enrollments expanded at a much slower pace. This was due to deliberate rationing of secondary schooling as part of a government effort to coordinate student enrollment with the nation's manpower requirements. Between 1971 and 1981, enrollment in secondary schools grew by only about 24,000 students, and the enrollment rate remained stagnant, at only about 4 percent of the

Table 2.1: Expansion of the Health Sector: 1969, 1978, and 1992

<i>Input</i>	1969/70	1978/79	1992
Civil Servants	12,400 <small>(1971)</small>	17,036 <small>(1981)</small>	32,650 <small>(1988)</small>
Health Centers	50	183	267
Dispensaries	1,444	2,282	2,393
Civil Servants per Unit	8.7	6.9	12.3

Sources: MOH, 1993; World Bank, 1994a.

Table 2.2: Expansion of the Education Sector: 1971, 1981, and 1991

<i>Inputs and Enrollees</i>	1971	1981	1991
Civil Servants Working in Education	23,131	93,318	101,042 <small>(1988)</small>
Primary School Enrollments	902,619	3,530,622	3,512,347
Secondary-school Enrollments	43,352	67,002	166,812
Civil Servants per Student	41	39	36

Sources: MOEC, various years; World Bank, 1994a.

cohort of children in the relevant age range.

Water delivery systems were expanded greatly during the 1970s. Under Regional Water Master Plans, donor-financed blueprints for improved water schemes were created in nearly all regions, and large-scale construction was initiated. As shown in Table 2.3, between 1971 and 1980, the proportion of the population with access to improved water sources increased from 12 to 47 percent.

As the water sector improved, centrally-planned activities were initiated to expand access to sanitation facilities. In 1973, the government introduced the "latrination" campaign, "Mtu ni Afya." This campaign, which required that each household should have and use a latrine, was accelerated following a cholera outbreak in 1977. As a result, latrine coverage in the rural areas increased from 20 percent to 50 percent between 1973 and 1980.²

Phase II: Early-1980s to Early-1990s

The impressive investments and accomplishments of the 1970s were not sustained through the 1980s. The government encountered difficulties in financing and managing the social services that had been put in place. At the same time, the expectations of the population increased. By the end of the decade and into the 1990s, the system that had promised rapid improvement in human welfare had not met its ambitious targets. Progress toward improved outcomes was lagging. A brief examination of the problems that emerged during the 1980s illustrates the weaknesses in the system.

Three basic supply-side problems emerged as the government sought to increase social services' coverage of the population.

First, the *recurrent cost burden*, following large capital investments in health, education and water services, and training of large numbers of personnel, was enormous. While donors had been willing to finance much of the capital cost of developing the infrastructure, financing of the recurrent cost was largely left to the government, which in turn depended on a small tax base.

The problems resulting from an overextension of the health, education, and water systems were compounded by rapid increases in the costs of imported materials, including petroleum, by the financial demands of other sectors, and by unfavorable international trading conditions. In 1972, the total oil import bill of Tanzania was Tsh 269 million, but by 1977, despite a 20 percent cut in oil consumption, the cost was Tsh 835 million. Among other consequences, the skyrocketing oil bill cut deeply into the health and education systems' supervision and referral functions.

Table 2.3: Expansion of the Water Sector: 1971, 1980, and 1991

<i>Water Supply Indicator</i>	1971	1980	1992
Population Covered by "Safe" Water ('000s)	1,440	7,644	7,474
Share of Population Covered by "Safe" Water (%)	12	47	46 ^a

^a Recent figures are widely thought to overestimate access. Currently, only about 25 percent of households are thought to use improved water sources.

Source: Mutalemwa, 1994.

² Figures on latrine coverage may be slightly misleading because of a broadened definition of improved sanitation facilities in recent years.

At the same time, government revenues declined. The prices of three of the nation's major exports (coffee, tea and tobacco) fell by 40, 29 and 12 percent, respectively, between 1976/77 and 1981/82. The unfavorable import-export market placed severe financial strains on the government's capacity to support social and other services. Purchase of items such as spare parts for water pumps became nearly impossible.

The second major problem faced by the government was that centralized *management* of the vast networks of water systems, health facilities, schools and associated staff was severely limited by the high cost of transportation and communication in rural areas. Accountability was inadequate, and consumers felt little or no ownership of the social services upon which they depended. The problems were made worse by the lack of coordination and changing lines of authority between central and local governments. Standard plans and norms established by ministries in Dar es Salaam were expected to be implemented by local governments, but the local administrations had relatively few financing options. Health and education sector employees, technically accountable to and supervised by central ministries and regional authorities, were formally employed by local governments.

The third problem was that both central and local governments were relatively passive toward the initiatives of donor agencies. These agencies had been essential to the positive developments in the social sectors. The *lack of coordination of donor efforts* led to a situation in which some donor-funded vertical programs drew attention away from core supervisory and service delivery functions in the health sector. External technical assistance in some sectors, especially the water sector, was poorly integrated into the government's existing structure, and too little indigenous capacity was developed to maintain the systems after the termination of consultant contracts. Some districts tended to receive considerable foreign assistance, while others were left with little or none.

None of the problems described above were insoluble. However, the Government of Tanzania did relatively little to improve the situation during the 1980s, in the face of a severe crisis throughout the economy. Without altering the fundamental definition of the government's role and near-monopoly position in the social sectors, policymakers attempted to stretch shrinking resources over expanding needs. The government's commitment did not wane. Table 2.1 and Table 2.2 show that by the end of the 1980s, manpower in the social sectors had continued to increase. However, the high cost of personnel tended to crowd out other necessary expenditures.

As a result, the quality of most social services declined. In the health sector, difficulties were manifested in decreased attention to supervision at the regional and district level, critical shortages of basic pharmaceutical and other medical supplies, and dissatisfaction of workers with their salaries. In the education sector, where the expansion had been most dramatic, textbooks and basic teaching materials were in short supply, as were qualified and motivated teachers in rural primary schools. In the water sector, implementation of the Regional Water Master Plans faltered. Over time, those systems required maintenance, spare parts, and ongoing operational support that was not forthcoming. Within several years, a large share of the pumps, wells, and other schemes that had been installed were non-operational. In some regions, up to two-thirds of the schemes went out of service. Some systems were started and never completed, leaving communities with partially constructed wells and pumping systems, and no access to improved water sources.

On the demand side, the population grew by about 3 percent annually during the 1980s. As a result, population growth alone placed increasing pressure on the government's ability to deliver social

services. Graduates from the first Universal Primary Education cohort placed severe pressure on the limited number of spaces available in secondary schools.

In part as a result of early successes in the social sectors, expectations about what the government should provide rose. The rise in living standards, at least in some areas of the country, created growing demand for better health care, education, and piped water – in short, for greater state spending. Despite faltering growth in the late 1970s and early 1980s, sustained growth in incomes began again under structural adjustment in 1984, further fueling demands for services that the government could not adequately supply.

Phase III: Current Era (early-1990s)

The stresses placed on the system of social services and the economy, and the inability of the system to adapt to those stresses during the 1980s, can be seen in health, education, and other outcomes during the 1990s. Overall, progress has been disappointingly slow. Enrollments in primary school have declined while illiteracy rates have at best remained stagnant. Basic health conditions, including those related to water supply and nutrition interventions, have improved very little, while the AIDS epidemic has added critical new challenges to the system. Continued rapid population growth has only added to the problem.

The government's current position, as articulated in its *Social Sector Strategy* (Government of Tanzania Planning Commission, 1994) is that the country's future development depends on a well-educated, healthy population. In Africa, as in the rest of the world, the engine of development will be the skills and productivity of the population. The experience of East Asia shows most clearly the potential for sound investments in basic education, in particular to support rapid rates of poverty-reducing growth.

A recognition that effective human capital investment has stagnated for 15 years has prompted new thinking about the government's role in the social sectors. Experiences of the 1980s show the need for greater flexibility, diversification, and responsiveness to demand in social service delivery, attention to sustainable financing, and explicit priorities for government and donor spending.

As part of this new thinking, the government is consolidating and focusing its role in the delivery of basic health and education services. At the same time, it is liberalizing the environment for private-sector participation in high-demand services that provide individual benefits. The government is defining its core (and non-core) functions and seeking to allocate the vast majority of public monies toward core functions. In addition, it is identifying the highest-payoff investments within and across the social sectors.

The government recognizes the role of households in investment decisions regarding health, education, and the well-being of its members. Household members are seen as active participants in choosing and supporting the services that offer concrete benefits to the population. This recognition has the potential both to improve the quality of social services and place them on a sounder and more

sustainable financial base. As part of this effort, the state has plans to shift some management decisions for primary schools to committees. Further, a pilot project is currently underway in which community representatives participate in the management of basic health service facilities (see Box 5.2).

DELIVERY OF SOCIAL SERVICES THROUGH LOCAL GOVERNMENT

Abolished in 1972, elected local governments were reintroduced in Tanzania in 1983 and charged with the responsibility of delivering basic health services (district hospital and below) and primary education services. This mandate is wide-reaching, and includes responsibility for the operation and maintenance of health facilities and schools, employment and supervision of health cadres and teaching personnel, maintenance of local water systems, and so forth (Shirima 1994).

Local Government Institutions

The functions of the existing three tiers of government are complex and often overlapping. The central government prepares guidelines for economic policy and management, human resource planning, investment guidelines, manpower management policies, and budgets (including centrally prepared investment and recurrent budgets). Regional governments are responsible for interpreting locally implemented central government plans and policies for the benefit of local governments, supervising their implementation, and providing technical advice to local governments in the execution of their development plans. The local governments, as stated above, are responsible for the implementation of services, employment of personnel, and (in concept) preparation of budget requests.

Administratively, local governments are weak due to shortages of qualified staff, compounded by

Box 2.1: Principles of the Social Sector Strategy

The government proposes the following as principles for investments and action in the social sectors.

Priority Attention to Development of Human Capital. As the key to Tanzania's future, the social sectors will receive priority attention from the highest levels of decision makers. Public investments in human capital will be consistent with the country's development goals.

Private Sector Partnership. The public sector (government and donors) will serve as agents to stimulate private investment, ensuring that basic services are adequately financed while not necessarily directly providing those services.

Defining the Public Sector Role. The government has a special role to play in complementing, not substituting for, investments in human capital that are made by the household. In particular, the government has the responsibility of investing in the priority areas that have the greatest social payoffs and that disproportionately benefit the poor. This is true along several dimensions: Across all sectors, the government will seek the optimal allocation between social sectors and other types of projects; within the social sectors as a whole, the government will identify the types of investments that generate the greatest long-term returns; and within each of the social sectors, the government will seek to concentrate resources on the inputs and programs that are most appropriate for public financing. In briefest form, this means concentrating public resources on preventive and basic curative health services, and basic education.

Targeted External Assistance. Donors will be asked to concentrate their activities and support in areas that are of high priority to the government, and that do not divert scarce human or material resources toward lower priority objectives. At the same time, donors will be asked to complement investments being made by the government.

Orientation toward Outcomes. Progress toward objectives will be measured in terms of improved measurable outcomes, rather than expansion of the number of schools, water systems, facilities, and personnel.

Local Control. The government will be accountable to the communities and households served. In the final analysis, it will be the consumers of social services themselves who must be satisfied with the quality and quantity of services and choices that are available to them. The means to do this is through further decentralization of authority and movement toward facility-based management.

Cross-Sectoral Linkages. Investments in the social sectors will be made more efficient by taking into account linkages across the sectors. Specifically, available evidence strongly suggests that improvements in one area—female education—is the surest route to significant improvements in household welfare in the next generation.

the loss of experience and institutional continuity during the period 1972-83. The structure and organization of local governments is currently based on an elaborate committee structure, inherited from the one-party era that prevailed from Independence to the early 1990s. The three types of committees generally recognized include political committees, administrative-political committees, and technical committees. These committees are also multi-tiered, ranging from the Village Council (the lowest formal committee in the local government system) to the Regional Development Committee. Currently, the district and village councils are elected, but all district-level officials are appointed by the central government. In general, members of the decision-making committees and councils are predominantly male. However, the government has made some efforts to increase female participation in these decision-making bodies.

Local governments are the owners of primary schools and dispensaries and are responsible for their maintenance. Their authority is severely circumscribed, however. Procurement of supplies and equipment for health and water schemes is usually done through central government stores, and the costs are debited from the respective district account. While some attempt has been made to increase local governmental authority, household and community members are otherwise virtually uninvolved in facility or systems operations.

Local governments are the *de facto* employers of staff in the social sectors in that they issue letters of appointment and pay salaries and related benefits. However, local governments have little say in the selection, motivation and discipline of their staff. They have to accept staff provided through central government allocations, and local governments are neither permitted to identify candidates nor to fire them. Disciplinary measures for professional misconduct and recognition for outstanding performance are largely handled by the sectoral ministries through their regional arms (see Box 2.2).

There are few incentives for staff to perform and few disincentives not to perform. Given the distance between supervisory and implementation levels, and constraints within the central ministries, there is virtually no assessment of performance, and promotions are usually awarded on the basis of length of service or patronage. On the other hand, only gross negligence is considered grounds for firing. A vacant post is normally filled by appointment rather than open competition.

Local governments are heavily dependent on central government financing, in particular for the agency services that cover education, health, and water and sanitation. Development projects are almost wholly funded by annual block grants from the center, and about 70 percent of the recurrent budget is similarly funded.

The sources from which local governments in Tanzania can raise money to finance services are

Box 2.2: Hiring and Firing of School Teachers

The hiring and firing of school teachers illustrates the complexity of the relationship between central planning and local implementation. Teachers are centrally supplied to the local government system without local governments having any say in the selection of individuals. In the case of severe teacher misconduct, parents are expected to lodge their complaint with the local school committee. If the committee agrees on a probable cause for action, the District Executive Director within the local government is notified, and he or she passes the matter on to the Teachers Service Commission in the Ministry of Education and Culture, which in turn prepares a recommendation to the Regional Service Commission. The matter is finally decided and settled by a national committee, which hands down a verdict; the verdict then cascades back through the system to the local school. The Regional Service Commission is the body with the authority to hire, fire and discipline staff. Recognition of exceptionally good performance follows the same process and is understandably rare.

well articulated in statutes, and include taxes, licenses and fees, user charges, rental income from council properties, government grants, and donations. Despite being empowered by existing statutes to raise revenues from a variety of sources, however, the actual performance in generating revenues has been low.

An examination of the potential revenue sources shown in Table 2.4 suggests that most are inflexible and cannot keep up with inflation. The development levy, a head tax, is the most important, especially in rural areas. Businesses and liquor license fees are relatively more important to municipal governments. For both urban and rural councils, these two taxes account for approximately 60 percent of the revenues.

Locally raised resources are inadequate in part because the central government proscribes increases in license fees, and because user fees are fixed at very low levels. Consumers are unwilling to pay for poor quality services, as described below:

- The central government sets the minimum and maximum license fees for each business. About 80 percent of these license fees (ranging from Tsh 40,000 to 400,000 per annum) are collected by the central government, leaving only about 20 percent of the collectable fees to the local governments. Local government agencies are not legally empowered to further raise the collection fees.
- User charges for social services were abolished in the early 1970s. Their recent reintroduction has been problematic, especially given the low quality of the services provided by the government. Local governments are caught in a vicious circle: declining revenues affect the quality of services, which in turn undermines the willingness to pay.

Table 2.4: Source of Funds for Rural and Urban Councils (%)

Source	Type of Council	
	Urban	Rural
Development Levy	35	50
Business/Liquor Licenses	24	9
Market Dues	7	–
Property Tax	7	–
Produce Cess	–	10
Livestock Cess	–	3
Others	27	28
Total	100	100

Source: Shirima, 1994.

Local Government Allocation Process and Accountability

The decisions about how much to spend and how to allocate funds are embedded in a local authority's budget. Thus, the degree of discretion over spending may be evaluated at several stages through the planning and budgeting process. The local authority planning/budgeting process is iterative and lasts a full year from July to June. It involves both the administrative and the political systems at successively higher levels, as well as local governments, regional administrations, and the central government (see Box 2.3).

Local governments have occasionally expressed concern over the role of the regional administration in the planning process. In particular, they have identified the following problems, which indicate that financial decision making and technical knowledge are disconnected:

- local government budgets are assessed and amended at the regional level before they are forwarded for approval to the Prime Minister's Office;
- regional administrations unilaterally carry out development works within the jurisdictions of the councils, regardless of councils' perceived priorities;
- regional administrations divert council resources for activities which have not been budgeted for by the councils;
- regional administrators undermine council decisions on the setting of tariffs and rates; and
- urban councils are at a disadvantage because regional development priorities are determined by the regional development councils on which urban council representatives are greatly outnumbered by rural council representatives.

The accountability of local governments in Tanzania is seriously deficient, for the following reasons.

- External audits for the most recently available fiscal year (1991-92) were more than 40 percent in arrears on account of delayed submission by local governments and staff shortages in the Auditor General's Department. External audits of some accounts have been in arrears for more than three years.
- Internal controls are neither feasible nor operational because of a lack of qualified and experienced staff. By the end of 1993, there were only two fully-qualified accountants working as treasurers in the entire local government system. These (and others, less qualified) had only limited and unclear decision-making authority.

Box 2.3: Transfer of Funds

Development Expenditures.

- Step 1. Councils prepare quarterly progress reports on project implementation, which are forwarded to the Regional Development Director (RDD).
- Step 2. RDD consolidates district project reports and forwards them to the Planning Commission through the Department of Local Governments in the Prime Minister's Office (PMO).
- Step 3. Planning Commission reviews report and approves release of funds through the PMO.
- Step 4. PMO channels funds to the districts through the RDD.

Recurrent Expenditures.

- Step 1. Funds to meet expenditures for grant services are released to districts through the RDD.
- Step 2. Reports are prepared by councils highlighting how funds were applied. These are checked by the PMO before the next quarterly release.

In short, the role of the RDD can be viewed either as that of an unnecessary administrative layer, or that of a post office box, depending on how each RDD views his/her function.

- Annual accounts are kept in a variety of forms (cash, accrual, or modified accrual), submissions are irregular, and principles of accounting are applied inconsistently from one year to the next.
- Budgetary controls suffer from major anomalies in the budgeting system, with the recurrent budget running from January to December and the development budget running from July to June. Budget proposal changes are subject to arbitrary cuts at higher levels without reference to local priorities.
- Internal audits are constrained by shortages of qualified staff and the lack of audit guidelines. Few councils have functioning internal audit units.

The principal issues in resource allocation relate to a disconnect between spending authority and accountability. Local government budgets are assessed and amended at different stages, and arbitrary cuts are made by other tiers of government without consultation and regardless of local priorities. Assessments of spending priorities for development are made without a financial and economic appraisal of the proposed investment, and without an assessment of the associated recurrent budget implications. Recurrent expenditure budgets are prepared on an incremental basis, without an assessment of spending priorities, and the resources to control and account for expenditures are woefully inadequate.

PUBLIC SPENDING AND THE DISTRIBUTION OF BENEFITS

This section provides a broad overview of public spending on the social sectors. Two basic questions are posed: How much does the government spend on health, education and water services? How does the population benefit from these investments? We first present information on the levels and trends of government spending on the social sectors. Next, we examine how the benefits of public spending are distributed across the population, by income category. This is intended as an overview. In the chapters that follow, resource allocations and benefit incidence for each sector are examined in detail.

Government Spending

The levels of spending in the social sectors are widely acknowledged to be inadequate to operate even the existing health facilities, water systems, and schools (see Box 2.4). In 1994/95, the Government of Tanzania budgeted 40 percent of recurrent expenditures, about Tsh 150 billion, for the social sectors, broadly defined to include education, health, water and sanitation (see Table 2.5). Education absorbed 22 percent of the budget. On average, direct central government expenditures through sector ministries constituted slightly more than one-third of the total, while the remainder was disbursed through the regional government and district councils. Almost all of the

Table 2.5: Total Government Expenditures, 1994/95

	<i>Budgeted Estimate 93/94 (Tsh billion)</i>	<i>Share of Total Recurrent (%)</i>
Gross Recurrent Expenditures	372.7	100
Of Which:		
Education	83.0	22
Health	57.0	15
Water	5.4	1
Other	4.3	1
Total Development Expenditures	20.0	
Total Expenditures	392.7	

Source: Follmer and Kessy, 1996; World Bank, 1997.

money was raised by the central government.

Box 2.4: How Much is Enough? Underfunding in the Social Sectors

In each of the social sectors, chronic underfunding has been identified by the government and donors alike as a severe problem. As Lawson (1993) points out, however, the concept of underfunding is rarely defined. At times, references to underfunding are meant to indicate that government funding of education and health services is inadequate to meet the demand for those services. This is the broadest sense of the concept of underfunding, and it accepts the premise that it is the government's responsibility to provide all services to the full population. At other times, "underfunding" means that the budget does not stretch to meet the government's current targets for coverage, given certain staffing and other input norms. Given the ever-expanding targets in health, education and water, and the use of staffing norms that were not based on economic analyses, this definition of underfunding is also broad. A narrower definition of underfunding is interpreted to mean that the health facilities, schools, and water systems *now in operation* cannot function at capacity because of lack of financial resources.

In his analysis of underfunding, Lawson drew from past estimates of the cost of fully supplying, staffing, and maintaining existing schools and health facilities. He concluded that "to operate *existing* services effectively, the government would require additional recurrent funding of at least Tsh 15.5 billion for health and Tsh 17.5 billion for education."

In a separate analysis of the magnitude of underfunding, the World Bank (1994a) estimated that to provide quality education to the current enrollees in 1993/94 throughout the primary school system would cost the government nearly 20 percent more than is currently devoted to primary education. If the enrollment were to expand to universal coverage of appropriately-aged children, the education budget would have to increase by about 76 percent. In the health sector, the World Bank roughly estimated that the health budget would have to nearly triple to meet the funding requirements for the essential health care package recommended in the *World Development Report* (World Bank, 1994c).

Whichever analysis is used as an indicator, there is no doubt that the funding of the social sectors is in a state of crisis. The gap between current expenditures and requirements is vast. The skewed allocation of funds toward higher-level services means that conditions are even worse for basic health and education, which provide most of the services to the poor. The matter of where additional money should come from (reallocations within the sectors, reallocation of the central government budget, greater local tax capacity, users, or donors, or a mixture of all) is a major problem to be solved.

The high recurrent costs of the overextended social service network, combined with severe economic constraints, resulted in the government spending most of its funds on the relatively expensive elements of the system, namely secondary schools, universities, hospitals, and so forth. Few resources have remained for maintenance, non-personnel inputs, and quality improvements. Very little money has been mobilized for new capital investments in the water sector, which has suffered from many years of inadequate maintenance.

The share of total government spending that is devoted to the social sectors has been falling over the past several years. While total government expenditures have grown in real terms at an annual average rate of 18 percent, social sector expenditures have grown by only 11 percent. In the social sectors, development expenditures have increased more rapidly than have recurrent expenditures (see Table 2.6). Social sector spending as a share of overall government spending at the regional and council levels fell from 43 percent in 1991/92 to 36 percent in 1993/94.

Donor Spending

Net official development assistance has comprised approximately 40 percent of Tanzania's gross domestic product in recent years. In 1991, external assistance amounted to about US\$43 per capita, making Tanzania one of the countries most dependent on external funds. A large share of this assistance is allocated to the social sectors, though the relative shares that different sectors have received have changed over time.

Each of the social sectors depends heavily on donor aid. Donors fund about 78 percent of development expenditures, and 5 percent of all government expenditures in education. Only 41 percent of external assistance is devoted to primary education, while 53 percent is allocated to higher and technical education, adult education, science and cultural programs, and ministry and regional administration.

In the health sector, donors fund a full 84 percent of development expenditures. Donors do relatively better in focusing on basic services in health as compared to education. Approximately 70 percent of all donor funds in the health sector go toward preventive services (including vertical immunization programs). Another 30 percent is devoted to curative services, principally those delivered in dispensaries and health centers.

Donor investment in water and sanitation has been declining since 1982. External funding for the sector decreased by about 78 percent, from US\$49.6 million in 1989 to US\$11.0 million in 1995. Spending on water and sanitation as a share of all foreign assistance declined during that same period from about 5.4 to about 1.1 percent.

The dependence of Tanzania's social sectors, even at the current unsatisfactory level of service, places the country in an extraordinarily vulnerable position. It is fully dependent on donor support for key inputs. Most training activities are fully funded by external assistance. Recent budget crises have forced the government to curtail all official travel, even routine supervision trips, unless donor support is provided. Numerous institutions, including the Institute for Management Training of Education Personnel, the Tanzania Food and Nutrition Center, the National Family Planning Program and others, are heavily (or fully) dependent on donor funding for their survival.

Incidence of the Benefits of Public Spending

As noted earlier in this chapter, an overriding and consistent theme of Tanzania's social policy since the Arusha Declaration has been to ensure that basic social services are available equitably to all members of society. The extent to which this is achieved can be assessed, in rough terms, by examining how the benefits of public spending are distributed across the population. The basic question is whether government spending is targeted toward the needy population. To answer this question, data on household use of social services were combined with information on how the government and donors spend their resources on health (including family planning and nutrition), education, and water.

Table 2.6: Trends in Social Sector Spending: 1990-93

	<i>Average Share FY90-FY93</i>	<i>Change in Share between FY90 and FY93</i>	<i>Average Real Growth per Annum FY90-FY93</i>
Net Public Expenditures	100.0	0.0	17.5
Total Expenditures in Social Sectors	30.2	-2.7	11.3
Net Recurrent Expenditures	100.0	0.0	10.3
Recurrent Expenditures in Social Sectors	36.3	-2.1	6.1
Total Development Expenditures	100.0	0.0	54.6
Development Expenditures in Social Sectors	14.0	+3.9	74.4

Source: World Bank, 1994a.

The analyses show that the benefits of public spending accrue disproportionately to the best-off households (see Table 2.7)³. The richest 20 percent of households capture 34 percent of the benefits of recurrent public spending on health, education and water. The poorest 20 percent capture 14 percent of the benefits.⁴

Table 2.7: Aggregation of Public Social Expenditure Incidence, 1993

Sector	Welfare Group					Total
	Lowest Expenditure Quintile	Second	Third	Fourth	Highest Expenditure Quintile	
Education	14	16	16	16	37	100
Health	17	20	16	18	29	100
Water	11	11	15	23	40	100
Combined Education, Health, and Water	14	18	16	17	34	100

Source: HRDS, 1993/94, and World Bank, 1994a.

This distribution of the benefits of public spending can be explained quite simply. The government has made a commitment to provide all levels of health, education, and other services at highly subsidized prices and to restrict the private sector. The distribution of subsidies from basic health and education services are fairly even across income groups. But they are also cheap. The highest levels of services (hospitals and universities, for example) are far more costly on a per capita basis. They are also more accessible to the relatively well off urban population. In education, the relatively few, typically wealthier students who are selected for secondary or university schooling receive the benefits of a sizeable share of government and donor investment. In health, better-off populations use nearby district, regional and consultant hospital services, and therefore consume a disproportionate share of the health budget. In water, where the distribution of benefits is highly skewed, huge investments have been made in urban water systems, benefitting the well off populations almost exclusively.

The systematic inhibition of the private sector in Tanzania greatly contributes to the distribution of the benefits of public spending. In settings where the private sector is more active in providing social services, the better-off populations are likely to meet a large share of their demand by purchasing services in the market.

³ Water figures for 1994/95 were not available. Estimates of the distribution of benefits for health and education in 1994/95 were calculated based on the 1994/95 division of expenditures across subsectors assuming that each quintile's share of subsector benefits had not changed. For example, assuming that the distribution of benefits across quintiles for primary school, secondary school, and university had not changed, the distribution of total education benefits was recalculated using the 1994/95 distribution of expenditures across levels of education. Using this approach, it is estimated that the poorest income quintile received 13 percent of education expenditures in 1994/95, the second poorest received 16 percent, the middle quintile received 15 percent, the second richest received 15 percent, and the richest received 41 percent of the benefits. Thus, the richest quintile appears to have increased their share of total education benefits. Using this same technique to estimate the distribution of health expenditures, the poorest quintile received approximately 17 percent of health spending in 1994/95, the second poorest received 19 percent, the middle quintile received 16 percent, the second richest received 19 percent, and the richest quintile of the population received 28 percent. Thus, the distribution of health benefits appears not to have changed from the previous year.

⁴ It is important to note that we have no information on the incidence of taxes. However, because government revenue is heavily dependent on indirect taxes, it is quite likely that tax incidence is regressive, compounding the regressivity of social spending. Moreover, conservative assumptions were made in estimating incidence of expenditures, so we expect that Table 2.7 actually *understates* the regressivity of the benefit structure.

CONCLUSION

The social sectors in Tanzania are entering a new era, in which the government and donors are learning, from successes and failures of the past, to restructure the delivery of services through the government and to ease the constraints on private-sector participation. Increasingly, there is recognition that the government cannot provide all services to all people, given the tight budget constraints and limitations in implementation capacity. The government is committed to targeting public funds toward the investments that yield the greatest positive results for society in general, and for the poor in particular.

The current division of responsibilities between the central and local government authorities is now a significant part of the problem. Ambiguity in management roles, overexpansion of infrastructure, lack of revenue-generating authority at the local level, and general underfunding have created a situation in which local authorities cannot adequately operate and maintain the institutions that were centrally planned. More effective decentralization, combined with greater accountability at the local level, is a requirement for progress in the delivery of social services.

The fundamental reason that the government should ease constraints on the private sector and foster more effective decentralization is to increase opportunities for households to invest in their children's human capital. Under the current system, households are severely constrained in their ability to make investments in health and education that will yield greater welfare for their families in future generations. Given that households have the greatest stake in human capital investment, it is essential that the government alleviate those constraints.

CHARACTERISTICS OF THE TANZANIAN HOUSEHOLD

The household's role in determining the outcomes in the social sectors has often been neglected in Tanzania. Regardless of the education, health, water, and other services available, the impact of those services depends heavily on the choice that parents and other household members make to use, or not to use, the services. In addition, many of the preconditions for successful education and good health are determined within the household, and are relatively insensitive to government intervention.

This chapter summarizes information about the characteristics of the Tanzanian household. How many children and adults live in a Tanzanian household? How much does a typical household consume, within and outside of the market, and how do consumption patterns vary? How much does a typical household spend on health, education, and other types of human capital investments? We highlight the differences between poorer and better-off households, as well as between those in urban and rural areas of the country. The information presented comes from analyses of the Human Resources Development Survey 1993/94.

HOUSEHOLD STRUCTURE

Overall, the average family size in Tanzania is 6.1 persons. Poorer households tend to be larger than better-off households (7 versus 5 household members for the lowest and highest income quintile, respectively). On average, rural households are larger than urban households.

Rural households and low-income households are characterized by a higher dependency ratio than urban and/or better-off households. That is, low-income households tend to have more children and more older people, relative to the number of individuals in the working age groups. The dependency ratio for the poorest one-fifth of households is 1.3, compared to 0.9 for the best-off households. Most of this difference is the result of differentials in fertility and the number of young children. On average, there are 3.4 children under 15 years of age in the lowest-income households, compared to 2.1

Table 3.1: Demographic Characteristics of the Household, by Expenditure Level

<i>Characteristic</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Average Household Size	7.2	5.0	6.1
Dependency Ratio	1.3	0.9	1.2
Average Age of Household Head	46.3	41.1	43.6
Female-Headed Households (%)	13.2	18.0	15.1
Average Number of Children Under 15	3.4	2.1	2.8
Average Number of Adults Over 64	0.20	0.14	0.15
Male-Female Ratio	0.94	0.93	0.97

Source: HRDS, 1993/94.

children in better-off families (see Table 3.1).

According to the HRDS 1993/94, 15 percent of Tanzanian households are headed by a woman. There is a higher proportion of female-headed households among the better-off households, and female-headed households are no more likely to be found in poverty than male-headed households. Despite this, there are indications that women's legal and social status is lower than men's (see Box 3.1).

Box 3.1: Gender Issues in Tanzania

Despite the measures taken by the Tanzanian government since Independence to ensure that women and men are equal partners in the nation's development, there is a general consensus that some of the existing religious and traditional norms and attitudes assign women a subordinate position in the society. This has proven very resistant to change, especially in the rural areas (Meena, 1994).

Women continue to carry the dual burden of caring for their families while providing the main labor on the family farm. The following facts highlight the disadvantaged position of Tanzanian women with respect to their male counterparts.

(a) The land is allocated to the households, but it is the husband who retains claim to it for both legal and practical purposes. In terms of land ownership, women continue to be regarded as legally incompetent. Moreover, under customary law, land is inherited through the male line. Thus, as a rule, women are unable to own land in their own right, borrow money using land as collateral, or grow cash crops for their own gain unless they have saved enough cash to purchase such land outright.

(b) Women are seldom in charge of cash crops. (The HRDS indicates that female-headed households in rural areas are significantly less likely to be cultivating at least one cash crop). However, by and large women are expected to do much of the day-to-day work. In addition, most women have the responsibility to raise all food consumed by the family.

(c) According to the present Employment Act, women employed in the private sector have the right to paid maternity leave for 12 weeks every three years, and 30-minute breaks for breastfeeding. In the absence of laws against discrimination, employers discriminate against women because labor costs can be higher.

(d) The bride price is acknowledged in the law, and discriminates against women in the event that they wish to divorce their husbands. A woman cannot obtain a divorce without returning the bride price.

SOURCES OF INCOME AND LIVING CONDITIONS

According to the HRDS, the most important source of income is from agriculture. Crop production was mentioned as the most important source of income for 60 percent of households on the mainland, but for the rural and the poor this percentage is 75 and 77, respectively. The next most important source of income is monetary savings, followed by livestock income.

Ownership of Goods

Table 3.2 shows the percent of the population owning at least one of the goods in each category, those being a bicycle, watch, and book. Patterns of ownership reflect strong differences in ownership of these goods across the population. While 36 percent of the males older than 15 own a watch, only 15 percent of women among the same age group claim to do so. Men are far more likely than women to own bicycles

Table 3.2: Ownership of Some Assets by Gender Among Population 15 Years and Older (%age)

<i>Item</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Bicycle	24.5	1.7	12.5
Watch	36.5	15.5	25.5
Book	51.1	34.1	42.2

Source: HRDS, 1993/94.

and books. Among all the goods for which information was collected in the HRDS, none was more likely to be owned by women than by men.

Patterns of ownership of durable goods reflect strong differences in access to these types of goods across poor and better-off households, as well as between rural and urban residents. Durables such as cameras and refrigerators are owned by only a very small proportion of the population, and only by rich households in Dar es Salaam or other urban areas. Still, even among these groups, the proportion of households that claim to own any of these assets is very low, revealing low standards of living for the overall population.

Housing Conditions

The poor are identified not only by lower expenditures, but also by distinct differences in the condition of their houses. In general, there is a clear distinction between a rich and poor household, as well as between a rural and an urban household. The average number of people per room is lower in the rural areas of Tanzania than in the urban area, including Dar es Salaam. However, overall housing conditions in rural areas are much worse. Only 1.4 percent of households in rural Tanzania have access to any source of electricity. This affects not only the poor rural households but the better-off as well. Overall, 74 percent of households live in a house with an earth floor. Among the poor, 95 percent live in houses with earth floors, compared to 46 percent among the better-off. There were no significant differences in most housing characteristics between male- and female-headed households of similar income levels.

Ownership of Land and Livestock

The survey analysis found no remarkable quantitative or qualitative differences in ownership of land or livestock to distinguish better-off from poorer households in Tanzania. Unlike many other developing countries, access to land is not the factor that distinguishes between poor and better-off households. About 88 percent of *both* poor and better-off households own land. Even among urban residents, whether in Dar es Salaam or other towns, ownership of land is prevalent. The average amount of land owned per rural household is 5.9 acres, with poor rural households owning about 5 acres and better-off households owning 6.4 acres, on average. Female-headed households have only about 60 percent as much land as male-headed households.

Based on the survey respondents' ranking of the physical quality of their land, neither quality nor quantity of land can explain the differences in the incomes obtained from the land (as reflected in different levels of consumption). However, quality of land may be interpreted more broadly to include any factor that may influence the returns of the physical capital. In this sense, access to roads may be a key element in determining the overall (non-physical) quality of land, and help explain the differentials in income.

Among rural households, the likelihood of a better-off household owning some livestock is similar to that of lower-income households. The average number of owned livestock of low-income rural households (6.9 animals) is similar to that of high-income rural households (7.4 animals).

Human Capital

According to the estimates of the HRDS, the literacy rate in 1993 was 75 percent. The survey indicates that women, and people older than 14 years of age living in poor rural households, are more likely to be illiterate than other groups. The literacy rate is 63 percent among the poor, 84 percent among the better-off. In Dar es Salaam, the literacy rate is 88 percent, compared to 82 percent in other urban areas, and 72 percent in rural areas. About 84 percent of all males older than 14 can read and write, while only about 67 percent of women older than 14 can do so.

Although Tanzania is performing relatively well in terms of the percentage of the population who are literate or numerate, the level of education achieved is rudimentary. Approximately 94 percent of the population over 21 years of age does not have any education beyond the primary level.

Very few of those who go beyond primary education live in poor households. Among the lowest-income households, less than 1.5 percent have any secondary education, while among the better-off, more than 11 percent have some secondary-school training. The gap is even more pronounced if we compare rural households with urban households. Approximately 16 percent of the population older than 21 living in Dar es Salaam has some secondary education, while in rural areas of Tanzania this value is as low as 3 percent. Among the better-off households in Dar es Salaam, about 30 percent had secondary education among their members. (These issues are discussed in greater detail in Chapter 4.)

EXPENDITURE AND CONSUMPTION PATTERNS

The HRDS allowed estimation of per capita expenditures at Tsh 166,917 for 1993. In the rural areas, average expenditure per capita was estimated at Tsh 119,425, as compared to Tsh 191,375 in the urban areas. The average per capita expenditure of the richest households is 7.3 times greater than that of the poorest group in Tanzania.

Patterns of expenditure reveal that all households in Tanzania, even the comparatively well off ones, are performing poorly. The share of food in total expenditures, which is an indicator of household welfare, is high even among the highest-income households. The survey estimated that in 1993, an average Tanzanian household spends 72 percent of their total outlay on food, 2 percent on health, and 1.4 percent on education (see Table 3.3). The share of expenditures on food is higher in rural areas than in the urban areas, and lowest in Dar es Salaam.

The main food item consumed is cereals, comprising an average of 27 percent of all food expenditures. In the rural areas, 65 percent of cereal consumption is from own production (among the poorest rural households it is 78 percent). Among low-income

Table 3.3: Annual Household Expenditures (Cash and Consumed Production), 1994/95

	<i>Rural</i>	<i>Urban^a</i>	<i>DSM</i>	<i>All</i>
Expenditures	664,116	910,905	1,487,092	776,604
Food	76.1%	66.4%	61.1%	71.5%
Health	1.7%	2.2%	2.3%	1.9%
Education	1.2%	2.0%	1.2%	1.4%
Other	21.0%	29.3%	35.4%	25.2%
Per Capita Expenditures	119,425	191,375	356,657	152,063
Per Adult Equivalent	186,917	281,846	523,328	231,421
Poorest 20%	68,378	94,365	187,889	74,048
Richest 20%	366,519	568,451	1,053,901	484,295

^a Cities other than Dar es Salaam (DSM).

Source: HRDS, 1993/94, inflated to 1994/95 levels.

groups, a large share of food expenditure is on maize, pulses, and seeds. At higher levels of income, households switch from maize to rice, and start spending relatively more on meat, fruits, and vegetables.

Urban residents (whether in towns or in Dar es Salaam) and better-off households spend more on health in both absolute and percentage terms than do the rural and the poor. While a rich household spends more than 2 percent of its total outlay on health, a poor household spends about 1 percent of theirs.

The share of total expenditures devoted to education is remarkably similar across locations and income groups. In absolute terms, however, this corresponds to a better-off household spending 4.4 times more than a poor household. This gap is much smaller in Dar es Salaam, where a rich household spends about 57 percent more than a poor household.

CONCLUSION

This brief analysis of household characteristics emphasizes that the vast majority of the Tanzanian population resides in rural areas, living in poor housing, and dependent on basic agricultural output for own consumption and for a limited income. While there are significant differences in disposable income, human capital, and other resources between the poorest and better-off households, even the well-off population may be having a difficult time making ends meet.

4

EDUCATION

Households have the most to gain from investing in the education of children, and the most to lose if the productive time lost during school is not compensated in higher future earnings. Given access to educational opportunities for their children and the right signals from the market, most parents will invest in schooling. However, when opportunities are constrained and education is substandard, parents may make other choices. Poorer parents are always the most constrained, and for them the choice between the future earning capacity of their children and immediate survival are often cruelly straightforward.

This chapter reviews education issues in Tanzania. However, an effort is made not to duplicate information available from other sources. For that reason, this chapter emphasizes primary and secondary education. A more complete analysis of post-secondary education is contained in *Higher and Technical Education in Tanzania: Investments, Returns and Future Opportunities* (World Bank Report No. 15327-TA).

We will examine both sides of the complex interaction between the demand for education and the supply of school services in Tanzania. On the one hand, we use household survey data to study patterns of enrollment and household perceptions of the quality of schooling. On the other, we summarize existing information about the constraints within the educational system. The picture that emerges is one of parents who are investing moderate-to-large amounts of money, relative to their income, in their children's education, but who are faced with a system that offers few choices and uneven quality. Poor households are particularly disadvantaged, with more children to educate, fewer resources, and scarcer opportunities.

OUTCOMES AND ENROLLMENT

Tanzania is far from achieving universal enrollment in primary school, and enrollment in secondary schools is much lower than in most developing countries. The gross enrollment ratio (GER) for primary education (the number of children in school divided by the number of children in the age groups that should be in school) was estimated to be 82 percent in 1993¹. The GER for girls is slightly more than for boys. Only about 7 percent of secondary-school-age children were enrolled in secondary school.

¹ These rates are from the 1993/94 Tanzania Human Resources Development Survey (HRDS). The government estimates the gross primary enrollment rate in 1991 to be 81 percent and the net rate to be 59 percent. The net rate is the percent of the relevant age group attending primary school.

Most Tanzanian children attend some primary school, but data suggest that the quality of that education is uneven. Official illiteracy rates rose from 10 percent in 1986 to 16 percent in 1992. Household survey data indicate that the self-reported illiteracy rate might be twice as high as the official reports, and that women are considerably more likely than men to be illiterate. Approximately 33 percent of women and 16 percent of men reported that they could not read or write (HRDS, 1993/94).

While Sub-Saharan Africa has low secondary-school enrollment rates by global standards, Tanzania's performance is poor relative even to that standard. Tanzania is now outperformed by its neighbors and falls below the average for Africa for secondary enrollment rates. Tanzania is matched only by Malawi in having the lowest secondary-school enrollment rate in the world.

Primary School

Educational enrollment in Tanzania has fallen precipitously since the quantitative gains of the Universal Primary Education (UPE) movement. After UPE was implemented, gross primary-school enrollment rose to 95 percent in 1982. Nearly fifteen years later, enrollment had fallen to 82 percent. This means that, despite rapid population growth, the absolute number of children enrolled in primary school was almost the same in the early-1990s as it was a decade earlier.

Gross primary-school enrollment rates are low for all income quintiles. Low-income households appear to be less likely to send their children to school than more affluent households. The average gross enrollment rate for households in the lowest income quintile was 77 percent, while that of the highest quintile was 87 percent (Table 4.2). However, when the figures for all income quintiles are reviewed, the pattern of the probability of enrollment increasing with income is clearer for boys than girls. Furthermore, Mason and Khandker (1997) did not find a statistically significant correlation between income and enrollment.

Enrollment rates vary by geographic location. The nation's highest enrollment rates are in urban

Table 4.1: Gross Enrollment Rates, 1993

Country	Primary School	Secondary School
Ethiopia	23	12
Kenya	92	26
Tanzania	82	10
Uganda	91	14
Sub-Saharan Africa	71	more than 23 ^a

^a The enrollment rate for women was 23 percent. The enrollment rate for men was not available.

Source: HRDS, 1993/94; World Bank, 1996.

Table 4.2: Primary School Enrollment Rates, by Expenditure Quintile, Gender, and Location, 1993

	Lowest Quintile		Highest Quintile		Average	
	Male	Female	Male	Female	Male	Female
Gross Enrollment Rates						
Dar es Salaam	n/a	n/a	74	72	75	73
Other Urban	79	94	88	92	89	93
Rural	77	74	90	87	79	80
All	77	76	87	86	81	82
Net Enrollment Rates						
Dar es Salaam	n/a	n/a	51	53	50	54
Other Urban	54	60	69	68	62	68
Rural	50	52	66	65	53	56
All Tanzania	50	53	65	65	55	59

Source: Mason and Khandker, 1997.

areas other than Dar es Salaam. On average, the gross enrollment rate in these areas is more than 90 percent. The rate is 80 percent on average in rural areas, and about 74 percent in Dar es Salaam. The especially low rate in Dar es Salaam is surprising considering that the city is relatively well endowed with school infrastructure, and household income is high by national standards (see Table 4.2).

Primary-school enrollment rates for boys and girls are relatively equal. However, in urban areas excluding Dar es Salaam, girls are somewhat more likely than boys to be enrolled. Girls are slightly less likely than boys to be enrolled in Dar es Salaam.

In Tanzania, 84 percent of children start school later than the statutory age of 7 years. In 1993, over one-half of children enrolled in primary school had started school at the age of 10 or older, and almost 13 percent of children had started school at the age of 12 or older (Table 4.3). The modal age for initial enrollment in primary school is 9 years. Girls are slightly less likely than boys to start school late. Parents and teachers report that one reason children start school late is that schools are overcrowded. As a coping strategy, schools fill up Standard 1 spots with the oldest children who have not yet begun school. Parents, especially in rural areas, also report keeping young children out of school to assist with agricultural and household tasks. Mason (1996) found that the presence of electricity in a village also reduced the likelihood of late starting. He hypothesized that this occurred because electricity was indicative of a more sophisticated economic infrastructure and that the returns to education in electrified areas were probably higher than the returns in areas in which economic activities were more traditional.

Gross enrollment rates by grade, shown in Table 4.4, indicate that enrollment drops off sharply after Standard 5. This corresponds to age patterns of attendance. The peak in attendance is in the very early teenage years. According to the HRDS, between ages 7 and 9, only 32 percent of children are in school, but between age 10 and 14, 82 percent are attending. Between ages 15 and 19, attendance drops back to about 36 percent. The gross enrollment rate is higher for boys than for girls in some grades; in other grades, the reverse is true.

Girls tend to start school slightly earlier than boys. The HRDS found that the average age

Table 4.3: Incidence of Late Enrollment Among Current Primary School Enrollees

	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
% of Students Who Enrolled Late	85.3	82.3	83.7
% of Whom Enrolled ^a :			
1 Year Late	18.1	22.9	20.6
2 Years Late	26.8	30.9	28.9
3 Years Late	21.8	24.2	23.1
4 Years Late	17.5	12.1	14.7
5 Years Late	15.8	9.9	12.7

^a Columns may not add up to 100 due to rounding error.
Source: Mason and Khandker, 1997

Table 4.4: Gross Enrollment Rates, by Grade

<i>Grade</i>	<i>Gross Enrollment Rates (%)</i>		
	<i>All</i>	<i>Boys</i>	<i>Girls</i>
Standard 1	72	76	67
Standard 2	90	96	85
Standard 3	94	91	97
Standard 4	78	78	77
Standard 5	89	84	93
Standard 6	47	42	52
Standard 7	26	26	26
Form I	14	13	14
Form II	11	13	9
Form III	8	9	6
Form IV	7	8	6

Source: HRDS, 1993/94.

of children starting school in 1993 was 9.0 years for girls, and 9.7 years for boys. This gender differential was confirmed in FAST interviews with parents. Parents reported that they preferred daughters to start school early so that they could complete primary school before reaching puberty and risking pregnancy. In contrast, they preferred their sons to start school a little later so that they were old enough to enter the workforce when they completed primary school.

Children from lower-income households start school at a later age than do better-off children. Among 7- to 9-year-olds, almost one-half of the children from the 20 percent of households at the top of the welfare distribution are in school, while only one-quarter of the young children from the poorest 20 percent of households attend school. At age 10 to 14, however, attendance is more uniform across the population. These differentials hold true for both girls and boys (HRDS, 1993/94).

Having started school at 9 or 10 years of age, children are 13 or 14 when they first reach the Standard 4 diagnostic examination, which is intended to indicate to students, parents and teachers whether the child is prepared to advance, or should repeat the fourth year of school. At this point, about 80 percent of students are allowed to continue to Standard 5. Three-quarters of the remaining students (15 percent of the total) repeat Standard 4, and the rest (about 5 percent of the total) drop out (MOEC, various years). Differences between boys and girls with respect to dropping out and repeating are minimal.

By the time they complete primary school most boys and girls are 15 years old. However, because of late starts and repetition of Standard 4, a significant portion are much older. In 1992, 15.6 percent of students in the final year of primary school were 17 years or older (MOEC, various years).

A high proportion of students drop out of school, and that proportion has increased since the UPE movement. Among the 1978/84 cohort, 28 percent of students dropped out before completing Standard 7. Among the 1983/89 cohort, 47 percent dropped out. Among the 1984/90 cohort, 42 out of every 100 entrants into Standard 1 did not complete Standard 7 (MOEC, various years). Although the rate of dropping out is similar for boys and girls, female students who do complete primary school score lower on the Primary School Leaving Exam than do boys. As a result, the cut-off point for girls' selection into government secondary school is approximately 10 points lower than for boys.

Children from poor households leave school at an earlier age than do better-off children. By age 15 to 19, about two-thirds of poor children (in the lowest 20 percent of the welfare distribution) are out of school (HRDS, 1993/94). The higher opportunity cost of remaining in school at older ages may help to explain this. The FAST time-use study found that boys older than 12 who are out of school split their time between farm work and working for money. Not surprisingly, because of later starts and higher levels of primary school drop-out, the total time in primary school for the poor is significantly less than for the rich. Thus, the primary school enrollment rate is low in Tanzania because, if children enroll, they frequently start late and drop out before completion. Mason and Khandker (1997) found that the direct monetary cost of attending school does not strongly affect student enrollment (see Box 4.1). In contrast, the opportunity cost of children's time was found to be quite significant in influencing enrollments. School enrollments were also positively correlated with school supply and parental education. Enrollment was not significantly correlated with income.

Box 4.1: Factors influencing Primary School Enrollment

Mason and Khandker (1997) analyzed two recent household surveys to explore why primary-school enrollment rates are low in Tanzania and have fallen over the last 15 years. Their findings indicate that neither the direct monetary cost of attending school nor family income strongly affect the likelihood of enrollment.

The opportunity cost of children's time is significant in influencing enrollments. An increase in the opportunity cost of girls' time is correlated with reduced female enrollments in school. The distance to school is also negatively correlated with enrollment, possibly because a further distance to school increases the opportunity cost of attending. Furthermore, an increase in female wages or female labor force participation reduces the likelihood of enrollment for boys. This crossover effect likely indicates that if girls are working outside the home, their brothers are more likely to be kept out of school to help with housework. Finally, when household income is held constant, an increase in the number of adults in a household results in an increased likelihood that children will attend school. This indicates that if adults are available to perform household tasks, children's opportunity costs are probably lower and they are therefore more likely to attend school.

School enrollments are also positively correlated with school supply. Holding distance to school constant, the greater the number of schools per capita, the more likely children are to enroll. This finding is in keeping with the FAST study in which parents and teachers said that schools were frequently overcrowded and younger children were delayed from entering until spaces became available. Mason and Khandker also found that in Tanzania, as in many other countries, parental education is positively associated with children attending school. Children living with their parents or grandparents are more likely to be in school than children living with more distant relatives. There was insufficient data to ascertain whether school quality was correlated with enrollments.

Secondary School

There were approximately 547 secondary schools in Tanzania in 1994, 344 of which were private. Most of these only cover lower secondary school (Dar and Levine, 1996). The number of government-owned secondary schools increased by 100 percent from 1987 to 1994. The number of private schools increased by 150 percent over the same period.

Despite this rapid growth in the number of secondary schools, it is still the case that only a small fraction of those who complete primary school are accepted into secondary school, or have opportunities for post-primary education (Box 4.2). The proportion of primary-school leavers selected for government secondary school has been 5 to 7 percent since Independence. If places in secondary schools and in vocational training institutions are considered together, there is one place in a government institution for every 12 primary-school leavers (Dar and

Levine, 1996). Because private secondary schools have grown so rapidly over the past decade, secondary-school enrollments have also increased sharply. Since the *de facto* liberalization of secondary education from 1984-85, enrollments in secondary schools grew at double-digit rates for nearly a decade.

Table 4.5: Secondary-school Enrollment Rates, by Expenditure Quintile, Gender, and Location, 1993

	Lowest Quintile		Highest Quintile		Average	
	Male	Female	Male	Female	Male	Female
Gross Enrollment Rates						
Dar es Salaam	n/a	n/a	23	21	18	19
Other Urban	1	2	31	28	15	17
Rural	3	2	15	7	8	4
All Tanzania	3	2	23	17	11	8
Net Enrollment Rates						
Dar es Salaam	n/a	n/a	18	19	13	17
Other Urban	1	2	22	24	11	14
Rural	2	2	7	5	5	3
All Tanzania	2	2	15	14	7	7

Source: Mason and Khandker, 1997.

Box 4.2: Selection to Secondary Schools

By far the most important examination in the school system is the Primary School Leaving Examination. On the basis of that examination, students are selected into government secondary schools. The examination is also used as an entry exam for many private secondary schools.

The secondary-school selection process has multiple steps. First, the government has established regional and district quotas, based on enrollments and available places in so-called national schools. There are also gender-based quotas, to equalize the numbers of boys and girls selected. Following selection for the national schools (boarding schools), there is selection for regional (mostly day) schools. Some private schools conduct their own examinations. However, virtually all private schools select students after the government schools have been assigned students (a few prestigious seminaries are exceptions to this rule). For the transition from lower- to upper-secondary school, selection is based on the results of the national Form IV examination.

The selection process is not transparent. Pupils and parents receive no information about their scores. Thus the students cannot choose, but are assigned schools by the government. As a result, some students may be sent to schools in regions far away from home (Dar and Levine, 1996).

Student enrollments more than doubled from 74,208 in 1984 to 196,375 in 1995. Primarily as a result of private-sector participation, the overall proportion of primary-school leavers able to enter secondary school has grown to about 15 percent. The gross enrollment rate for secondary school was about 10 percent in 1993 (Table 4.5).

In 1992, only 5.5 percent of students leaving primary school were selected for Form I in a government secondary school, and another 7.4 percent were selected for private secondary schools. While some alternative post-primary opportunities such as vocational training do exist, the vast majority of individuals who are not selected into secondary school receive no more formal education.

As secondary-school students progress through Forms, many drop out. In 1985, for example, 21,057 pupils were enrolled in Form I (public and private enrollments). By the time they reached Form IV (the completion of lower secondary), 14,806 (70 percent) were still in school. But five years after the 1985 cohort started secondary school, only 3,953 (19 percent) were in Form VI (to be precise, these figures do not refer exactly to the 1985 cohort because a small proportion are repeaters from other cohorts). Children who attend private schools appear to be less likely to continue from lower to higher secondary schools. The high drop-out rate between lower- and upper-secondary school is partially due to the limited supply of upper secondary-school places. In fiscal 1994, there were about 5.5 students who successfully completed lower secondary school for each place in the first year of upper-secondary school in public and private institutions (Dar and Levine, 1996).

Gender Differences. On average, gross secondary-school enrollment rates are higher for boys than for girls. Net enrollment rates for the two genders are approximately equal. This indicates that boys are more likely than girls to remain in secondary school after they pass the “standard” secondary-school age if they have not yet completed their studies. In Dar es Salaam and in other urban areas, gross and net enrollment rates are slightly higher for girls than for boys. In rural areas, girls have significantly lower enrollment rates than boys (see Table 4.5).

Girls may be more likely to be pulled out of school for family reasons. Pregnancy itself is often grounds for dismissal of students. Up to about one-third of all girls enrolled in secondary school are expelled due to pregnancy (World Bank, 1991a).

Students' subject choices in secondary schools are tightly constrained and influenced by gender stereotyping. Many specialists have identified biases in the teaching methods and materials used. For example, only one school offers advanced levels of the agricultural curriculum, and this school is open only to boys. In contrast, the home economics curriculum is offered in 122 secondary schools, of which 23 are single-sex (girls) and the rest are coeducational (Meena, 1994).

The Tanzanian government is understandably concerned about the country's very low secondary-school enrollment rates and about the gender inequity in enrollments. Furthermore, the government is aware of the fact that the rate of return to educating girls is higher than the return to educating boys. For these reasons, the government has recently initiated the Girls' Secondary Education Support Program (GSES) which provides bursaries for poor girls to attend secondary school (see Box 4.3).

Box 4.3: Girls' Secondary Education Support Program (GSES)

Tanzania's gross secondary-school enrollment rate is only about 10 percent. Enrollments are particularly low for girls, while the rate of return to educating girls is higher than the return to educating boys. The Girls' Secondary Education Support Program (GSES) seeks to raise enrollments and maximize the social return to education investments by providing secondary-school bursaries to poor girls. The program's aim is to provide a bursary each year to at least one girl in each participating primary school. The Government of Tanzania and the World Bank designed the program through a participatory process involving extensive consultations with the beneficiary villages and other stakeholders.

For each participating primary school, the school and the relevant village council advertise the program in their community. Interested girls enrolled in Standard VII submit applications. The school lists all the girls who submitted applications and would not be able to afford secondary school unless assisted by a bursary. From these they select up to 6 of the most academically able students. The village council chooses one nominee to be eligible for the bursary. The village gathers in a community meeting to vote on whether they agree with the decision of the village council. The parents of the nominated girl sign a memorandum of understanding (contract) with the community and the bursary program. The secondary school the girl will attend signs a memorandum of understanding with the bursary program. The girl attends school and reports back to the village council on her progress. Her progress is also monitored by the GSES program.

Each primary school selected by the program is allocated an annual bursary of Tsh 300,000 (approximately US\$ 500). The families of the selected girls are expected to contribute any amount that is not covered by the bursary. The girls must attend secondary schools that are qualified to participate in the GSES program. Conditional on performance, participating girls receive an annual bursary for all four years of their lower secondary education. When the girls enroll in schools, the bursaries are directly deposited into segregated bank accounts opened by the secondary schools. The girls and the schools must account for funds entrusted to them.

The program has functioned well in its first two years, although some problems have arisen. Villagers are excited about the program and, through their participation, have taken an increased interest in girls' education. The participating girls are performing approximately as well as other students in their schools. In the short run, the program may crowd out financially better off students due to constraints on school places. Therefore, it is possible that though the economic strata in a school will change, it may not increase total enrollment. As the program continues however, it is expected that there will be a supply response to the increased demand for secondary education. Day-school attendees have experienced some difficulties in transportation, which is expensive and time consuming. Some students stay with families close to school to avoid transport problems. However, some complain of being treated like servants. There have also been reported cases of pregnancy. Nevertheless, of the 392 girls who obtained a bursary in the first year, 364 continued for the second year.

Economic Differences. Gross secondary-school enrollment rates are low for all income quintiles. Nevertheless, low-income households are much less likely to send their children to secondary school than the more affluent. The average gross enrollment rate for households in the lowest-income quintile was 2 to 3 percent, while for the highest quintile it was approximately 20 percent (Table 4.5).

Government secondary schools are the main source of secondary schooling, but they tend to serve the better-off households disproportionately. According to results of the HRDS, of those attending secondary school in 1993/94, 39 percent attended a government school, 17 percent a church-related

school, 32 percent a private secular school, and 12 percent a community school. Of those in government secondary schools, only 8 percent came from the poorest 20 percent of the population, while 34 percent came from the richest 20 percent.

These differentials are reflected in the composition of the student bodies. At the secondary level, more than half (60 percent) of the students in government schools come from the wealthiest 40 percent of the population. In the secondary church-related and private secular schools, nearly three-quarters of the students are in the upper 40 percent (HRDS, 1993/94).

Among the poorest group, girls made up 64 percent of the students attending government schools, but parents offset this by enrolling boys in other secondary schools so that the overall ratio of girls to boys at that level of income was 48 versus 52 percent (HRDS, 1993/94).

Geographic Differences. Secondary-school enrollment rates also vary significantly by geographic location. The gross enrollment rate is approximately 16 percent in other urban areas, and about 6 percent in rural areas.

Mason and Khandker (1997) found that a number of factors contribute to the probability of children enrolling in secondary school. The greater the distance between home and school, the less likely were children to be enrolled. This is probably due to the fact that families must pay more for travel (and possibly for boarding) if schools are distant. As is the case for primary-school enrollment, secondary-school enrollment for girls declines as girls' opportunity costs increase. In contrast to primary-school enrollment, secondary-school enrollment is highly correlated with family income. Secondary-school enrollment is also significantly correlated with the education level of the head of the household. Finally, girls are more likely to attend secondary school if they live with their immediate family than if they live with more distant relations. Mason and Khandker's results did not show that the direct costs of secondary school significantly influenced the probability of enrollment. However, they hypothesized that data limitations may have masked this link. Similarly, data limitations did not allow Mason and Khandker to ascertain whether supply constraints or school quality were associated with the probability of enrollment.

Mason and Khandker undertook simulations to estimate how reducing the distance to schools and introducing bursaries to cover tuition fees and children's opportunity costs might impact enrollment rates. According to their simulations, bursaries covering the direct and opportunity costs of attending secondary school would increase the rate of initial enrollment in secondary school from its current level of 13 percent to 16 percent. Thus, according to Mason and Khandker's calculations, these policy changes would have positive but very modest effects on enrollment levels.

Higher and Tertiary Education and Training

Currently about 6,000 students take the Form VI examination each year. There are approximately 2,000 university-level spots, or one for every 3 secondary-school leavers. After Form VI, students may also enter diploma or similar programs in various public institutions. Each year, there are about 3,200 spots in these post-Form VI institutions. In addition, a small number of Tanzanian students go abroad for study. In all, almost all individuals finishing Form VI have the opportunity to continue on with academic or professional training. The number of students completing tertiary-level education increased by about 45 percent from 1985 to 1991, the most recent year for which reasonably complete

data are available (Dar and Levine, 1996).

Individuals who have completed primary school can enter vocational training at either government or private institutions. About 25,000 primary-school leavers enroll in vocational training programs that include handicrafts, carpentry, masonry, mechanics, painting, tailoring, and a variety of practical skills.

Increasing Post-Primary Education Opportunities

As the previous sections illustrate, post-primary educational opportunities are very limited in Tanzania. The government is aware of this, and increasing enrollment rates remains an important priority for the state. However, increasing post-primary enrollment rates is expensive. Table 4.6 estimates required increases in government recurrent expenditures if the government implements a policy of increasing secondary and/or tertiary enrollments assuming that unit costs remain the same in the year 2000 (in real terms) as they are today. Enrollments are adjusted to take into account a 2.8 percent annual population growth rate (Dar and Levine, 1996).

Table 4.6: Increasing Enrollment Rates Without Altering Unit Costs

Scenarios	Enrollment	As a % of Current Costs
Current Situation	146,058	100
<i>Alternative Scenarios in 2000</i>		
Doubling Secondary	273,085	159
Doubling Secondary and Tertiary	354,660	238
Tripling Secondary	368,965	198
Tripling Secondary and Tertiary	539,749	372

Source: Dar and Levine, 1996.

If the government doubled secondary enrollment rates (without altering tertiary enrollment rates or per student expenditures on tertiary education²), its recurrent expenditure on post-primary education would increase by 59 percent (in real terms). If both secondary and tertiary enrollments were doubled, costs would rise by 138 percent. Real costs would rise by almost 200 percent if secondary-school enrollments were tripled by the year 2000, and costs would rise by 272 percent if secondary and tertiary enrollment rates were tripled.

As Table 4.7 indicates, an increase in enrollment rates without altering cost structures would have very large budget repercussions for a government that already faces significant fiscal constraints. Given the government's budget constraints, significantly increased post-primary enrollments probably cannot be achieved if the government does not reduce unit costs and does not actively encourage the private sector in the provision of educational services. The following scenarios review simulations of post-primary school enrollments under alternative budget reallocation assumptions. First, the impact of reallocation from tertiary vocational/training institutions and the university to secondary education is considered. This is followed by an examination of the impact of reducing unit costs on enrollments. In all the simulations, total expenditure on post-primary education remains constant.

² Even though tertiary enrollment rates remain constant, total tertiary enrollment will rise slightly simply due to population growth. Thus, while per capita expenditures remain fixed, overall expenditures on tertiary-level education will also rise.

Table 4.7: Increasing Enrollments Through Reallocation

<i>Program</i>	<i>Current</i>	<i>Scenario A</i>	<i>Scenario B</i>	<i>Scenario C</i>
Policy Changes	NA	Resources shifted to secondary Close cost ineffective institutions Encourage private training	Cost sharing Efficient welfare, personnel expenditures	Resources shifted to secondary Close cost ineffective institutions Cost sharing Efficient welfare, personnel expenditures Encourage private training
Enrollment				
Secondary	79,027	153,394	98,784	191,743
Tertiary	63,011	31,506	90,106	45,168
Training/ University	4,020	2,680	5,950	3,966
Total	146,508	187,580	194,839	240,877
% change in enrollment				
Secondary	NA	94	25	142
Tertiary	NA	-50	43	-29
Training/ University	NA	-33	48	-2
Total	NA	28	33	64

Source: Dar and Levine, 1996.

Scenario A: The government reallocates one-half of its budget currently devoted to tertiary training institutions, and one-third of its university budget to general secondary education. This will involve closing down some institutions that are a drain on government resources. Even though the enrollment in public tertiary institutions will decline, the private sector can step in and supply training if demand exists. If the current cost structure is maintained, secondary-school enrollments will approximately double.

Scenario B: More efficient use of teaching staff, and a reduction in government contributions towards student boarding and welfare, could potentially reduce government recurrent expenditures per student by 20 percent at the secondary level and almost 40 percent at the tertiary level. If these efficiency gains were achieved, enrollments would increase at all levels. However, this scenario may prove the least beneficial and most costly in the long run. The government would be forced to support an even greater number of tertiary institutions, many of which are of relatively poor quality.

Scenario C: If both changes outlined in scenarios A and B were made, Tanzania could afford to educate nearly 112,000 more secondary students, maintain university enrollments at the current level, and reduce enrollments in training institutions. Again, if demand exists, we assume that the private sector will step in and provide training services.

In all these scenarios, recurrent expenditures on education remain constant while enrollments rise. Scenario C seems to be the most optimal.

HOUSEHOLD EXPENDITURES ON EDUCATION

Overall Expenditures

Households across Tanzania spend a little more than one percent of their total expenditures on education (see Table 4.8). Overall, the poorest households spend a greater percentage, but rural households spend a smaller percentage (of a smaller amount) than urban households. Interpretation of the ratio should take into account the fact that education expenditures are nearly all cash expenditures, while total household expenditures are not all cash. Roughly 53 percent of expenditures in the bottom 20 percent of the welfare distribution are cash, while in the top 20 percent the vast majority (80 percent) of household expenditures are cash. Consequently, the poorest group spends almost 4 percent of cash income for schooling compared to just over 1 percent for the richest 20 percent of households. There is virtually no difference in total spending on education between male- and female-headed households.

There are two ways to consider household expenditures on education. First, one can look at the total amount spent on education (for all children) in a household. Second, one can examine the amount spent per student in a household. Given the differentials in the number of children of school age, two households can spend the same absolute amount and yet be making qualitatively different investments in their children. We examine both in the following tables.

On average, households spend a total of Tsh 18,211 per year on the education of children. As shown in Table 4.9, there is great variation in the total expenditures on education across the welfare distribution. The poorest households spend a total of about Tsh 6,869 on education annually, while the 20 percent of households at the top of the income distribution spend more than four times as much, or Tsh 41,320.

While the differentials are seen in all areas of the country, the gap between rich and poor spending is greatest in urban areas outside of Dar es Salaam, and least in Dar es Salaam. For all households except those in the highest income category, education expenditures on sons exceed expenditures on daughters (see Table 4.10).

On average, households spend Tsh 5,148 per pupil. Rural households spend the least (Tsh 3,950 per pupil) and households in Dar es Salaam spend the most (Tsh 13,368 per pupil). Per-pupil expenditures vary across the welfare distribution, as one might expect, with wealthier households paying

Table 4.8: Share of Total Expenditures on Education, by Expenditure Quintile (%)

<i>Residence</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Dar es Salaam	2.0	0.9	1.2
Other Urban	1.7	1.8	1.8
Rural	1.5	1.0	1.1
All	1.4	1.4	1.3

Source: HRDS, 1993/94.

Table 4.9: Total Household Expenditures on Education per Year, by Households with at Least One Child in School (Tsh)

<i>Residence</i>	<i>Lowest Quintile</i>	<i>Highest Quintile</i>	<i>Ratio (High/Low)</i>	<i>All</i>
Dar es Salaam	19,741	103,266	5.2	42,738
Other Urban	10,963	64,430	5.9	29,744
Rural	7,145	23,770	3.3	12,722
All	6,869	41,320	6.0	18,211

Source: HRDS, 1993/94, inflated to FY95 levels.

about 3 to 5 times as much per student as poorer households. A very poor household in a rural area spends on average Tsh 2,663 per student per year, while a wealthier rural household spends an estimated Tsh 7,295 per student. The differential across the welfare distribution is greatest in urban areas outside of Dar es Salaam (see Table 4.11).

Table 4.10: Total Annual Household Expenditures on Education by Households with at Least One Child in School, by Gender (Tsh)

<i>Expenditure Quintile</i>	<i>Expenditures on Boys</i>	<i>Expenditures on Girls</i>	<i>Total Household Expenditures</i>
1 (Lowest)	4,043	2,826	6,869
2	5,154	4,903	10,057
3	8,308	6,404	14,712
4	9,832	9,336	19,167
5 (Highest)	20,016	21,306	27,920
Total	9,364	8,847	18,211

Source: HRDS, 1993/94, inflated to FY 1995 levels.

Primary School Expenditures

The three largest expense categories for primary school were uniforms, contributions and fees, and books and supplies, which accounted for 48, 19 and 20 percent of expenditures, respectively. These three categories accounted for 99 percent of spending by the poor, but only 80 percent by the rich. The best-off households spent

Table 4.11: Government and Household Expenditures per Student Enrolled in Primary School (Tsh)

<i>Residence</i>	<i>Government Recurrent Expenditures</i>	<i>Household Expenditures</i>			<i>All</i>
		<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>Ratio (High/Low)</i>	
Dar es Salaam	8,844	8,916	27,639	3.1	13,368
Other Urban	8,844	3,926	14,408	3.7	7,314
Rural	8,844	2,663	7,295	2.7	3,950
All	8,844	2,692	10,973	4.1	5,148

Source: HRDS, 1993/94 inflated to 1994/95 levels; Follmer and Kessy, 1996.

a substantial amount on tutors and other expenses (such as clubs, extracurricular activities, pocket money, and so on). The relative distribution of expenditures was similar for boys and girls.

Secondary School Expenditures

Cost-sharing has been in place in government secondary schools since the late 1980s when schools started charging nominal tuition fees. Since 1993/94, students have been required to buy their own uniforms, stationery, books, personal hygiene items, and bedding. Students are also expected to pay for transportation costs and part of food expenses. Typically, food, clothing and transportation account for 60 percent or more of students' secondary-school expenses (Dar and Levine, 1996).

Parents with children in secondary school spent an average of Tsh 55,527 per student in 1994/95. In rural areas, if poor households have a child in secondary school, they pay somewhat less per student than do the richest households (Tsh 45,058 and 59,977, respectively). However, the urban poor spend much less than the rural poor, and they spend only one-half to one-fourth of what the rich spend (Table 4.12). Expenditures on boarding schools across the population are fairly constant except among the

richest group, which spends considerably more than the other groups. On average, sending a child to secondary school costs an upper-income family about 21 percent of their annual per capita expenditures. A family in the lowest expenditure quintile pays 81 percent of per capita expenditures to send a child to secondary school (Mason and Khandker, 1997).

Because public schools are heavily subsidized by the government, they are significantly less expensive for parents than private schools (Table 4.13). In 1993, parents spent 63 percent more to send their children to private schools than to public schools. The spending differences required for sending a child to private school are particularly large for the poor. Poor households spent 124 percent more when they sent their children to private schools than they did when their children attended government schools. Households in Dar es Salaam spent on average 16 percent more to enroll children in private schools. In other urban areas, households spent 84 percent more for private schooling (Mason and Khandker, 1997).

When comparing expenditures on primary versus secondary schooling, rural households spend on average 9 times as much on secondary education as on primary, while in Dar es Salaam the differential is only a factor of 4.6. The poorest households pay 8 times as much for secondary education (Table 4.14).

Poor households tended to spend about the same on girls as on boys at the primary-school level,

Table 4.12: Government and Household Expenditures per Student Enrolled in Secondary School per Year, by Expenditure Level, 1994/95 (Tsh)

Residence	Government	Household Expenditures			All
		Lowest 20%	Highest 20%	Ratio (High/Low)	
Dar es Salaam	100,500	35,803	117,140	3.3	64,901
Other Urban	100,500	35,412	77,985	2.2	55,867
Rural	100,500	45,058	59,977	1.3	53,650
All	100,500	38,039	71,902	1.9	55,527

Source: HRDS, 1993/94, updated by inflation to 1994/95 levels ; World Bank, 1994a.

Table 4.13: Average Household Expenditure per Student Enrolled in Government and Private Secondary Schools (Tsh per year in 1994/95)

	Lowest 20%	Highest 20%	Ratio (High/Low)	All
<i>Annual Household Spending for Government Schools</i>				
Dar es Salaam	26,146	95,322	3.6	62,149
Other Urban	40,763	53,193	1.3	37,917
Rural	24,828	41,245	1.7	40,409
All Tanzania	24,072	52,292	2.2	40,956
<i>Annual Household Spending for Private Schools</i>				
Dar es Salaam	46,310	141,231	3.0	72,231
Other Urban	40,698	94,856	2.3	69,868
Rural	62,487	70,591	1.1	62,808
All Tanzania	53,868	85,208	1.6	66,587
<i>Percent for Difference in Household Spending: Private vs. Government Schools</i>				
Dar es Salaam	77%	48%		16%
Other Urban	0%	78%		84%
Rural	152%	71%		55%
All Tanzania	124%	63%		63%

Source: Mason and Khandker, 1997, based on HRDS, 1993/94, then inflated to 1994/95 levels.

but much less on girls than on boys at the secondary-school level. Higher-income households spent somewhat more on daughters than on sons in primary school, but this pattern is reversed in secondary school (Table 4.15). It is unclear why households spend more on boys than on girls in secondary school. Mason and Khandker (1997) hypothesize that this is because boys are more likely than girls to attend upper secondary school and so a larger percentage of the boys in secondary school are in the upper standards. This would result in higher average expenditure per boy than per girl because the cost of upper secondary school is higher than the cost of lower secondary school. It is also possible that schools to which households send boys are more expensive than the schools in which households enroll girls.

Because poor households have, on average, more children, the burden of financing education is unevenly distributed across the population. Almost one-half of the poorest households have more than three children, implying that they could not finance all their children in school even if they wanted to. Across the population as a whole, nearly one-half (46 percent) of the households with five children of school age are in the poorest 40 percent of households. However, on a per student basis, the rich spend far more than the poor on primary education. For example, the richest 20 percent of households in Dar es Salaam spend more than 10 times the amount per student as the poorest households in rural areas (Table 4.11).

Opportunity Cost of Education

As the above section illustrates, households are making cash investments in their children's educations. In addition, keeping children in school has an opportunity cost. Households with children in school forego their children's wages in the labor force and/or their help with agricultural and household tasks. Mason and Khandker (1997) reviewed the opportunity cost of children's time in school based on the results from two recent studies.

On average, children not in school work 20 hours per week or more from the age of 7 (Table 4.16). The number of hours that they work increases as they grow older. At every age level, children (especially girls) in school work fewer hours than do children not in school. Furthermore, the number of hours worked by children in school does not increase as they grow older. Thus, families incur a significant opportunity cost by sending even their very young children to school, and this cost increases as their children grow up. For children ages 7 to 9 who are in school, households lose from 9 to 19 hours per week of work. They lose from 26 to 37 hours of work per week for children ages 16 to 18 who are in

Table 4.14: Ratio of Expenditures on Secondary to Primary School, by Expenditure Level (%)

<i>Residence</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Dar es Salaam	2.9	4.6	4.6
Other Urban	5.4	4.3	5.3
Rural	9.8	4.9	8.9
All	8.0	4.9	7.5

Source: HRDS, 1993/94.

Table 4.15: Household Expenditures on Education per Student in Households with at Least One Child in School, by Gender, 1994/95 (Tsh)

<i>Type of Spending</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Primary School			
Boys	2,734	9,391	4,843
Girls	2,764	11,955	5,406
Secondary School			
Boys	56,367	17,756	60,962
Girls	80,901	72,848	55,531

Source: HRDS, 1993/94, updated by inflation to 1994/95 levels.

school.

Table 4.16: Children's Weekly Time Use in Tanzania, by Gender and Age Cohort, 1993

Average Hours Per Worked per Week, Based on HRDS Timelog Data								
<i>Males</i>					<i>Females</i>			
<i>Age</i>	<i>Hours Worked, Children not in School</i>	<i>Hours Worked, Children in School</i>	<i>Hours in School or on School Work</i>	<i>Hours Work Foregone by School Children</i>	<i>Hours Worked, Children not in School</i>	<i>Hours Worked, Children in School</i>	<i>Hours in School or on School Work</i>	<i>Hours Work Foregone by School Children</i>
	(1)	(2)	(3)	(4)=(1)-(2)	(5)	(6)	(7)	(8)=(5)-(6)
7-9	24.0	5.9	38.4	18.1	31.5	12.3	35.8	19.2
10-12	32.9	9.7	39.3	23.2	36.6	10.0	42.5	26.6
13-15	33.8	8.5	47.3	25.3	48.6	11.8	47.9	36.8
16-18	45.5	9.3	49.7	36.3	47.5	10.2	48.6	37.3
19-21	36.1	13.6	39.6	22.4	50.5	31.0	21.2	19.5

Average Hours Worked Per Week, Based on FAST Survey Data								
<i>Males</i>					<i>Females</i>			
<i>Age</i>	<i>Hours Worked, Children Not in School</i>	<i>Hours Worked, Children in School</i>	<i>Hours in School or on School Work</i>	<i>Hours Work Foregone by School Children</i>	<i>Hours Worked, Children Not in School</i>	<i>Hours Worked, Children in School</i>	<i>Hours in School or on School Work</i>	<i>Hours Work Foregone by School Children</i>
	(1)	(2)	(3)	(4)=(1)-(2)	(5)	(6)	(7)	(8)=(5)-(6)
7-9	21.3	12.4	27.2	8.9	35.2	21.1	24.7	14.1
10-12	34.3	17.0	30.1	17.3	49.0	17.4	31.8	31.6
13-15	36.8	12.1	39.3	24.7	54.0	17.5	40.1	36.5
16-18	34.8	8.7	41.0	26.1	56.6	20.9	40.6	35.7
19-21	46.4	10.0	43.8	36.4	54.6	n/a	n/a	n/a

Source: Mason and Khandker, 1997.

Attending school also has an opportunity cost for children. At every age level, children in school spend significantly more time engaged in productive activities (school work, labor market activities, and household tasks) than do children not in school. Indeed, even children ages 7 to 9 who are in school are spending 40 to 48 hours per week on productive activities. Children ages 7 to 9 not in school spend from 21 to 35 hours per week on productive activities.

Households incur significant opportunity costs sending all of their children to school. However, for children under 18 years of age, the opportunity cost of sending girls to school is significantly higher than the opportunity cost of sending boys. For example, if boys ages 13 to 15 are in school, households lose about 25 hours of work per week. For girls of the same age, they lose about 37 hours of work.

DEMAND FOR EDUCATION

Parents' Perceptions of the Quality of Education

Late entry enrollments and early exits suggest that many parents perceive that schooling has less value than alternative ways for children to spend time. Particularly startling is the finding from time logs

that young boys who are not in school tend to spend their time playing rather than working. This implies that the perceived value of schooling is very low.

In the HRDS, respondents were asked for their opinions about various quality-related features of the nearest government primary school. Because the government has retained a monopoly on primary schooling, this is the only option available. The features reviewed included (a) qualifications of teaching staff, (b) qualifications of head teacher, (c) adequacy of supplies, (d) state of physical infrastructure, and (e) self-reliance work. Responses suggest that households are dissatisfied with several aspects of the educational services. The most obvious shortcoming is in supplies and infrastructure (see Table 4.17). Overall, only about 13 percent of respondents who had children in primary school stated that the adequacy of supplies was "good" or "very good," and a full 57 percent said that supplies were "poor" or "very poor."

Table 4.17: Ratings of Government Primary School Quality (%)

<i>Characteristic</i>	<i>Very Good or Good</i>	<i>Adequate</i>	<i>Poor or Very Poor</i>	<i>Total</i>
Teachers' Qualifications	33.8	44.2	22.0	100
Quality of Head teacher	39.1	46.7	14.2	100
Adequate Supplies	13.3	29.3	57.4	100
Physical Infrastructure	17.6	38.7	43.7	100
Self-Reliance Work	31.2	46.7	22.1	100

Source: HRDS, 1993/94.

About 44 percent of respondents rated the infrastructure as "poor" or "very poor." In contrast, teachers and headmasters generally were viewed as adequate or better, although a significant minority of the respondents (about 22 percent) had strong negative opinions about teacher qualifications and self-reliance work. There were very few differences in perceptions among regions (rural and urban), or across expenditure groups.

Cooksey et al. (1993) found that focus-group respondents vehemently complained about the lack of conscientiousness and integrity of the teaching staff in local primary schools. Omari, Sumra and Levine (1994) similarly found that complaints about personnel were the most prevalent issues raised by parents when asked about the problems with primary schools in eight districts selected for the FAST study.

Willingness to Pay for Improved Education Services

HRDS respondents were asked a series of structured questions designed to determine how much they would be willing to pay for the full-costs of one year of primary school, if the school provided the sort of education that the respondent values³. Such questions solicit information on willingness to pay, but are used primarily to investigate how to improve welfare through public action. The contingent-valuation responses are influenced by the variables that economic theory implies should explain variations across households. Households with more educated heads showed a greater willingness to pay bids than those with less educated heads. Higher income households bid higher than those living in less affluent households. Male respondents, older respondents, married respondents, and more educated

³ The determinants of the willingness to pay for primary education can be divided into four categories: characteristics of the game, characteristics of the respondent, characteristics of the household, and characteristics of the community.

respondents were willing to give higher bids. Clearly income and education measures are significant determinants of the responses.

The main reason for asking the question, however, was to determine how bids from households respond to the characteristics of the local primary school, as measured by an index of quality. This is a subjective measure of quality, but we are also interested in the impact of government district per capita education expenditures as a proxy for objective quality. We simulated the effects of increasing the quality of school, separate from those of increasing government expenditures. Our results showed that increases in the quality index would have a strong impact on how much the household would be willing to pay for one year in primary school⁴. Thus, consumers will pay more, or feel their welfare is enhanced, when specific characteristics they value are improved.

THE SUPPLY OF EDUCATION SERVICES

Policy Framework

Historical Background. Since the time of the Arusha Declaration, Tanzania has recognized the central role of education in the development of people and the nation. The approach taken, in which emphasis was given to expanding access to primary education in rural areas, has had several distinctive elements (see Box 4.4).

At Independence, the education sector was small and fragmented along racial and ethnic lines. There were European, Asian and African schools, with resources grossly skewed away from the latter. The resources expended per student-year in European schools was five times those in Asian schools, and 60 times those in African schools.

Policy changes starting in 1961 were largely designed to promote national unity and eradicate existing inequities. This included abolition of the three racially-defined (Caucasian, Asian, and African) types of schools, and the introduction of a unified system where pupils from all backgrounds were educated together. At the secondary-school level, students were selected to attend boarding schools far from their homes in order to attend school with classmates from other regions. Kiswahili was introduced as the language of instruction in government primary schools, with the explicit intent of promoting a single national

Box 4.4: Features of the Tanzanian Educational System

- The government has been virtually the only provider of educational services, from primary through tertiary and vocational.
- The government sought to make primary education universally available, compulsory, and affordable to the poorest households by subsidizing all costs.
- Large-scale increases in the numbers of primary schools and teachers were brought about through campaign-style programs.
- The structure and staffing of government facilities was based on uniform, enrollment-based standards.
- The government oriented the curriculum and structure of primary-school education to rural life.
- The government limited the number of secondary school and university slots based on projected needs in the formal sector in general, and the civil service in particular.
- The government tried to increase the equity of admissions into the limited number of secondary schools through a quota system that gave preferential treatment to certain disadvantaged groups (e.g., children from disadvantaged districts, girls).

[from the *Social Sector Strategy*, November 1994]

⁴ Simulations were for an increase in the quality index by 5 and 10 points, compared with the initial conditions.

identity.

The policy of Education for Self-Reliance was introduced in 1967, followed in 1974 by the introduction of the Universal Primary Education (UPE) policy. Together, the policies drastically altered the characteristics and size of the educational system. They led to large-scale increases in access to primary schools, and reduced access among primary-school leavers to secondary and higher education. The UPE (1974-1980) virtually ensured that each viable village in the country had a primary school. Thus, primary schools now exist within walking distance from almost all households (see Box 4.5).

Recent Policy Initiatives. In early 1997, the Tanzanian government developed a Basic Education

Box 4.5: Physical Access to Schools

The level of physical access to schools is very high at the primary level, lower for private secondary schools, and very low for government secondary schools. For primary schools, for example, the FAST field study concluded, "In all the eight sites visited, schools were located within walking distance for children. In some areas, like Masangula in Mbozi, parents were able to choose between schools where they would send their children. Similarly, on the road to Lwati, a stretch of six kilometers, there were three primary schools" (Omari, Sumra and Levine, 1994). According to the HRDS, the distance from household to government primary schools averaged about 5 to 7 kilometers in both rural and urban areas.

Secondary schools are far from households in rural areas and highly concentrated in Dar es Salaam. Survey respondents reported that government secondary schools were nearly 52 kilometers away, on average, in rural areas, 14 kilometers away in urban areas outside of Dar es Salaam. In Dar es Salaam, government secondary schools were only about 5 kilometers away (or closer than the nearest primary school).

Private secondary schools, in contrast, were closer to all households than were government schools. This was most apparent in urban areas outside of Dar es Salaam. In rural areas, for example, respondents estimated that the nearest private secondary school was about 34 kilometers away, and in urban areas outside of Dar es Salaam the nearest secondary school was only about 8 kilometers away.

Master Plan (BEMP) to guide education policy for the 1997-2002 period. This plan is budgeted to require approximately US\$375 million.

The BEMP's main goal is to increase primary-school completion rates and improve student performance. It seeks to achieve this by enhancing educational quality, improving access to education, introducing better educational planning, management, and monitoring, and instituting teacher service rationalization. Many of the BEMP reforms enhance local ownership and management of basic education. Approximately 40 percent of the BEMP budget would be managed by schools. An additional 40 percent of the budget is earmarked for teacher rationalization and training. The major BEMP proposals are summarized below:

- Divestiture of school ownership to village and urban ward authorities.
- Enhanced district and school discretion over school management and resource allocations. District authorities and school committees will play a much greater role in recruiting, monitoring, and evaluating teachers. They will also receive block grants that will be used to purchase school inputs (including teaching and textbooks). Authorities will specify what share of the grant should be reserved for non-salary expenses.
- Cost recovery for specific inputs will be introduced to encourage parental contributions

and improve accountability to parents concerning how resources are spent. Matching grant programs will be implemented to further stimulate cost recovery.

- Increased administrative focus on helping communities to deliver education services rather than on providing services directly. The MOEC will focus on policy formulation, planning, and performance monitoring rather than on directly providing education services. Deployment of academic officers, inspectors, and ward education officers will be rationalized. These staff will also increase their efforts in administering advice and information to schools rather than simply reporting school performance to central authorities.
- Augmented teacher quality and instruction time, especially in rural areas. Many “Grade B” and “Grade C” teachers with limited education and training will be replaced with more highly qualified staff. This will be accomplished by implementing a departure plan for teachers with limited skills, providing incentives for more qualified teachers to move to rural areas, increasing districts’ and school committees’ roles in recruiting, monitoring, and evaluating teachers, and increasing allocations to, and the cost-effectiveness of, teacher training. It is anticipated that instructional time will be increased through the enhanced role of school and district authorities in teacher management.
- Increased availability of private provision of basic education.
- Increased government and donor resources available for primary education. A modest increase in education’s share of total recurrent government expenditures, and an increase in primary education’s share of government education spending. Significantly increased donor support of primary education.
- Grants to schools in low-income areas and/or to poor families earmarked for educational inputs.
- Measures to improve girls’ academic performance. For example, the Girls’ Secondary Education Support Project.
- Introduction of a simplified curriculum that will emphasize basic literacy and computation skills.
- Increased community involvement in school construction and rehabilitation. Expansion of multi-grade and multi-shift teaching.

Legal and Regulatory Framework. The legal basis for provision of education is mainly statutory law. The Education Act of 1978 empowers the government to ensure “the promotion of the education of the people of Tanzania and the progressive development of institutions devoted to that purpose, and for securing the effective execution by local authorities under this guidance, control and direction, of the national policy for providing a varied, comprehensive, and nationally beneficial educational service in their respective jurisdiction.” Under that statute, regulations have been created to make primary education compulsory, to ensure the rights of students, to place a ceiling on fees that can be charged in

the public and private schools, and to prevent transfers from private to public schools.

The education system suffers from a lack of enforcement of existing laws and regulations designed to improve quality and increase enrollments. For example, Nditi (1994) reports that statutes protecting the rights of students are not rigorously enforced, and teachers often administer corporal punishment with little regard for students' rights. In addition, compulsory attendance of children over age 7 is not enforced, as evidenced by low enrollment rates and the advanced ages of children in primary school.

Many of the provisions in education sector laws and regulations constrain the delivery of educational services by the non-governmental sector. For example, Section 23 of the Education Act states that a private school must impart education "wholly or mainly in technical fields of learning." This implies that private primary schools are prohibited, as are private teacher-training colleges that prepare teachers for primary schools. Section 32 of the Act empowers the government to take over private schools and constitute them as regional or national schools under certain circumstances. In addition, students in private schools are not permitted to transfer to government schools. Prices in private schools are controlled and tuition is taxed.

Relatively recent policy changes have begun to loosen the constraints on the private-sector provision of both primary and secondary education. Responding to high demand for secondary education and low transition rates between primary and secondary levels, and in the face of tight fiscal constraints, private secondary schools were allowed to operate starting in 1984.

Between 1984 and 1994 the number of non-governmental secondary schools increased from 85 to 298 (Table 4.18). Enrollment in private schools increased from 33,591 in 1984 to 102,805 in 1994. By comparison, the number of state-owned secondary schools increased from 85 in 1984 to 193 in 1994, while enrollment grew from 40,617 to 83,441. In 1994, the 298 private schools accounted for 61 percent of upper, and 57 percent of lower, secondary-school enrollment. Private enrollment in Forms V and VI were only 4,584 in 1994 out of a total of 12,626 (GOT Ministry of Education, 1996).

Table 4.18: Expansion of Private Schools

<i>Year</i>	<i>Number of Private Secondary Schools</i>	<i>Share of Total Secondary School Enrollment (%)</i>
1978	71	35
1980	71	42
1982	82	44
1984	85	45
1986	124	53
1988	175	57
1990	213	57
1992	258	58
1994	298	55

Source: Government of Tanzania, Ministry of Education, Basic Education Statistics, various years.

Organization and Structure of the Education System

The educational system in Tanzania is highly centralized and uniform. Primary education in Tanzania is universal, nominally free (with the exception of a Tsh 200 UPE fee) and, on paper, compulsory. School-aged children are expected to begin primary school at 7 years. Public secondary education is not compulsory and, as stated earlier, tightly rationed. Movement through the educational system is determined directly by students' performance on national examinations (see Box 4.6). The curriculum is established nationally, under the auspices of the Tanzania Institute for Education (formerly the Institute for Curriculum Development).

Primary Education. For primary education, policy is made by the Ministry of Education and Culture (MOEC), and implemented through the local government administration. The MOEC provides teachers, sets standards for physical facilities, formulates sector policies, sets the curriculum, administers nationwide exams, provides textbooks, and posts ministry staff to manage the education system from the districts. It also operates the teacher training colleges in which primary-school teachers are produced.

Box 4.6: Examination System

Advancement from one education level to the next is based on nationwide examinations and continuous assessments. The first examination is encountered in Standard 4. That exam, designed to be diagnostic, informs the teacher and parents about the ability of students to progress further in primary school. Students failing the examination can repeat Standard 4. No other primary-school grades can be repeated. The Primary School Leaving Exam (PSLE) is taken in the last year of primary school (Standard 7) and, in conjunction with district-based quotas, determines advancement to secondary school (Form I).

A similar pattern of diagnostic and then achievement examination is followed in secondary school. A diagnostic exam in Form II leads either to progression to Form III or repeat of Form II. The Form IV exam punctuates the transition from lower to upper secondary school. The Form VI examination is required for University entrance, with some allowances made for mature-age applicants or equivalents. Private candidates, many of whom study in unregistered schools, are also allowed to take national examinations.

District governments nominally own the primary schools and are responsible for maintaining them and for paying the centrally-established teacher salaries. As in all the social sectors, the local government depends on the central government, rather than its own resource base, for funds. Education is represented at District and Ward Development Committees by the District Education Officer (DEO) and Ward Education Coordinators, respectively. School inspectors work at the headquarters of MOEC, as well as in zones and districts.

As of 1993, there were 10,879 government primary schools, or about 100 per district, and slightly more than one per village, on average. Primary schools typically have about 340 students. Only three regions (Dar es Salaam, Kigoma and Singida) have schools with an average size of more than 500 students. Dar es Salaam has, by far, the largest average school size (1,154 students).

As shown in Table 4.19, a typical primary school has about 9 teachers, each with about 36 students. Classrooms, furniture, and teacher housing are thinly spread. There are 5 children to a desk, only 2 regions out of 20 have more than one table per teacher, and only 5 out of 20 regions have 1 or more chairs per teacher on average.

The for-profit private sector is prohibited from operating primary schools, and to date there are no guidelines to ensure registration and quality control of private primary schools. A limited number of non-profit organizations, including the Aga Khan Foundation and religious missions, have been permitted to run schools. As of 1993, there were 13 privately-operated primary schools. These have an enrollment of just over 5,000 pupils.

Table 4.19: Profile of the Average Primary School

<i>Indicator</i>	<i>Average Number</i>
Students per school	336.1
Students per classroom	66.8
Students per teacher	35.7
Students per desk	4.7
Teachers per school	9.4
Housing per school	2.8
Tables per teacher	0.7
Chairs per teacher	0.7

Source: MOEC, 1994.

The primary-school curriculum in 1993 included arithmetic, Kiswahili, English (from Standard 3

onward), general science (from Standard 3), social studies, work skills, health, and religious studies. Most classroom time beginning with Standard 4 is devoted to predictors of secondary-school success, such as arithmetic and English.

There are 101,816 primary-school teachers in Tanzania, according to the most recent count. About two-thirds of those now in service are trained at the relatively low Grade B or C (see Box 4.7). The remainder are Grade A teachers. Overall, teachers are quite evenly distributed throughout the country, though there are somewhat fewer teachers in rural districts compared to urban areas. Teachers in rural areas also tend to have less preparation than do urban teachers. For example, in 1989, the most recent year for which district-level data could be found, more than 40 percent of the teachers in Iringa Urban District primary schools were Grade A, while only 25 percent of the teachers in Iringa Rural District primary schools had achieved that qualification level. In Kigoma Urban District, 49 percent of the primary-school teachers were Grade As, but in Kigoma Rural, only 21 percent were Grade A. The same pattern is found in nearly all regions.

Across regions, there are large variations in the distribution of Grade A versus other (less well-

Box 4.7: Structure of the Teaching Workforce

There are five basic types, or levels, of teachers in Tanzania, differing by degree of preparation: primary-school teachers can be Grade C, B or A, depending on their pre-service qualifications and training. Higher-level teachers include diploma holders and graduates. Grade C, B and A teachers are eligible to teach in primary school, while secondary-school teachers include Grade A, diploma, and graduate-level teachers.

Grade C school teachers were trained during the period of Universal Primary Education. They have a primary education, and received a "crash course" in teaching methodology before being deployed to teach the lower grades in primary schools throughout the country. Many Grade C teachers subsequently have been "upgraded" to Grade B through intensive in-service training. Teachers are no longer being hired at this level.

Grade B school teachers enter teacher training with no more than a primary-school leaving certificate (having successfully completed Standard VII). Training consists of two years of general education (essentially the equivalent of a Form II education) and then two years of training in primary-school subjects. Grade B teachers can teach in primary schools.

Grade A school teachers enter teacher training with O-levels (Form IV), and having passed at least four subjects at the Form IV level. The training program is two years, and students study 11 primary subjects, as well as teaching methods. The course includes teaching practice.

Grade B teachers can also be upgraded to Grade A, in a two-step process. First, they must upgrade to O-level, which often is done through an "in-service" correspondence course or private secondary schooling. Once they pass their O-level examinations as private candidates, they are eligible for a one-year course in training methodology to attain Grade A status.

Most Grade A teachers teach in primary schools. A few have in the past taught in secondary schools, and a very small number are employed at teacher-training institutions.

Diploma-level teachers enter teacher training with A-levels (Form VI). Individuals completing the two-year course, which includes practice teaching, are hired to teach in lower secondary schools and teacher-training colleges.

Grade A teachers can also be upgraded to diploma level in an intensive two-year course. The training covers material for A-levels in the first year, and then the diploma-level training in the second. To upgrade from Grade A, teachers must have at least three credits at O-level and 3 years of teaching experience.

Graduate teachers, trained in the Faculty of Education at the University of Dar es Salaam, go through a three-year program. Most teach in secondary schools, but some also teach in teacher-training colleges.

prepared) primary-school teachers. The regions that are relatively well-endowed with better-prepared teachers are Dar es Salaam, Kilimanjaro, and Arusha, while the poorer regions of the country have far smaller relative numbers of Grade A teachers.

About one-half of primary-school teachers are female. A disproportionately large number of the female teachers are employed in urban areas. For example, in Dar es Salaam, about 84 percent of primary-school teachers are women, while in Lindi, only 25 percent are female. In all except two regions (Mwanza and Singida), the female teachers are disproportionately the less well-prepared and lower-paid teachers. In Tanga, for example, about 45 percent of Grades B and C, but only 35 percent of Grade A, teachers are female. The same pattern is repeated throughout the country. Female teachers also tend to be less educated than their male counterparts.

During the UPE decade, the focus of education administrators was almost exclusively on increasing the quantity of primary schools. In more recent years, attention has shifted to improving school quality (see Box 4.8). Improvements have been slow in coming, however, and intra- and inter-regional disparities are profound. Even within the same district, there are large differences in performance on examinations. In 1990, for example, performance on the Standard 7 examination varied from a mean of 39.9 percent in Kinondoni Urban to 18.6 percent in Kilosa.

In an attempt to understand why some schools performed better than others, Omari and Mosha (1987) divided a large sample of schools into high- and low-quality and performed in-depth analyses. Results indicated that urban schools consistently performed better than rural schools. The main explanatory variables included higher academic qualifications of teachers, stability of teaching staff (more than five years in one position), better provision of learning and teaching materials, experienced and more academically prepared head teachers, and regularity of inspection.

Secondary Education. In contrast to primary education, government secondary schools are administered directly by the MOEC's Department of Secondary Schools. Secondary-school teachers are employees of the Ministry, and operating funds come directly from the central administration. The Ministry is also responsible for ensuring the quality of the education provided in registered private schools.

As the private secondary-school sector expanded rapidly, several patterns and characteristics emerged:

- The regional disparity in the provision of private schooling is pronounced. There is a heavy concentration of private secondary schools in three regions; Kilimanjaro, Dar es Salaam and Iringa. Very little private provision of secondary schooling is found in Mtwara (less than 3 percent) and Pwani (less than 10 percent).
- Most of the private schools are located in rural areas, while most state-owned schools are located in urban areas and district centers.
- Most of the newer private schools are day schools, rather than boarding schools.
- The majority of the schools under the ownership and management of churches, mosques, and parent organizations are community-initiated. This also includes schools funded by

Box 4.8: Community Education Fund (CEF)

The Community Education Fund (CEF) is a matching grant program that empowers communities to improve their primary schools. The program addresses problems of underfunding and lack of accountability in schools. The Government of Tanzania and the World Bank designed the program through a participatory process involving extensive consultations with beneficiary villages and other stakeholders.

The residents of villages decide by majority vote in a meeting whether to participate in the CEF. If they decide to participate, they establish school funding priorities and set an amount for parents to contribute to the CEF during the first year of the program. The school committee, which is elected by parents, prepares a detailed Three-Year School Plan that includes objectives, a three-year budget, and, for the first year, implementation and procurement plans. The School Plan is cleared by the parents who vote on whether to accept the plan. One-half of the agreed annual village contribution is collected and deposited in the primary school's CEF bank account. After verifying that the community's contribution is in the account, the government deposits a matching grant into the same account. The government matches the money raised by the community on a 1-to-1 basis, currently up to Tsh. 6,000 per pupil (about US\$10). Provisions have also been made for matching on a 1.5-to-1 basis for targeted schools in poorer districts.

Over the course of the following year, the village council and the government conduct periodic reviews of the program. For example, halfway through the year, the village holds a community meeting for the school committee to show progress against the School Plan, account for funds spent, and solicit the second half of pledged parental contributions (which are also matched by the project).

The initial pre-tests have yielded very promising results. Parental contributions have been 10-20 times more than had previously been committed to the schools, largely due to the transparency of the process. In most cases, communities have spent CEF funds on infrastructure and desks. Construction activities under this project have generally been less expensive and faster than those under previous IDA-financed projects. In one school, parents were able to enroll 90 more children in the school without adding teachers, once additional classroom space was made available through the CEF investment.

Previous projects have suffered theft of donated desks and equipment. However, one CEF community reported that under this project there is no fear of having new desks stolen because parents contributed to their purchase. Thus any such thefts would be viewed as neighbors stealing from neighbors. Schools are also keeping careful records of financial transactions. Headmasters value this record keeping so that probity can be established, and parents use the information to monitor program performance. An independent evaluation could not find a single parent in 4 pre-test villages who did not know about and understand the program. Villages have successfully handled subsidies for parents who cannot pay, but no one has been exempted from making some contribution. Finally, teachers have been empowered. For most of them, this is the first time they have been able to help decide what should happen in schools and to assume responsibility for the implementation of plans.

the Cash Crop Cooperatives, Development Trust Funds and Development Associations.

Private schools have come under considerable criticism for providing lower-quality education at a substantially higher cost to households. In an early attempt to address this issue, a study based on 1981 data found that a private secondary-school student would be expected to perform 16 percent better on mathematics and verbal examinations than would a public secondary-school student with comparable family background. The same study found that private secondary schools have unit costs that are only 69 percent of public school costs. Given the performance advantage of private schools, the ratio of relative cost to effectiveness was found to be 59 percent. That is, the same amount of learning in private schools was found to cost only 59 percent of the cost of an equivalent education in public schools (Jimenez et al., 1991). These estimates are rough because of the small sample size, and refer to the universe of private schools in 1981. While they suggest that the private schools may have the potential to offer more education at lower cost, it is important to note that the universe of private schools in 1995 is far different, and probably of lower average quality, than that in 1981. Nevertheless, the impact of private schools cannot be ascertained from overall averages, if only for the simple reason that public schools pick the best students.

Lower-secondary education (Form I to IV) is segmented into four streams for commercial,

agricultural, technical, and domestic science. There are four technical secondary schools (Moshi, Tanga, Mtwara and Ifunda) and four "talented" schools, or schools for pupils who perform particularly well on the Standard 7 examination (Mzumbe, Kilakala, Ilboru and Msalato). Under the draft Integrated Education and Training Policy of 1993, these streams will be abandoned due to high cost, disappointing outcomes, and logistical problems in implementation.

Forms V and VI are not diversified, but instead adhere to traditional subjects. These include physics, chemistry, mathematics, geography, biology, accountancy, bookkeeping, education, Kiswahili, literature and commerce. Pupils take a combination of three subjects, designated as science and arts streams. There are three technical high schools (Arusha, Mbeya and Dar es Salaam Technical Colleges) with small enrollments.

There were 9,568 secondary-school teachers in Tanzania in 1993. Twenty percent of the secondary-school teachers are female. Of all secondary teachers, the vast majority hold diplomas, and a small number are graduates of the University of Dar es Salaam Faculty of Education. Private schools have a somewhat heavier concentration of graduate teachers than do government schools (Table 4.20).

Table 4.20: Qualifications of Teachers in Government and Private Secondary Schools

<i>Type of Secondary-school Teacher</i>	<i>School Ownership</i>		
	<i>Government</i>	<i>Private</i>	<i>Total</i>
Diploma	4,064	1,759	5,823
Graduate	833	681	1,514
All	4,897	2,440	7,337

Source: MOEC, 1992.

Performance varies widely among the different types of secondary schools in Tanzania. Based on examination results, all-male seminaries typically are top-performers, closely followed by single-sex government boarding schools. Co-educational boarding schools also perform relatively well. The schools that perform most poorly are private and community day schools. These comparisons are made hesitantly, as they do not account for the variety of factors that should be considered in assessing a school's impact on performance.

Other Vocational, Technical and Academic Opportunities. Vocational and technical training opportunities exist, but are very limited in number. For primary-school leavers, about 114 government-owned basic vocational training centers and institutes offer a total of 25,000 places to learn practical skills such as handicrafts and tailoring. This level of training includes the 52 Folk Development Colleges that were established to provide rural-based training opportunities to literate primary-school graduates. For the most part, these basic vocational training centers are designed to provide skills for informal sector workers.

Students with at least some O-level secondary schooling may attend a vocational training institute operated by a government ministry. The 153 vocational training institutions have traditionally trained agricultural, engineering, medical, and education workers for government employment. These institutions grant certificates and/or advanced certificates, and a few also grant diplomas. A dozen of the training programs are closely affiliated with parastatal enterprises, and the rest are directly under ministerial control. The Ministry of Education's teacher-training colleges constitute the largest number of institutions in a single category. About 11,000 students (or 38 percent of all trainees) are enrolled in institutions that grant certificates for A- or B-level teachers. The Ministry of Health, with about 4,800 students in certificate programs (or 17 percent of all trainees), has the second largest set of training

activities.

Students who have successfully completed their A-level education with high passes on the examination may enroll in one of 14 technical-training institutions, or one of the three universities, all of which are relatively autonomous organizations operated under the auspices of MOSTHE. The technical institutions, which grant diplomas, advanced diplomas, and professional degrees, provide technical training in management, business, secondary-school teaching, journalism and similar fields. At the universities (University of Dar es Salaam, Muhimbili University College of Health Sciences, Sokoine University of Agriculture, and the Open University of Tanzania) students can earn baccalaureate and higher degrees.

Teachers, Textbooks, and Management in Primary Education

The problems facing the educational system in Tanzania are myriad. In this section, we cover three of the constraints that most severely affect the sector's ability to meet its goals for high-quality universal primary education. These are problems related to primary-school teachers and their training, the production and distribution of textbooks, and education management.

Teachers. There is no shortage in the absolute number of teachers in Tanzania⁵. However, there are clear problems in the recruitment and deployment of qualified primary- and secondary-school teachers. Most of these problems are linked to the underlying structure of the workforce. For instance, relative to the number of Grade B teachers, there are too few Grade A primary-school teachers. The Grade B teachers are more likely to be found in rural areas and are more likely to be female, while the Grade A teachers are disproportionately found in urban schools and are more likely to be male. In secondary schools, there appears to be a mismatch between the subject-area requirements within secondary schools and the availability of trained teachers with relevant specializations.

- MOEC is responsible for assigning recent graduates of teaching-training colleges to the various regions. The assignment attempts to match graduates' stated preferences with the requirements submitted by the Regional Education Officer (REO). Once the regional assignment is made, the responsibility for district placement falls to the REO. The District Education Officer (DEO) assigns new teachers to specific schools and classes. Although the DEO submits specific requests for teachers, he or she does not know in advance how many teachers will arrive at the start of a term.
- MOEC compiles no statistics on whether teachers show up at their assigned posts. One study found that in the Morogoro Region in 1989, only 118 out of 174 teachers assigned to that region actually arrived (World Bank, 1991, p.10). It is likely that an even higher proportion of teachers fail to arrive at less desirable regions, such as the Mtwara and Lindi regions.
- Within primary schools, there is little room for flexibility in staff deployment. The official formula permits one teacher per stream, an additional teacher for schools

⁵ This statement is made on the basis of the relatively low pupil-teacher ratios prevailing in the country, and analyses in the study, "Teachers and Financing of Education" (World Bank, 1991). It is important to note, however, that MOEC consistently stresses that a shortage exists.

offering Standards 5 to 7, a head teacher, and a teacher specialized in music and crafts or vocational and technical training. For relatively large schools (with more than 14 streams), an assistant head teacher is allowed.

- The financial pressures associated with a large teaching workforce prevent the government from providing teachers with salaries commensurate with a valued profession. While the government's total wage bill has grown, the real wages of individual teachers have failed to keep up with inflation. Teachers are demoralized, as reflected in recent strikes in some parts of the country. Unfortunately for the system's long-term prospects, the teachers who are the most satisfied with their pay and work are those who have the least amount of training, and are the least likely to contribute to improvements in the quality of Tanzanian education.

Two basic problems related to teacher compensation are worth highlighting:

- *Teachers' salaries are too low to attract high-quality workers.* As has been widely reported, the salaries offered to teachers generally are too low to sustain a household. Low wages, combined with low prestige of the occupation, contributes to the inability of the sector to attract the highest-quality candidates. The vast majority of primary teachers fall into the lowest categories and are paid less than Tsh 10,000 per month (now valued at US\$20).
 - A 1991 study determined that the average gross salary of primary and secondary teachers was insufficient to feed the average household. It was recommended that "to ensure a reasonable standard of living and to increase productivity significantly in the public service would probably require salary increases by a factor of 3 to 5 times their existing levels" (World Bank, 1991, p. 18).
 - The teachers surveyed in 1991 who were the most dissatisfied with their jobs were the more highly educated secondary-school teachers, and younger Grade A primary-school teachers. For example, only about 45 percent of secondary-school teachers said that they were satisfied with their jobs, and only 43 percent stated that they were planning to stay in their positions. These are individuals who are likely to have alternative career opportunities. This is consistent with some limited data on attrition of teachers. Attrition rates among primary-school teachers is low (estimated at 3-5 percent annually), while attrition rates among secondary-school teachers are at least twice as high (World Bank, 1991).
 - The concern that teaching is an unattractive profession is also backed up by the *decline* in the number of graduate-level teachers from about 1,600 to 1,500 between 1989 and 1992. These findings indicate that few strong candidates are entering the profession, or are being retained in their posts. As stated by the Task Force on the Education System for the 21st Century, "The teaching profession does not attract the highest achievers. It is among the last professional choices of able secondary-school graduates" (MOEC, 1992b).
- *The wage "signals" sent to teachers do not encourage change in the right direction,*

toward higher quality trainees and teachers. The salary adjustments of the late 1980s sent the “wrong signals about the value of teachers with higher qualifications” (World Bank, 1991, p.18). That is, the least qualified primary-school teachers (Grade B) were given the largest relative increase in wages during the adjustment. As a consequence, the differentials in salary between teachers with the lowest and highest qualifications declined from 2.4 to 1.6 between 1978 and 1990 (World Bank, 1991). The minimum salary (including monetary allowances) for a teacher who has had only a primary-school education and four years of government-financed teacher training is Tsh 6,592 per month, while the salary for a two-year trainee who started with a Form IV education is only Tsh 8,107. Given that the lower-level Grade B teacher can move into a higher salary range simply by accruing time on the job, there is little difference in the expected lifetime earnings of Grade B and Grade A teachers. The economic “signal,” then, is that it makes sense for individuals to enter teacher-training college with little academic preparation, obtain a government-financed education to the equivalent of Form II, and then leave training to a secure job.

Textbooks. Since Independence, the state has had an effective monopoly over the preparation, production, and distribution of textbooks, closing out private investment in the subsector. As a result of well-documented inefficiencies, a tight budget, and several donor projects that supported the government’s policies (including World Bank projects), the shortage of textbooks is precipitating major policy change.

- Manuscript preparation has been under the domain of the Tanzania Institute for Education (formerly the Institute for Curriculum Development), and has been seen as a natural adjunct to the Institute’s responsibilities for curricular development. The Institute has been widely criticized for frequent curriculum changes, slow manuscript production and, in many cases, poor quality of curricular products. Among the problems at TIE are financial constraints, low staff motivation, inability to develop medium- and long-term manuscript preparation programs, lack of pilot testing and evaluation, and a limited pool of authors (Zayumba, 1994).
- Nearly all publishing has been done by the government and parastatal publishing houses using donor-supplied paper. Lack of funds, unpredictable payments by the government to the parastatals for work completed, lack of expertise, and a host of related problems have led to a situation in which delays in publishing manuscripts are typically three to eight years (Zayumba, 1994).
- Once published, the books are distributed very slowly. For many years, Tanzania Elimu Supplies (TES), a parastatal organization, was the sole distributor of primary-school textbooks and other school materials. This effectively “crowded out” the private distribution networks, including most booksellers. Once printed, books would be delivered to TES warehouses and would then be distributed to districts and schools. Because of financial difficulties, however, this system broke down and the government took over the distribution role through the Ministry of Education and Culture and the Prime Minister’s Office. Commonly cited problems with the system are lack of coordination, leakage of goods out of the storage and distribution system, and a simple inability to move sufficient numbers of textbooks into the rural schools and the hands of

students (Zayumba, 1994).

- A 1995 survey assessed the availability of teaching materials (Hedkvist, 1996). The study concluded that for the education system as a whole, the government's target of a book to student ratio of 1:3 for each subject in each standard is largely met. However, textbooks are distributed somewhat unequally across districts. Thus, many individual districts fail this standard for some subjects. Further, even when districts achieve the 1:3 ratio at the school level, they fail to achieve this standard at the classroom level. Indeed, only a few districts in the survey were meeting the 1:3 ratio at the classroom level in more than one subject area (see Box 4.9).

The result of this system has been to make private procurement of most textbooks illegal, and access to publicly-provided textbooks difficult. Parents who seek to purchase textbooks for their children can technically be deemed criminals. In addition, teachers have incentives to hoard, rather than use, the few textbooks that make their way to the schools. In short, the system has been a failure, a fact that is widely recognized by specialists, teachers and parents. It has essentially removed a key educational input from the school system. It is important to note that the problem of textbook production and distribution is being given intensive attention, particularly with the assistance of the Swedish International Development Authority.

Management. The problems in the education sector are exacerbated by constraints in the institutional framework and by weaknesses in managerial operations. The fragmentation of institutions, in the form of five Ministries involved directly in education (Ministry of Education and Culture, Ministry of Science, Technology and Higher Education, Ministry of Labor and Youth, Ministry of Regional Administration and Local Government, and the Ministry of Community Development, Women and Children's Affairs), is arguably the most serious constraint as it hinders rational planning and efficient utilization of resources. It does not allow for the reallocation of resources according to national priorities because each ministry defends its own agenda and priorities.

- Within ministries there are a number of organizational constraints. The Planning Directorates are mostly concerned with budgeting problems and are not engaged in program and policy development, setting program targets, evaluating strategies, and carrying out cost-benefit and cost-effectiveness exercises. Data collection and analysis is carried out under the Directorates of Planning. However, while good data are collected, in many instances they are not analyzed in relation to the pervasive problems affecting the ministry concerned. Most of the implementation Directorates are concerned with routine administrative matters to the detriment of professional development activities.
- The school inspectorate system is well established in Tanzania but has very little impact on qualitative improvements in education. The major constraint can be traced to the issue of accountability. Inspectors have no professional responsibilities for the schools they supervise, apart from routine reports made to the Commissioner of Education.
- In primary and basic education, the roles and inter-relationships between MOEC, the Prime Minister's Office, and local governments are unclear and frequently dysfunctional. Local governments are charged with the delivery of educational services, but are dependent almost totally on central level funds. When these funds are eventually

Box 4.9: Availability of Textbooks in Primary Schools

In 1995, a random sample of 203 schools in 30 districts was surveyed to assess whether learning materials were available to schools and, within schools, to students (Hedkvist, 1996).^a

The government's objective for textbook availability is a book to student ratio of 1:3 for each subject in each standard. This study demonstrated that the 1:3 ratio is being met in a large number of schools. On average, the 1:3 book to student ratio is maintained or exceeded for all subjects except Kiswahili which has a ratio of 1:3.2. The ratio is 1:2 or better for science, history and mathematics.

Book availability within individual districts is relatively good. If books from all subjects are counted together, 27 of the 30 districts surveyed achieve a 1:3 book to student ratio. Within subjects, the results are mixed. Twenty-one of the 30 surveyed districts do not achieve the 1:3 standard for Kiswahili, 13 districts miss the standard for Kilimo, 14 do not meet the standard for home economics, and 12 fail the standard for geography. Of the 30 districts surveyed, Rufiji had the poorest book to student ratios despite being located relatively close to the nation's central store for textbooks in Dar es Salaam.

The availability of books in classrooms is much lower than the availability of books in schools. Four of primary school's eight subjects, Kiswahili, geography, Kilimo, and home economics, have classroom availability ratios of one book for every ten or more students. The other four subjects, English, mathematics, science, and history, have classroom availability ratios of 1 book for every 5 to 6 students. Availability of textbooks in classrooms is poor in virtually all of the districts surveyed. Only a few districts in the survey were meeting the 1:3 book to student ratio at the classroom level in more than one subject area.

The availability of teaching guides is poorer than the availability of books. Many guides are not available in schools and often guides available in schools are not available in classrooms. The subjects and districts with the lowest availability of books are also those with the lowest availability of guides.

^a The urban/rural population distribution for the sampled schools reflected the country's distribution. The sampling framework was developed such that the results of the survey are assumed to be relevant for 92 of the country's 104 districts.

transferred to local authorities, they are already earmarked, and thus give local authorities no opportunity to respond to local conditions and priorities. The revenue base of local governments is so inadequate that funds levied specifically for education (for example, the UPE contribution) are often not invested in educational services.

- The next level of organization and management is the region. Again the lack of clear and defined relationships between central government education administrators and local authorities constrains effective regional planning and implementation. The Regional Education Office is meant to supervise the implementation of, and supply technical advice to, educational programs in the region. While regional offices are constrained by underfunding, they are constrained even more by not having the authority to set regional priorities and allocate budgets for targeted programs.
- Many would argue that the source of all the institutional and managerial weaknesses in the system is to be found at the school level. Here the constraints hinge on two critical factors: the relationship between schools and their communities, and the quality of school management itself. The issue of accountability is best illustrated in the problems relating to school boards and committees. Schools are essentially accountable to the district and central authorities, and the parents have no real say in the development of their own schools. Even the question of who owns primary schools is unclear. It seems that due to the fact that local communities do not constitute legal entities, they cannot legally own schools despite their responsibility for the schools. The districts own the primary schools, and this distances the institutions, villages, or wards from a sense of ownership. While head teachers are meant to be the executive secretaries of school committees, it is most often the case that the committees are actually controlled by the

head teachers. In addition, school committees tend to concern themselves with student discipline rather than the operation of the school.

GOVERNMENT AND DONOR SPENDING ON EDUCATION

Recurrent Expenditures

In 1994/95, the Government of Tanzania spent about Tsh 83 billion on recurrent education expenditures. Education's share of total government spending was approximately 14 percent annually from 1989/90 to 1992/93. This share increased in 1993/94 and 1994/95, to approximately 22 percent. However, estimates for 1995/96 indicate that education has dropped back to about 15 percent of total social-sector spending.

Education expenditures' share of government spending, net of debt repayment, declined marginally from 21 percent in 1989/90 to less than 19 percent in 1992/93, then increased dramatically to approximately 30 percent in 1994/95. Education was estimated to be about 3.6 percent of GDP in 1994/95, up from 2.7 percent two years earlier. Education's share of total social sector spending has declined slightly from 62 percent in 1989/90 to 58 percent in 1994/95.

Expenditure by Program

While primary education has been the explicit focus of the Tanzanian educational system, this is only weakly reflected in spending patterns. Primary education was budgeted at about 58 percent of total education-recurrent expenditures in 1994/95. Primary education's share of recurrent expenditures has risen over the 1990's, from 46 percent in 1989/90 to an estimated 59 percent in 1995/96. Secondary education absorbed 10 percent of recurrent education spending in 1994/95, down from its 1989/90 level of 16 percent. This downward trend is expected to continue through 1996/97. Teacher training accounted for 2 percent of spending in 1994/95, down from its 1989/90 level of 8 percent. Higher education absorbed 23 percent of expenditures, up from 19 percent in 1989/90. Ministerial administration and other education-related programs accounted for about 5 percent of total recurrent education spending, down from the 1989/90 level of 11 percent.

Inclusion of the development budgets in this analysis has a minor impact on the distribution of resources across education sector programs. Table 4.21 shows the 1994/95 recurrent and development budget expenditures by program. Inclusion of the development budget decreases primary education's

Table 4.21: Distribution of Recurrent and Development Expenditures Among Education Sector Programs, 1994/95

Category	Recurrent		Development				Total	
	Govt.	Share	Govt.	Share	Donor	Share	Govt. and Donor	Share
	(Tsh million)	(%)	(Tsh million)	(%)	(Tsh million)	(%)	(Tsh million)	(%)
Total	82,956	100	1,393	100	4,952	100	89,302	100
Primary	47,756	58	475	34	2,020	41	50,251	56
Total Secondary	7,955	10	210	15	157	3	8,322	9
Technical Secondary	2,265	3	210	15	157	3	2,632	3
Commercial Secondary	2,753	3	0	0	0	0	2,753	3
Agricultural and Other Secondary	2,936	4	0	0	0	0	2,936	3
Teacher Education	2,129	2	33	2	167	3	2,329	3
Adult and Literacy	1,249	2	13	1	0	0	1,262	1
Higher and Technical	19,082	23	371	27	2,160	44	*21,614	24
Other Education	2,133	2	67	5	0	0	2,200	3
Ministry and Regional Administration	2,653	3	224	16	448	9	3,325	4

Source: Follmer and Kessy, 1996.

share of total budgeted expenditures from 58 to 57 percent. Secondary education's share of total expenditures and that of higher and technical education are virtually unchanged. Ministerial and regional administration's share of total expenditures also remain roughly the same.

Expenditure by Input

Table 4.22 shows spending by inputs. Without question, personnel costs dominate spending at the primary-school level, accounting for approximately 70 percent of all expenditures. School examination expenses account for about 20 percent of expenditures, and materials, boarding costs, and other expenditures another 10 percent. Spending on operation and maintenance is not broken down in the local budget, but accounts for less than 3 percent of total primary-school expenditures.

In the budget for 1996/97, the share of total spending on wages increased sharply. On average, personal emoluments accounted for 91 percent of all recurrent costs in the 1996/97 budget estimates for primary schools.

Table 4.22: Input Use in Education Sector Programs, 1994/95 (shares of total program expenditures)

The large share of spending on personal emoluments at the primary level is not due to high teacher salaries, but rather to the size of the teaching workforce in combination with the fact that the education

Input	Primary	Secondary School			Total	Teacher Training
		Technical	Commercial	Agricultural		
Total	100	100	100	100	100	100
Personal Emoluments	70	26	41	40	37	44
Travel and Visits	0	1	2	2	2	3
Operation and Maintenance	0	6	1	2	3	4
Staff Training	0	0	0	0	0	5
Pupil Transport	0	0	0	1	0	0
Student Boarding/Welfare	1	54	43	42	46	36
Materials	7	5	5	5	5	2
Exam Expenses	20	5	4	4	4	5
Hospital Services	0	0	0	0	0	0
Other	2	3	3	5	4	0

Source: Follmer and Kessy, 1996.

sector as a whole is seriously underfunded. The implications of the budget distortions caused by a large

Box 4.10: Uses of Funds for Sample of Government and Private Schools

Table 4.23 estimates expenditures by use of funds for a sample of government and private secondary schools in Tanzania. Analyzing expenditures for specific schools provides a higher assurance of the accuracy of these estimates, and performing these calculations for private schools allows for a comparison of the two types of institutions. These estimations were made for 4 government and 2 private secondary schools in fiscal 1994 (Dar and Levine, 1996). While this very small sample cannot be assumed to be representative of all secondary schools, it nonetheless may provide indications of more general patterns.

For the sampled schools, total expenditures per child in FY94 were 50 percent higher in government schools than in private schools. Furthermore, 57 percent of government-school expenditures were for student welfare and boarding. These expenses accounted for only 23 percent of private-school expenditures. On a per student basis, these expenses were four times as high in government schools as in private schools.

The government schools spent slightly more per student than the private schools on staff salaries. However, because total spending in the government schools was higher per student than in the private schools, staff salaries accounted for 33 percent of total government school expenses, versus 43 percent for private schools.

Private schools spent 24 percent of their budgets on teaching and learning materials. These supplies accounted for only 7 percent of government-school budgets. On a per student basis, private schools spent more than twice as much as government schools on materials.

Private schools had 11 students per staff member, whereas public schools had 10. Government schools had a ratio of 14.6 students to each academic staff member, whereas private schools had a ratio of 17.9. Private schools had lower student-to-staff ratios for non-academic staff than did government schools.

This analysis indicates that the government schools in this sample spent far more per student than did the private schools. Furthermore, more than one-half of government school expenses were used for student boarding, whereas boarding accounted for less than one-fourth of expenditures for the sample private schools. The government and private schools had relatively low student-to-staff ratios, and staff expenses per student were relatively equal across the two types of schools. This small study indicates important similarities and differences between government and private schools. If this same analysis were done on a regular basis for a representative sample of schools, and if the results were combined with assessments of students' academic performances, the results could be very useful in helping improve school quality and efficiency.

teacher workforce are profound. By all measures, the size of the government's wage bill in the education sector (as well as expenditures on student boarding in secondary schools) is squeezing out expenditures on complementary inputs. These include books, school supplies, and school maintenance. The shortages of basic educational inputs in both primary and secondary schools has been well documented (Planning Commission, 1991; UNESCO, 1989). For example, MOEC estimates that there is a shortage of nearly

850,000 student desks in primary schools (MOEC, various years). Despite many studies drawing attention to the problems, and despite significant, targeted donor contributions, many classrooms still have few or no textbooks (see Box 4.9), and chairs, desks, and buildings are in disrepair.

At the secondary-school level, the largest expenditures are on boarding costs. Student welfare (room and board) accounts for about 46 percent of total spending. Personnel costs account for another 37 percent. In teacher-training schools, student boarding and welfare expenditures account for 36 percent of total spending, and personal emoluments, 44 percent. The secondary schools and teacher-training colleges are as much student hostels as they are educational institutions. Box 4.10 examines the expenditures of a small sample of government and private secondary schools, using data presented in Table 4.23.

Donor Spending

Donors in the education sector concentrate their spending on post-secondary and primary education. Donors were budgeted to spend Tsh 4,952 million (approximately 5 percent of total non-household expenditures) in the sector in 1994/95. Donor funds accounted for approximately 13 percent of non-household higher-education spending, 4 percent of non-household primary-school spending, and 2 percent of non-household secondary-school spending. In general, donor funds are allocated to construction and rehabilitation of facilities, provision of textbooks, equipment and materials, and training of managers.

Table 4.23: Expenditures for Sample Government and Private Secondary Schools

	Percent of Expenditures		Expenditures per Student, FY94 (Tsh)	
	Public Schools	Private Schools	Public Schools	Private Schools
<i>Staff</i>				
Salaries	20%	21%	12,571	8,472
Other	13%	22%	8,411	9,029
Total	33%	43%	20,983	17,501
<i>Students</i>				
Food and Boarding	56%	22%	36,297	9,090
Other	1%	1%	457	433
Total	57%	23%	36,754	9,523
<i>Other Expenditures</i>				
Teaching/Learning Materials	7%	24%	4,251	9,833
Others	3%	10%	2,011	4,143
Total	10%	34%	6,263	13,976
TOTAL	100%	100%	64,000	41,000
Student to Academic Staff Ratio	14.6	17.9		
Student to Non-academic Staff Ratio	34.2	29.5		
Total Student Staff Ratio	10.2	11.2		

Source: Dar and Levine, 1996.

The major bilateral donors in primary education are Denmark, Ireland and Sweden, with the UK planning a large-scale increase in the near future. At the secondary level, major bilateral donors include Denmark, the UK, Germany and Norway, and at the tertiary level, Sweden, Denmark, Norway, Germany and Ireland. Among multilateral donors, the European Union is active on all three levels, the World Bank focuses on the primary and secondary sub-sectors, and UNICEF concentrates its funding on the primary level (DANIDA, 1994a and b). For a more detailed review of donor funding in the education sector, see Box 4.11 on the next page.

Unit Costs

In 1995, the government's recurrent budget expenditures were Tsh 12,600 per pupil for primary schools, Tsh 95,300 for secondary schools, Tsh 131,000 per pupil in teacher training colleges, Tsh 716,700 in technical institutions, and Tsh 3,324,200 at the two universities (including study abroad).

Inclusion of recurrent expenditures funded through the development budget results in a small increase in total per-unit expenditures in some programs. Per-unit primary-school expenditures remained constant at 12,600 Tsh, but secondary-school expenditures increased from Tsh 95,300 to Tsh 96,300. Teacher-training and technical college expenditures remained constant, but university expenditures increased from Tsh 3,324,200 to Tsh 3,332,800.

Primary Schools. The 1994 small-scale FAST study of the costs of education found that approximately Tsh 5,000 was expended annually by the government on each primary-school student in each of eight districts visited. Compared to the per-student expenditure derived from government budgets for that year, this suggests that about one-quarter of primary-school expenditures are devoted to administrative expenses from the district on up.⁶

Secondary Schools. Another small study found that unit costs at private secondary schools were 59 percent of those at public secondary schools (Jimenez et al., 1991). Similarly, a 1992 study in the Lake Zone found that the total unit costs in public schools were Tsh 13,000 (or 18 percent) higher than those in private schools. The average unit (recurrent) cost in public secondary schools was estimated at Tsh 73,000 per year, as compared to Tsh 60,000 in private institutions (Babygeya, 1993, quoted in Galabawa, 1994).⁷

Teacher-Training Colleges. Costs per trainee-year in teacher training colleges vary widely, depending on the size of the class and type of training. By far the most costly programs are those which offer only in-service training. The next most expensive programs are those which train Grade B teachers, either with or without in-service adjunct courses. Remarkably, the colleges that produce the most highly trained teachers (both Grade A and diploma courses) are the least expensive. In fact, one year of training in a Grade A/Diploma teacher-training college is estimated to be approximately one-tenth the cost of one year of in-service training.

⁶ Readers are cautioned to interpret these numbers cautiously, as they are based on a small sample.

⁷ Note that these figures include private contributions. In the case of government schools, an average of Tsh 19,000 was contributed by households, while that for private institutions averaged Tsh 25,000.

Box 4.11: Recent Donor Initiatives in the Education Sector

Donors fund 6 percent of all non-private expenditures in the education sector, with 41 percent of their funding going directly to primary (basic) education. This support accounts for approximately 8 percent of all non-private expenditures on primary education. Donor countries support improvements in the quality of, and access to, basic education. They also seek to improve cooperation and centralization of individual programs. In higher education, donors seek to improve teaching skills in training for trades and professions in both vocational and university programs.

DANIDA (the Danish government's aid agency) is the largest donor in the education sector. It is currently embarking on a three-year support and expansion phase of its Primary Education Program (PEP). A pilot program focusing on improvement of teacher and student performance levels, PEP is now budgeted at approximately US\$ 3 million per year. On the secondary-school level, Danida funds a nationwide school rehabilitation project, maintaining and improving the physical plants and facilities of these schools. Danida works closely with Sweden's aid agency (SIDA) and the Vocational Education and Training Authority (VETA) on the tertiary and vocational levels of education, contributing to various regional vocational and training schools throughout Tanzania. Total DANIDA spending in the education sector has risen from US\$ 3.6 million in 1991 to US\$ 7.7 million in 1993. DANIDA expects to increase funding levels for education in the coming years.

The Overseas Development Agency (ODA) is planning to substantially increase its support to the education sector by focusing on government initiatives in basic education, such as improving the primary-school curricula, the training of teachers, and the efficiency of examinations. O.D.A. is also promoting an increase in the number of English language courses taught in primary schools. In secondary education, O.D.A. focuses on improvement and extension of the teaching of the English language to students and teachers. O.D.A.'s focus on the tertiary level is to increase funding to the Ministry of Education and Culture (MoEC), thereby insuring coordinated efforts. It is also pushing to improve the quality of European aid to education by strengthening its own ties and activities with the European Union (EU), as well as by promoting coordination with the government's Planning Commission. O.D.A. also seeks to improve the quality and availability of education to girls.

The International Development Agency (IDA) sponsors the Community Education Fund (CEF) which has the specific goal of improving community and parental involvement in primary-school planning and budgeting. IDA also sponsors the Girls' Secondary Education Support Project (GSES), a US\$ 4.1 million effort that targets girls in poorer communities and attempts to improve their chances of successfully completing secondary school. However, IDA's largest initiative in the education sector is its Education Planning and Rehabilitation Project, budgeted over six years at a total of US\$ 67.5 million. With US\$ 38.3 million of that total amount designated as a loan, the Project has three goals: to strengthen the planning and implementing capacity of institutions to allow for the improvement of training of education managers; to improve the overall quality of primary- and secondary-school education by strengthening the Institute of Curriculum Development and improving school libraries; and to improve the utilization of non-government resources and support for education by establishing the National Education Trust Fund (NETF). The NETF was designed to provide matching grants to communities that give priority to increasing the enrollment levels of girls, and that demonstrate efforts at decreasing the inequalities girls face at the secondary-school level. All-boy schools are not eligible to receive any NETF funding.

SIDA focuses its efforts on the production of textbooks for primary schools. It is the predominant financier of the book management unit in the MOE, and helped to increase the number of textbooks in circulation from 632,000 in 1988 to more than 4 million in 1994. SIDA also funds a program aimed at improving training for primary-school teachers. In vocational schools, SIDA is heavily involved in many regional projects, attempting to improve the quality of the country's skilled workforce. It also works closely with VETA in this area.

NORAD (Norway's aid agency) is a major donor to tertiary education, funding numerous programs in Tanzanian universities and technical schools. NORAD's efforts are aimed at everything from training students in maritime skills, to enhancing an animal science program in hopes of making post-graduate work possible in this field. NORAD also funds the National Education Trust Fund (NETF) that seeks to support and promote community initiatives undertaken to enhance the quality and availability of secondary schools.

The **Dutch** have announced their intentions to increase support for basic education in many developing countries. This represents a break from their traditional support that was aimed at tertiary education. They will promote this new strategy through multinational and bilateral channels. Two-thirds of all of Holland's increased aid will be given to the Sub-Saharan Africa region. The initiatives range from a children's book project focused on the Kiswahili region, to a teaching-methodology improvement project. Although specific program funding is not yet available, the Dutch have committed US\$ 7.8 million to the Tanzanian education sector for the years 1995 through 1998, and approximately US\$ 1.7 million to local government training programs from 1995 to 1997.

Irish Aid has an education project slated to last until 2000. Its objective is to improve the teaching of math and sciences at the primary level through direct support to teachers and regional schools at the district level, and indirect support through zonal and national programs. Irish Aid also funds various vocational- and university-level programs aimed at improving engineering skills, agricultural techniques, and mathematical skills. The Irish spend approximately US\$0.9 million annually on education projects in Tanzania.

GTZ offers a combination of technical and financial assistance to the Christian Social Service Commission (CSSC) for the improvement of services in secondary schools run by churches. The main focus of GTZ however, is on the tertiary and vocational level, where they support many programs. After assisting with the creation of the Technical College in Arusha until 1986, GTZ is now supporting the foundation of a training course there for road technicians. Other projects receiving GTZ support include the establishment of the Institute of Product Innovation at the University of Dar es Salaam (UDSM), and aid to agricultural and orthopaedic training universities.

UNICEF has declared that universal primary education is its education priority in Tanzania, targeting girls and women specifically. The organization includes much of its funding for primary schools in its umbrella-like *Programme for Child Survival Protection and Development in Tanzania*. Aiming at strengthening the ability of local communities to provide care and education for children, this program provides funding to various regional and local projects, espousing grassroots educational planning as opposed to the traditional top-down method. Examples of this include the training of school committees, support to teacher centers, and the strengthening of district and ward support systems. UNICEF also supports an AIDS education program in primary schools throughout Tanzania. Adult education and early childhood development are promoted as supporting strategies to UNICEF's primary-school efforts.

The European Union (EU) supports the Government of Tanzania (GOT) initiatives in general, as opposed to funding specific programs on their own. Accordingly, the EU has recently approved programs designed to support GOT efforts in all levels of education by providing funding which allows the GOT to evaluate programs in detail and budget for them accordingly. The EU also advocates the coordination of donor efforts in the education sector, calling for cooperation with GOT and MOEC initiatives.

RETURNS TO EDUCATION

To estimate the net gains from education, it is necessary to compare costs and benefits. The most tangible benefits of education are the higher earnings that accrue to individuals with more education. Education may also bring many non-monetary benefits to households and societies. For example, increased education may convey a general increase in household and societal welfare, a reduction in crime, better health and hygiene, and lower fertility rates. However, these benefits are difficult to estimate and are therefore excluded from this analysis. This implies that the benefits used in this exercise are lower-bound estimates of the true benefits to individuals and society that accrue from education.

Excluding non-earnings benefits, the private rate of return to a level of education is estimated by comparing the present value of the earnings differential between two levels of education⁸ with the economic (out of pocket and opportunity) cost incurred by a household in obtaining the higher level of education. For example, a rate of return of 3.6 percent on primary education implies that if an individual invested Tsh 100,000 on an additional year of primary school, his or her annual income would be Tsh 3,600 higher than it would have been if the individual had not undertaken the additional year of education.

This analysis also excludes non-earnings benefits from social rates of return. Thus the social benefits to education are also assumed to be the earnings differential between people with different levels of education. These are compared to the societal costs of education, including the full direct and indirect costs (including opportunity costs) of education borne by households, businesses, and the government.

This section reviews estimates of the private and social rates of return to education in Tanzania. Because non-monetary benefits are excluded from this analysis, the results are lower-bound estimates of actual returns. These results should be interpreted with caution for several reasons. First, the number of observations, particularly at the university level, are few. Second, due to data limitations, this analysis is confined to formal sector workers who account for less than 10 percent of the overall workforce. This is likely to bias upwards the rates of return, especially at lower levels of education⁹. Third, the rates of return may also be biased because over 65 percent of the sample analyzed is employed in the public sector where pay scales are set administratively and may have little relationship to productivity. However, the general trends in this rate of return analysis are similar to those found for other countries (Psacharopoulos, 1993).

Private Returns

Private rates of return to education in 1990/91 have been computed by estimating an earnings function that controls for human capital characteristics (education and training) along with individual, regional, and labor market characteristics (Dar and Levine, 1996).

⁸ Private rates of return should be based on net (after tax) earnings. However, this information was not available. Thus, the earnings used in this analysis are gross (before tax).

⁹ This is especially the case because several studies have found that the return to education for people engaged in traditional agricultural production is significant but relatively low (Mason, 1996).

On average, private rates of return are 3.6 percent for primary school, 6.9 percent for secondary school, and 9.0 percent for University. Rates of return are significantly higher for women than for men at all three levels of general education, but especially at the primary-school level. Private rates of return increase sharply with education levels for men but are relatively flat for women (Table 4.24).

On-the-job training has by far the highest rate of return. Rates of return are also much higher for vocational training than for general education. Training, like general education, has higher rates of return for women than for men.

The private rates of return to education estimated for 1990/91 are lower than those reported by Psacharopoulos (1994) for seven sub-Saharan African countries (including Tanzania) in the 1970s and 1980s. Returns for these countries ranged from 8 percent in Ethiopia to 20 percent in Cote d'Ivoire. Psacharopoulos reports that the average return to education in Tanzania was 11.9 percent in 1980 (Mason and Khandker, 1997). This return is slightly higher than the rates estimated above for formal education for women, and significantly above those rates for men.

It is difficult to speculate on the implications of these differences in returns. Tanzania has lower returns to education than many other Sub-Saharan African countries, and its returns may have fallen between 1980 and 1990. However, Mason and Khandker (1997) report that it is likely that earnings' premiums to lower secondary graduates in Tanzania increased from 1980 to 1990. He therefore speculates that the apparent decline in returns to education indicated above may be wholly attributable to declines in the returns to primary education.

It is possible that the differences in returns are attributable to differences in the methods used to make these estimates. Indeed, Mason and Khandker (1997) used the same data as that used by Dar and Levine to estimate private returns to primary and secondary education, but Mason and Khandker's results differ significantly from those by Dar and Levine presented above. Dar and Levine estimated an average rate of return for primary school of 3.6 percent, whereas Mason and Khandker computed a 7.9 percent return. Dar and Levine's average return to secondary school of 6.9 percent was also below Mason and Khandker's 8.8 percent return.

Social Returns

Taking into account the costs incurred by the government, and continuing to exclude non-earnings benefits, lower-bound estimates for social rates of return are negligible for secondary education, and zero for vocational training and higher education. This is mainly due to high public expenditures per pupil in post-primary education as a result of inefficient resource allocation. Thus the economic cost of the public provision and financing of vocational training and higher education are as great as the net

Table 4.24: Private and Social Annual Rates of Return to Education and Training (1990/91)

Group	Education Level			Training	
	Primary	Secondary	University	Vocational	On-the-job
<i>Private Rates</i>					
All	3.6 (2,113)	6.9 (609)	9.0 (41)	19.4 (814)	35.2 (514)
Male	1.9 (1,612)	6.6 (360)	9.9 (28)	17.8 (523)	33.0 (416)
Female	10.8 (501)	9.0 (249)	11.4 (13)	20.2 (291)	35.0 (98)
<i>Social Rates</i>					
All	3.6	1.5	0.0	0.0	

Note: Numbers in parentheses are the number of observations.
Source: Dar and Levine (1996), based on 1990/91 Labor Force Survey.

present value of economic benefits.

In an era of tight budget constraints, the government has to rationalize its expenditure on education so that social returns are maximized. Since social returns decline by education level, efficiency gains will be realized if the government progressively increases cost-sharing (and hence reduces its investment) at higher levels of education, and reallocates resources to lower levels of education. The government should foster private and employer-based training which, in any case, is usually more relevant to market needs than government-managed programs. The fact that the private returns to post-primary education and training are high implies that households should be willing to pay far more than they are currently doing to obtain these services. Loan programs for individuals who do not have the resources to fund their post-primary education could be created or expanded. The high private returns to this education imply that students should be able to repay the loans once their education is completed.

Private rates of return to education are significantly higher for women than for men. However this has not been realized by communities, as evidenced by low enrollment rates of women. Parents should be made aware of the benefits of educating their daughters. Furthermore, because the social rates of return to education are also higher for women than for men, the government could make a greater effort to target education sector resources to programs that benefit women.

THE DISTRIBUTION OF BENEFITS FROM EDUCATION SPENDING

Total Spending on Education

Any estimate of the total amount spent on education in Tanzania necessarily depends on imprecise estimates. However, such an exercise is worth doing to discern, even in rough terms, the absolute and relative spending on critical investments in human capital.

An estimated Tsh 128 billion were spent on education in Tanzania in 1994/95. Households contributed about 30 percent of these funds in the form of fees, expenditures on uniforms, and other inputs¹⁰. Government and donors provided the remainder (about 70 percent).

Distribution of Public Subsidies

Who benefits from government spending on education? According to an analysis of the incidence of the benefits of public spending, a disproportionate share of the benefits are captured by the best-off households. Given the relatively large share of the public budget devoted to secondary schools, the high unit costs of secondary-school education, the limited access to government secondary schools, and the lack of gender parity in enrollment, the government *de facto* subsidizes the children from better-off households more than those from poor households, and male children more than female children. While this result is not an intentional outcome of the Tanzanian educational system, it nonetheless

¹⁰ These estimates were derived as follows: government and donor expenditures were taken from the total recurrent and development budgets, as reported in Follmer and Kessy (1997). Household expenditures were taken from 1993/94 per student levels and updated by inflation and the new number of students for 1994/95. Household expenditures were estimated based on estimated average expenditures of Tsh 6,578 per primary-school student (for the approximately 3.8 million primary-school students) and Tsh 71,704 per secondary-school student (for the approximately 196,375 secondary-school students).

occurs.

In 1993/94, the richest 20 percent of households received about 1.8 times the share of government spending on education received by the poorest 20 percent of households. In 1994/95, the richest 20 percent of households received about 3 times the share of government spending

on education as that received by the poorest 20 percent of households. The benefits of government spending on primary schools are quite uniformly distributed across the population. However, because better-off households are most likely to obtain entrance into government secondary schools, the benefits of the significant public expenditures at that level are primarily captured by households in the upper end of the welfare distribution. In fact, the poorest 20 percent of households realized only 8 percent of the benefits of public spending on secondary schools in 1993/94, while the richest 20 percent captured 34 percent of the benefits (see Table 4.25).¹¹

Table 4.25: Distribution of the Benefits of 1993/94 Public Spending on Education, by Expenditure Quintile

	<i>Lowest 20%</i>				<i>Highest 20%</i>	<i>All</i>
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	
Primary Education	20.0	21.0	21.0	20.0	19.0	100.0
Secondary Education	7.6	12.7	19.1	26.6	34.1	100.0

Source: HRDS, 1993/94; World Bank, 1994a.

CONCLUSION

Education is by far the most important avenue through which families and nations can invest in human capital. Unfortunately, the current state of the education sector that emerges from this analysis of the demand for, and supply of, education is grim. Educational outcomes in Tanzania are poor and, in many areas, worsening. Parents are withholding children from school, and even when children do attend, the quality of the education is jeopardized by ill-prepared, poorly motivated teachers and a severe shortage of basic learning materials. The education of girls, arguably the most essential ingredient for the improved welfare of the next generation, faces the greatest risk.

Based on the preceding analysis, it appears that if little or nothing is done to alter the current course of the education sector, we can expect:

- falling enrollments and increasing illiteracy;
- declining quality at all levels of education;
- continued deterioration in teacher morale and the quality of education infrastructure;
- a rapidly growing number of poorly educated, unemployed youth;
- perpetuation of the already established gender gap in primary education achievement and secondary education enrollment;
- markedly reduced chances for the nation to compete in the international economy; and
- an increasing divide between the education of the wealthy and the poor.

¹¹ Estimates for 1994/95 figures were arrived at by multiplying the 1993/94 quintile shares for education subsectors by each subsector's share of 1994/95 education expenditures.

However, the government has a strong commitment to education which, if implemented effectively, could greatly strengthen the sector. To realize this goal, there are policy initiatives that the government has already begun, or which it might choose to undertake in the future, that would improve the allocative efficiency of government education funding and the operating efficiency of government owned and operated schools. These initiatives are outlined below.

Primary Education. The social rates of return to primary education are higher than the social returns to other types of schooling. Yet primary education is woefully underfunded. Despite very low gross enrollment rates, government expenditure was only about US\$22 per student in fiscal 1995. To ameliorate this problem, the government could speed its practice of increasing primary education's share of total education funding. Indeed, primary education's share of education funding could climb from its current level of about 57 percent to 65 percent within a few years.

Continuing to increase primary education's share of total sector spending will have only a modest impact on primary education funding because other types of education also have relatively small budgets. There is a huge and growing stock of children waiting to go to school. Finally, there has been significant under-investment in maintaining and expanding infrastructure, furniture, books, and equipment. Thus, reversing the decline in primary education will also depend on parents contributing more to local schools. For substantial improvements at the local level to take place, the government can begin to implement policies to decentralize primary education and empower teachers and parents to turn the system around. The government has initiated this effort through a pilot program to increase local communities' financial support for, and administrative and policy management of, primary schools.

As stated in the government's Basic Education Master Plan (BEMP), the government could continue this effort by transferring the title of government-owned primary schools to the local authorities closest to the schools, such as villages or urban wards. In addition, the government could prepare a time-bound action plan to decentralize management and financing of primary education. Under this plan, head teachers could assume primary responsibility for school management, including managing school accounts, hiring and firing teachers, establishing remuneration of teachers, preparing annual school plans, and making decisions about curriculum and textbooks. Head teachers could be chosen through consultation between the school committee and the DEO. School committees could supervise and manage the head teacher and approve his or her decisions.

As identified in the Basic Education Master Plan, the central government could expand its pilot program under which the states make financial contributions directly to schools. This practice would allow school committees to determine their schools' greatest needs and spend funds efficiently to maximize their benefit. The central government could also review the regulatory structure for private primary schools to increase the private sector's ability to enter this market. The central government could modify the roles of the school inspectorate and the ward education coordinators to encourage them to provide general advice to schools concerning ways to make information available to schools about best practice, to help schools prepare good plans, and to help them improve procurement, maintenance, and construction. Finally, the central government could complete its review of the current system of multi-ministerial management of education. It could then determine whether efficiency could be realized by consolidating management of the education system.

Secondary Education. Tanzania has one of the world's lowest secondary-school enrollment rates. To rectify this situation, the government, in collaboration with non-government school operators, could

develop a five-year plan to radically increase enrollments in lower secondary schools. The plan might address the following three areas:

- *Non-government Schools:* Secondary-school enrollment rates have grown steadily since 1986 primarily due to the legalization of non-government schools. For the upward trend in secondary enrollments to accelerate, non-government provision of secondary schooling must expand considerably faster than it has in the recent past. The government could increase incentives for private school creation by removing controls on fees and replacing these with indicative guidelines, by providing good information to schools on unit costs, and by widely distributing information to parents on availability, costs, and performance of secondary schools. A number of other simple reforms would accelerate the creation of private secondary schools. These reforms include eliminating taxes on secondary tuition, allowing free movement between private and government schools, opening up the exam and secondary-school selection system, making available excess capacity in government institutions for non-government operators, and expanding and improving the National Education Trust Fund.
- *Government Secondary Schools:* To expand secondary-school enrollments in government schools, the government could (a) consider secondary and teacher-training colleges as alternatives, and bring the costs of the latter in line with the former, (b) review the feasibility and desirability of converting secondary schools into self-managing, self-financing institutions, removing all restrictions on their ability to accept tuition-paying students, and (c) convert the current system of selection to, and support of, secondary education into a bursary program in which government-funded bursaries are awarded partially for merit and partially to support disadvantaged students, allowing the students to choose the school they want to attend.
- *Secondary Education for Girls:* Secondary enrollment for girls is rising, yet girls remain under-represented in secondary education, particularly in upper-secondary schools. The government could address this issue by evaluating its Girls' Secondary Education Support Program to see if this program could be expanded on a nationwide basis. If the program is not found to be satisfactory, another plan for augmenting girls' enrollments and performance in secondary schools could be developed.

Post-Secondary and Technical Education. Tanzania needs a comprehensive post-secondary and technical education system. However, the social returns to primary and secondary education are much higher than the social returns to post-secondary education. Furthermore, the overwhelming share of the benefits of higher levels of education accrue to better off households. The government could increase the social returns to its education investment by reallocating some of its higher education investments to primary- and secondary-school funding. Students receiving post-secondary education could assume a significant share of the costs currently borne by the government. For households without sufficient savings to immediately meet these costs, a loan system could be developed. The high private returns to these levels of education imply that students who assumed these loans would be able to repay them upon completing their education. To reduce funding for higher levels of education, the government might increase cost sharing in state-owned institutions to a level that would fully fund transportation and boarding costs. Preferably however, the government could convert public schools to autonomous trusts that would receive government subsidies earmarked to only the poorest students. If subsidies to publicly-

owned institutions were reduced or narrowly targeted to the poor, the supply of higher education would probably increase, as private institutions would be able to compete with state facilities.

Other Education Programs and Education Administration. To further free up resources for reallocation to primary and secondary education, many of the non-formal vocational and training programs managed by the Ministry of Community Development, Women, and Children and the Ministry of Labor could be eliminated or the subsidies for them withdrawn. These programs have very high unit costs and are a much lower priority for the government than basic education. Furthermore, the government could simplify the educational administration system by concentrating administration of all education activities within the Ministry of Education.

5

HEALTH

Most health-related investment in human capital takes place outside of the organized medical system through nutrition, proper child care, hygienic cooking and waste disposal practices, healthful behaviors, and so forth. In other words, most of the responsibility for maintaining good health lies within the household. Moreover, it is the household members who have the greatest interest in getting better when they fall ill, and they often make significant payments in time, foregone income, and money costs for curative care.

The results of many health-related investments can be seen in the patterns of disease. In Tanzania, these basic investments have been insufficient to conquer persistent causes of disease and death. Persistent infectious diseases due to poor sanitation, exposure to vectors, and generally unhealthful conditions affect both children and adults in large numbers. New problems, most notably the AIDS pandemic, threaten to reverse improvements that have been achieved in both infant and adult mortality.

In subsequent chapters, we examine the family planning, nutrition, and water and sanitation sectors. In this Chapter, we look specifically at the demand and supply sides of a more narrowly defined health sector. We use household survey data to review patterns of utilization of, and spending on, government and other health services. We then summarize existing information about the characteristics of the Tanzanian health service delivery system.

The picture that emerges is mixed. While access to health services in the narrowest sense is relatively good, the costs have been high and the impact on health limited. As government resources have been pulled toward higher-cost, urban-based facilities, funding has become more constrained for the drugs, personnel, supervision and other inputs required to maintain the function of peripheral facilities. Most seriously, government funding priorities have tended to favor services that benefit individuals over services that have community-wide benefits. Many of the basic preventive services have been funded in large part by external donors. Households invest moderate (and sometimes large) percentages of their incomes on health care. Households show a preference for non-governmental curative services over government-provided ones, when the choice is available.

OUTCOMES AND UTILIZATION

Mortality Levels

Infant and Child Mortality. Infant mortality rates are high, and reductions have been slow in coming. According to the Tanzania Demographic and Health Survey (TDHS, 1991/92), 92 out of every 1,000 children die before age 1, and an estimated 141 per 1,000 children die before their fifth birthday. Analyses of the TDHS indicate that during the 15 years preceding the survey (1977-91), under-five mortality declined from 163 to 141 deaths per 1,000. Essentially all of that improvement is attributable to declines in mortality between ages 1 and 4, as infant mortality appears to have been unchanged over the period.

Levels of infant and childhood mortality in Tanzania are high, but consistent with those in the Sub-Saharan African region and among very low-income countries (see Table 5.1). Surveys currently estimate that infant mortality in the region averages 99 per 1,000 live births, reflecting poor environmental conditions, scarce maternal resources, and the high prevalence of communicable diseases. Similarly, Tanzania's under-five mortality rate is not outside of the range expected, given the country's low income level.

Adult Mortality. Without functioning death registration or reporting systems, estimation of adult mortality rates are only speculative. However, a recent study in three districts (Dar es Salaam, Morogoro Rural, and Hai) that attempted to measure adult mortality disclosed interesting patterns (ODA, 1994).

Using the United Kingdom as a rough standard for adult survivorship and longevity, age-specific mortality rates were at least twice as high in each of the three study sites than in England and Wales. While the largest differential was found in the youngest ages (Tanzanian childhood mortality was 7 to 20 times as high as infant mortality in the UK), adult mortality was also far higher in Tanzania¹. For example, among young adults, ages 15-34, for every 1 death per 1,000 in the U.K., there were about 8 to 10 deaths in Tanzania.

The pattern of women's mortality is typical of countries in which women experience high levels of reproductive mortality. Unlike the developed world, in which a woman's risk of dying is far lower than that of a man of the same age, in Tanzania adult women's risk of dying approaches men's. The maternal mortality rate, which is notoriously difficult to measure accurately, is estimated to be 342 deaths per 100,000 births in Tanzania (World Bank, 1994c).

The distribution of the risk of death throughout the life span highlights the relatively high level of adult mortality in Tanzania. In middle- and upper-income countries, nearly all deaths occur in the

Table 5.1: Infant Mortality per 1,000 Live Births, 1992

<i>Country</i>	<i>Infant Mortality Rate</i>
Ethiopia	122
Kenya	66
Tanzania	92
Uganda	122
Zambia	107
Sub-Saharan Africa	99

Source: World Bank, 1994c.

¹ The range of these estimates is wide because the patterns of mortality varied substantially among the three study areas. Therefore, this summary of complex data is necessarily imprecise.

earliest years of life and, even more importantly, after 55 years of age. For example, in England and Wales in 1990, only about 9.7 percent of all deaths among males and 5.4 percent of all deaths among females occurred between ages 15 and 54. In Tanzania, however, young and middle-aged adults are at far higher risk. The study of adult mortality found that in Dar es Salaam, for example, a full 38 percent of male deaths and 48 percent of female deaths occur between ages 15 and 54.

AIDS is becoming an increasing threat to adult mortality in Tanzania. It is estimated that between one-half million and one million individuals are currently infected with HIV, and AIDS is expected to become the major cause of death among adults within the next several years. Women and men are equally affected. Life expectancy at birth in 1985-90 was estimated to be 1.8 years less than it would have been in the absence of AIDS. In addition, because of the AIDS epidemic, life expectancy is now expected to decline by about 1 year between now and the year 2000 (United Nations, 1993).

Causes of Illness and Death

Infectious Disease.

Community-based studies and healthcare-provider reports indicate that virtually all major health problems of infants, young children, and other vulnerable groups in Tanzania are preventable. Major diseases affecting the population include malaria, HIV/AIDS, respiratory infections, water-borne and water-washed diseases (such as typhoid, cholera, dysentery, and parasites). A recent study by the MOH (1994) estimated that malaria is responsible for about 17 percent of all deaths, perinatal and maternal causes about 15 percent, and diarrheal disease, pneumonia, tuberculosis and AIDS about 5 to 6 percent each (see Table 5.2).

Table 5.2: Total Deaths and Life Years Lost, by Disease

<i>Cause</i>	<i>Deaths</i>	<i>Share of Deaths</i>	<i>Life-Years Lost</i>	<i>Share of Life-Years Lost</i>
Perinatal or Maternal	60,050	14.8	1,781,512	17.5
Malaria	69,174	17.0	1,956,234	19.3
Diarrhea	19,756	4.9	587,147	5.8
Pneumonia	20,744	5.1	616,505	6.1
AIDS	24,441	6.0	639,387	6.3
Tuberculosis	19,334	4.8	513,706	5.1
Protein Calorie Malnutrition	3,254	0.8	96,707	1.0
Measles	3,486	0.9	103,614	1.0
Injury	23,980	5.9	637,155	6.3
Cardiovascular	15,884	3.9	379,712	3.7
All Other Causes	146,262	36.0	2,84,874	28.0
Total	406,365	100.0	10,153,553	100.0

Source: MOH, 1994.

The prevalence of preventable diseases places large burdens on the curative health system. According to spotty epidemiological information from the MOH reporting sites, malaria constitutes the most common reason for attendance at outpatient clinics and hospital admissions. In Iringa region in 1991, for example, 29 percent of patients coming to outpatient facilities were diagnosed with malaria, and 39 percent of inpatients were said to have malaria² (MOH, 1993).

² It is important to note that it is likely that malaria is over-diagnosed. A recent study examined the accuracy of clinical diagnoses of febrile episodes, the most common presentation of malaria. It found the following: rural medical aides generally diagnose all febrile illnesses as malaria. In fact, they diagnose only 13 percent of non-malarial febrile episodes correctly. Medical doctors are more likely to arrive at correct diagnoses of non-malarial illness, but even they are wrong in about one-half of the non-malarial cases.

Respiratory infections, including pneumonia, also consume a large proportion of curative resources. In the Iringa reporting sites, for example, about 29 percent of outpatient visits and 17 percent of hospital admissions were for treatment of upper respiratory tract infections and pneumonia (MOH, 1993).

Diarrheal diseases, nearly all of which are associated with exposure to contaminated food and water (particularly during the vulnerable stage when children are weaning), account for another large share of outpatient visits. In Iringa for example, 16 percent of all outpatient visits to government facilities were diagnosed as diarrheal disease.

Throughout the 1980s, the HIV/AIDS pandemic became an increasing problem in Tanzania. The country now ranks sixth among Sub-Saharan countries in HIV prevalence. While precise estimates are difficult to obtain, the National AIDS Control Program estimates that about 800,000 people in Tanzania are infected with HIV, and AIDS was responsible for about 60,000 deaths by the end of 1990. Within the next few years, AIDS is expected to become the major cause of death among both children and adults. It is anticipated that the spread of AIDS will reverse the reductions in the infant mortality rate (World Bank, 1992).

The burden that AIDS places on health care resources in Tanzania is massive. According to one estimate, the total per case lifetime treatment cost for AIDS patients in Tanzania is approximately US\$290 for adults and US\$195 for children. Currently, AIDS treatment may currently be absorbing as much as 40 to 50 percent of the government's recurrent budget for health (World Bank, 1992).

For policy purposes, it is useful to sketch the distribution of deaths by age and cause, even in the absence of reliable, nationally representative epidemiologic and demographic data³. From the available data, one can conclude that out of every 1,000 children born, 92 will die by the time they reach age 1, another 49 will die by the time they reach age 5, and an additional 70 will die by the time they reach age 15. That is, of 1,000 children born, only about 790 (or 4 out of 5) will survive to age 15. Between age 15 and 34, 200 additional deaths will occur in the cohort, so that 590 will be left of the original cohort by age 35.

Most of the 410 deaths will be caused by infectious diseases. About 120 of those deaths will be caused by malaria. Another 80 will result from respiratory infections, including pneumonia and tuberculosis. Water-borne disease will kill 25 (mostly infants), and AIDS will take the lives of 40 more (mostly young adults).

Utilization of the Health Care System

Accurate utilization and household expenditure data have been sorely lacking in Tanzania, a problem that makes planning, analysis of demand, and estimation of unit costs and productivity nearly impossible. In this section, we present data from the HRDS on household use of health services and health-related expenditures, from which we can better understand the components of demand for health care. In addition, we present information on respondents' views of the quality of the government health

³ Readers are cautioned to interpret the figures that follow in the spirit in which they are presented, namely, as rough, illustrative estimates based on small-scale studies.

services available to them.

About 15 percent of Tanzanians reported being ill or injured during the month prior to the survey, and two-thirds of those sought care. Individuals in the poorest 20 percent of households were about one-half as likely as the richest 20 percent of households to report being sick, and were less likely to seek care if sick (see Table 5.3).

The pattern of greater incidence of reported illness and care-seeking in better-off households is seen throughout the world. This does not imply that richer individuals have more illnesses in an objective sense, but that better-off people are more likely to recognize and acknowledge signs of illness, label those signs as "being sick," and seek care.

Women are slightly more likely than men to report that they experienced an illness or injury in the past month. If they did, they are as likely as men to say that they sought care outside the home (see Table 5.4). As with the rich-poor comparison, this reflects only *reporting* of illness, and not necessarily incidence of illness or injury. In fact, there is reason to believe that women may experience even higher levels of morbidity. Empirical evidence from several African countries (McGuire and Popkin, 1990) suggests that women are more likely than men to be malnourished, because of women's higher energy requirements due to their heavier workload, the demands on their bodies of frequent childbearing, and the preference given to men in intra-family food allocation. Anecdotal evidence seems to show that in some areas of Tanzania, traditions dictate that men eat before women and children. In addition, given the high fertility rates, women are exposed to health problems associated with pregnancy, labor, and delivery. All these factors may contribute to poor health among women. Given their specific role in providing for the health of other household members, the relatively higher level of morbidity of women certainly impacts more generally on family welfare than that of men.

Choice of Provider. About 58 percent of all those who were sick and sought care turned first to a government provider. Large variations in choice of provider are found in comparisons across welfare groups. Approximately 70 percent of sick individuals in the poorest 20 percent of households who sought care first went to a government facility. Better-off individuals sought care in the private sector. Still, nearly one-half (46 percent) of all ill or injured individuals from the richest households went to a government facility for curative care.

Government health centers or dispensaries were the most common source of outpatient care, used by 40 percent of those who sought care (see Table 5.5). Government hospitals were used by another 17 percent of the population. Surprisingly, given the recent legalization of private practice, private health

Table 5.3: Use of Selected Health Services, by Expenditure Level

<i>Utilization Indicator</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
% Ill/Injured in Past 4 Weeks	11	21	15
% of Ill/Injured Who Sought Care	57	74	66

Source: HRDS, 1993/94.

Table 5.4: Population Sick and Seeking Care, by Sex

<i>Self-Reported Condition</i>	<i>Male</i>	<i>Female</i>
% Ill/Injured in Past 4 Weeks	13	16
% of Ill/Injured Who Sought Care	67	66

Source: HRDS, 1993/94.

centers and dispensaries accounted for about 14 percent of the visits, almost as high as government hospitals.

Government health centers are the main alternative for outpatient care for the poorest, while mission and private facilities are more common alternatives for those from the upper end of the distribution. Those in the poorest 20 percent of the households relied on government health centers and dispensaries twice as often as those in the richest 20 percent. The richest group split its visits among government clinics, private clinics, and pharmacies, and was more likely to use a government hospital than was the poorest group.

Despite the fact that the government operates about one-half of the hospital beds in Tanzania, government hospitals are used by only about one-third of those who reported being admitted for at least one night. Better-off individuals are more likely than the poor to use government hospitals for inpatient services (see Table 5.6).

Because of the relative infrequency of inpatient care, the number of individuals for which health care utilization data are available is insufficient for stratification by both rural/urban residence and welfare group. However, the data suggest that much of the differences in choice of provider across the welfare distribution can be explained largely by rural-urban differences. On a national basis, the better-off households tend to be in urban areas, the poorest households tend to be in rural areas. Therefore, the observation that the wealthiest households tend to use government hospitals, which are in Dar es Salaam and a few other urban areas, reflects the relatively close proximity of the better-off population to those facilities.

Because individuals from wealthier households are more likely to report that they are ill and, if ill, to seek care, they tend to consume a larger relative share of all services than do the poor. Households in the top 40 percent of the welfare distribution consumed about 54 percent of all curative outpatient services in 1993/94, and about 54 percent of all inpatient admissions. They also consumed about 75 percent of the outpatient care provided by private facilities.

HOUSEHOLD EXPENDITURES ON HEALTH CARE

In 1994/95, the typical Tanzanian household spent about Tsh 15,139 (US\$26.63) per year on health services, representing about 1.8 percent of total expenditures. Rural households spent about Tsh 11,532 (US\$20.06) in 1994/95, while households in urban areas spent more than twice that amount. As shown in Table 5.7, health spending makes up a larger share of total expenditures in better-off

Table 5.5: First Source of Curative Outpatient Care, by Expenditure Level (%)

<i>Source of Care</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Government Hospital	15	20	17
Voluntary Agency/ Private Hospital	5	9	6
Government Health Center or Dispensary	55	26	40
Voluntary Agency Health Center or Dispensary	10	9	10
Private Health Center or Dispensary	6	24	14
Other (traditional and pharmacy)	9	12	13

Source: HRDS, 1993/94.

Table 5.6: Use of Inpatient Services, by Expenditure Level (%)

<i>Source of Care</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>All</i>
Government Hospital	35	44	35
Other	65	56	65

Source: HRDS, 1993/94.

households than in poor households. There are no differences between male- and female-headed households.

Tanzanians spent about Tsh 1,498 (US\$2.61) per short illness episode when health care was sought (see Table 5.8). Rural households spent more than urban ones for care at a hospital, but substantially less for care at a health center or dispensary. For example, individuals in rural areas spent Tsh 4,332 (US\$7.53) for a visit to a hospital, while patients in urban areas other than Dar es Salaam spent only Tsh 1,404 (US\$2.44), and Dar es Salaam patients spent Tsh 2,897 (US\$5.04). A dispensary visit, in contrast, cost only about Tsh 741 (US\$1.29) to a rural patient, but more than double that amount to an urban one.

The differences in expenditures (and the distribution of expenditures) across the welfare distribution show a distinctive pattern. The poorest households, who also tend to live in rural areas, spend relatively little for the government services that are nearest to them. However, they spend substantial amounts for the more sophisticated health services, even those provided by the government, because of the high transportation costs. Better-off households tend to spend more per visit in rural and urban areas, in part because they are more likely to use non-governmental services.

Two additional tables illustrate the patterns of expenditures on health services. Table 5.9 shows that transportation costs are proportionately more significant for the poor than for the better-off. For visits to hospitals, the poorest group spent an average of Tsh 1,396, about 17 percent of which was expended on the visit, 35 percent on drugs, and 36 percent on transportation. The richest group spent almost twice as much on a visit (Tsh 2,430), with 23 percent of that amount being spent on the visit, 56 percent for drugs, and 20 percent for transport. Transport and drugs constitute two-thirds or more of the costs of most visits.

The foregoing discussion covers *total* expenditures. The expenditures *per visit* (Table 5.10) for government services at the dispensary level are lower for the poor than for the rich. For health centers

Table 5.7: Share of Total Household Expenditures on Health, by Residence and Expenditure Quintile (%)

	Lowest 20%	Highest 20%	All
Dar es Salaam	2.0	2.0	2.2
Other Urban	1.3	2.2	2.1
Rural	1.3	2.0	1.6
All	1.2	2.2	1.8

Source: HRDS, 1993/94.

Table 5.8: Total Expenditures per Illness Episode Among Those Seeking Care, by Residence in 1994/95(Tsh)

	Dar es Salaam	Other Urban	Rural	All
Hospital	2,897	1,404	4,332	2,751
Health Center	2,856	784	531	663
Dispensary	2,458	1,596	741	1,009
Other	1,337	2,291	1,395	1,715
All	2,641	1,495	1,361	1,498

Source: HRDS, 1993/94, inflated to 1994/95 levels.

Table 5.9: Distribution of Health Expenditures by Those Who Sought Care, by Expenditure Quintile (%age)

Type of Expenditure	Lowest 20%	Highest 20%	All
Visit	28	23	18
Drugs	35	56	54
Transport	36	20	28
Total	100	100	100

Source: HRDS, 1993/94.

and hospitals, the poor pay *more* than the rich for the full cost of a visit, and this is influenced heavily by higher transport costs.

DEMAND FOR HEALTH CARE

Perceptions of the Quality of Health Services

In the HRDS, respondents were asked for their opinions about various quality-related features of the government dispensaries or health centers nearest to them. The features included (a) drug availability, (b) qualifications and trustworthiness of doctors and nurses in attendance, (c) proximity of dispensary or health center, (d) pleasant and sanitary environment at the clinic, and (e) personnel who do not attend to the sick but help with community-wide health interventions.⁴

Above all, consumers are highly dissatisfied with the lack of availability of drugs (see Table 5.11). Out of every 100 respondents, about 63 stated that they believed that drug availability in government facilities was poor or very poor; while only about 10 said that availability was good or very good.

Not surprisingly, given the inclusion of both urban and rural residents, opinions were split on the acceptability of the facilities' proximity. About 45 percent of respondents thought that proximity was poor or very poor. In contrast, a full 28 percent said that proximity was good or very good.

The qualifications of health personnel and the availability of preventive services were viewed quite favorably by respondents. In each case, more than one-third said that these features were good or very good. There were no differences between the opinions of male and female respondents.

These findings closely parallel those of other studies. Gilson et al. (1993), for example, found that in a rural district in Morogoro, shortages of drugs were common and caused the greatest amount of dissatisfaction among consumers. End-of-month stock-outs caused (and were then exacerbated by)

Table 5.10: Expenditures per Visit, by Type of Provider and Expenditure Quintile 1994/95 (Tsh)

Source of Care	Poorest 20%	Richest 20%	All
<i>Dispensary</i>			
Government	107	322	229
Other	1,258	2,759	2,021
<i>Health Center</i>			
Government	804	531	257
Other	1,731	2,362	2,052
<i>Hospital</i>			
Government	1,611	1,522	1,276
Other	2,467	7,172	7,267
Total	878	2,399	1,572

Source: HRDS, 1993/94, inflated to 1994/95 levels.

Table 5.11: Ratings of Government Health Facility Quality (%)

Characteristics	Very Good or Good	Adequate	Poor or Very Poor	Total
Drug Availability	9.8	26.6	63.6	100
Personnel Qualifications	34.9	39.8	25.3	100
Distance	28.0	27.3	44.7	100
Preventive Services	36.9	37.8	25.4	100
Clean Toilet/Water	25.6	44.1	28.8	100

Source: HRDS, 1993/94.

⁴ The question was worded: "...having personnel who do not care for the sick but who help the community control pests (like mosquitoes), improve sanitation, immunize children, and teach about good health practices—someone who helps keep people healthy."

consumers to feign illness and stock up on medications early in the month. Shortages of drugs were also seen to be a result of mismanagement and attempts on the part of health workers to supplement their wages through drug sales. This, in turn, created significant alienation between the health system and the community.

Willingness to Pay for Improved Health Services

Household survey respondents were asked a series of structured questions designed to determine how much they would be willing to pay to defray the full costs of one visit to a local health center or dispensary that matches the characteristics that the respondent thinks are important. The contingent valuation responses are influenced by the variables that economic theory implies should explain variations across households. Households with more educated heads and more educated respondents exhibited a greater willingness to pay on average than did those with less educated heads. Higher-income households also bid higher, and at increasing rates, than those living in less affluent households. Male respondents, older respondents, and married respondents were also willing to pay more. Having a large proportion of family members younger than 15 was associated with a greater willingness to pay for a visit to an health facility.

We also seek to determine how bids from households respond to the characteristics of the local health center or dispensary, as measured by a subjective index of quality, controlling for government expenditures. Like the education case, increases in the quality index have a positive impact on the willingness to pay for one visit to a health facility. However, unlike the education case, the impact is extremely small. The difference may reflect the fact that households face many more choices of where to seek health care, so they may not be willing to pay much for improvements in public sector services. However, in primary education, parents have no choice but to send their children to a public school, so they may be more interested in improving the quality of those schools.

SUPPLY OF HEALTH SERVICES

Since Independence, the Government of Tanzania has recognized that adequate health is integral to economic and social development on both individual and social levels. The path that the government pursued to improve health conditions was the creation of a publicly-funded health system that sought to be, in essence, as different as possible from the system that existed under colonial rule. That is, the government attempted to shift emphasis from limited urban, hospital-based care for the better-off populations to extensive rural, basic services for the subsistence-level majority. In the 1970s and 1980s, with donor assistance, the government adopted a primary health care approach, created an extensive referral pyramid, and rapidly expanded the number of facilities and staff at the base of that pyramid (dispensaries and health centers, staffed with paramedical personnel). Until the early 1990s, when financing pressures forced policy change, the government maintained universal and nominally free⁵ access to government health services, and discouraged for-profit private-sector activities (see Box 5.1).

⁵ Until recently, nearly all government-operated health services delivered care at no charge to the patient or his or her family. However, most patients have borne the burden of indirect costs such as transportation, and an unknown share have also paid unofficial access fees for treatment.

The supply-side orientation of the government health program succeeded in creating a network of 2,746 government health facilities and 21,973 health workers by 1991. It also succeeded in shortening the distance that rural residents have to travel to obtain basic curative care, and has distributed the benefits of health spending quite uniformly over the population.

What the government has not yet been able to achieve is to target public funds toward those health services that reduce the community-wide level of morbidity and mortality. While the major causes of death in Tanzania are malaria, respiratory infections, diarrheal disease and similar basic ailments, health resources are used more for treating than for preventing these diseases. The health of Tanzanian children and adults continues to be severely jeopardized by the high prevalence of preventable diseases.

Policy Framework

Historical Background. The Arusha Declaration of 1967 was reflected in health policy in three main ways. First, it was decided that the public sector would take responsibility for meeting the population's health service needs, and services would be available at no charge to patients. Second, services would be directed toward the rural areas, where the majority of the population live. Third, it was determined that the country would invest in being self-sufficient in all types of medical and paramedical personnel.

During the 1970s, the health sector, like much of the public sector in the country, grew dramatically. Most of the growth was seen in the peripheral, or rural, health system. The MOH developed a plan for 1972-80 in which the objective was to "limit the expansion of hospitals to the rate required to match population growth, to keep the bed-to-population ratio constant, and to push ahead as rapidly as possible with the construction and staffing by paramedical personnel of rural health centers and dispensaries" (Jonsson, 1986). The Third Five-Year Development Plan (1976-81) echoed these objectives and called for strengthening of preventive services and development of training programs for various health workers, particularly those who would serve in rural areas. Consistent with actions taken in other sectors, three mission hospitals were nationalized. Private for-profit medical practice was outlawed, though it continued informally.

The government network established during the expansionary period is impressive in size and clearly directed toward the rural areas. While the number of government-run hospitals changed little, the number of rural health centers increased from 22 to 267, and the number of dispensaries grew from 875 to 2,393.

Recent Policy. Since the beginning of the 1990s, the policy orientation has changed. Severe

Box 5.1: Features of the Tanzanian Health System

- The government took responsibility for meeting the population's health service needs. Much of the private medical sector was outlawed or nationalized. However, charitable organizations were allowed to continue operating, although with many constraints.
- The structure and staffing of government facilities was based on uniform, population-based standards.
- Government services were made available at no charge to all patients.
- Services were directed toward the rural areas and toward basic health needs as defined under primary health care. This included family planning services, integrated with maternal and child health. At the base of the referral pyramid and close to the village were rural dispensaries. Consultant hospitals in large cities were at the apex.
- The country invested in self-sufficiency in all types of medical and paramedical personnel.

Adapted from the *Social Sector Strategy*, November 1994.

financial constraints, expanding demand for services, and declining service quality motivated the government to propose major reforms in the health sector⁶. It intends to redefine its role in health care service from that of a dominant provider to that of a facilitator. The government envisions that public health services will primarily be channeled through a decentralized system whereby authority and budgets are devolved to the district level. The government will focus on ensuring that an essential cost-effective package of services is financed, with full accountability to households as consumers, beneficiaries, and active participants. Various financing options to improve efficiency and equity are being explored. The cost-sharing program, first introduced in 1993, will be strengthened and expanded so that revenues are managed more efficiently, the fee structure will better reflect the cost of providing services, and efforts to exempt the poor are strengthened. Risk-sharing and -pooling mechanisms are under development, to include health insurance for civil servants and formal sector employees, and prepayment schemes for the population working in rural areas and for the urban informal sector. The government is also developing an appropriate public/private mix in health care provision whereby the private sector will take a larger role in providing curative health services, while the public sector will focus more on community and preventive interventions.

The Government has also initiated a pilot program that seeks to mobilize additional household resources for primary health care. The pilot modifies health management and incentive structures to augment local responsibility for, and management of, primary care facilities (see Box 5.2).

The Government adopted a nationwide cost-sharing initiative and, in January of 1993, introduced new and adjusted fees for Grade I and II services at referral, regional, and district hospitals. Similar charges for Grade III services were introduced in July of 1994. This incremental approach is intended to allow capacity building and improvement in implementation systems and to safeguard against any negative response to large changes that might jeopardize the sustainability of the policy change.

It is estimated that if all eligible patients and services are charged, a total of approximately Tsh 6.85 billion will be generated per year. This assumes, however, that price changes will not affect utilization. The extent to which user fees can form an effective source of revenues will depend on prices and price structures, the quality of services, exemption/waiver definition and implementation, and administrative ease for fee collection and use.

Organization and Structure of the Health Care System

At the central level, the MOH is responsible for policy formulation and development of guidelines to facilitate the implementation of the national health policy. The region interprets national policies and oversees their implementation in the districts. The MOH also runs the four main referral or consultant hospitals and the health-sector training schools.

The Regional Health Management Team (RHMT), headed by the Regional Medical Officer (RMO), is responsible for health services in the region. The RHMT's main task is to coordinate and

⁶ The reform proposals are elaborated upon in several documents, including: *Proposals for Health Sector Reform* (December, 1994) approved by Cabinet in March 1996; *Strategic Health Plan: 1995-1998* (February, 1995); *Social Sector Strategy* (1995); and *Health Sector Reform Plan of Action 1996-1999* (May, 1996).

Box 5.2: Community Health Fund

The Government of Tanzania realizes that it is necessary to mobilize resources and change health management and incentive structures so that basic health services can be locally maintained and self-sustainable. To address these issues, the Government, assisted by the World Bank, began to test a Community Health Fund (CHF) in 1996.

The CHF, a prepayment health plan for rural communities, is a risk-sharing mechanism whereby basic health needs are funded by household contributions and a government matching grant. This program allows families to pay for a year of health services when they are most likely to have the money to do so. The program also increases local control over health services by decentralizing decision-making and directly involving communities in planning and management of local health services. By augmenting health care resources and fostering competition between public and non-governmental clinics, it encourages private service providers to expand their services in rural areas and to improve the quality of care.

Under the CHF, households make a voluntary contribution of Tsh. 5,000 (about US\$9) to the fund that they earmark for a public or private health center or dispensary of their choice. Household contributions are matched one-to-one by a block grant from the Government. Contributions are collected during harvest season. Each participating household receives a "Health Card" that exempts household members from additional charges at the selected medical facility for one year. Non-members pay user fees for each facility visit. Currently funds are pooled only at the facility level. Due to the small size of pooling, benefit coverage is limited to basic health services at the primary level.

Normal government funding of health services is maintained during this pilot stage. Therefore, the CHF provides additional resources and can be used to cover the financial shortage that previously existed. Ten percent of contributions are set aside to finance public health activities agreed upon by the community (e.g., digging wells, buying mosquito nets, etc.).

The community funds are administered by the District Health Board (a newly created body comprising medical personnel) and representatives from local government and the community. Technical advice and regular supervision are provided by the District Health Management Team (DHMT). For each participating facility, a committee is set up composed of selected community members, health workers, and local government representatives. This committee is responsible for mobilizing community members, developing and implementing a Community Health Plan, and managing the fund.

The CHF "pre-test" was launched in Igunga District, a remote rural district in Tanzania. Each community has now established a CHF Committee and started sensitizing their local inhabitants. A District Health Board has been established as a legal entity. As of October 1996, about 2,000 households had joined the CHF and contributed over Tsh. 10 million (about \$18,000). These funds were matched by a government grant. For households that did not contribute to the fund, user fees of Tsh. 500 per visit were introduced simultaneously at the participating government facilities.

The next steps in CHF pilot development include: (1) setting up a participatory planning process at each community for preparing Community Health Plans based on their own health needs and priorities; (2) establishing an adequate financial management and accounting system and providing necessary training; and (3) strengthening the District Health Board and the DHMT to provide adequate supervision, training, and guidance to facility workers and the community. The CHF will be rolled out in phases to other districts.

supervise district health services. In turn, the District Health Management team (DHMT), headed by the District Medical Officer (DMO), is responsible for health care services carried out in dispensaries, health centers, and the district hospital.

The Referral System. The referral system is comprised of three basic levels: dispensaries, rural health centers, and hospitals (district, regional, and consultant). A dispensary offers preventive, curative, and obstetrical services. In addition to these services, a health center has 25 to 50 inpatient beds. Hospitals provide both preventive and curative services of increasing sophistication, from the district and regional hospitals, to referral and specialty (or consultant) hospitals. Health centers and dispensaries are widely distributed in rural areas, whereas hospitals, and particularly consultant hospitals, are located in major towns and urban areas.

Vertical Programs. Programs for specific diseases such as tuberculosis, malaria, AIDS, as well

as broader preventive services such as immunizations and MCH/FP, have been established⁷. Most are heavily donor-funded. The programs are characterized by their vertical organizational structure, which consists of a central unit in the MOH, coordinators at regional and district levels and, in most cases, specific implementing officers at health facilities.

Community-Based Health Care. Community-based healthcare activities take place in localities scattered unevenly in the country. These activities are undertaken to improve the living conditions of the community through, for example, the provision of clean water and pit latrines. Such activities usually are initiated by non-governmental organizations and donors and are not directly attached to the formal health facility network. Instead, they are managed independently by the community.

The Non-Profit Private Sector. Health facilities operated by religious missions have supplemented government services, both by design and by default, for decades, and the government has provided substantial subsidies to these private, non-profit organizations. The subsidies take the form of grants that cover all of the recurrent costs for hospitals that are designated as substitutes for government district hospitals (so called Designated District Hospitals), and smaller grants for other mission facilities, based on staff and bed size.⁸

Mission-run voluntary agencies provide a set of services similar to those offered in the public sector (basic curative care provided in outpatient and inpatient settings, and preventive services such as maternal and child health care). The organizational philosophy of the voluntary agencies, in general, is to provide low-cost services to those in need. Again, this is similar to the government's stated goals. However, the voluntary agencies charge for their services, recovering an estimated one-half of the costs of providing care.

As shown in Table 5.12, voluntary agencies run nearly one-half of Tanzania's hospitals, and provide almost one-half of all beds. The role of these non-profit providers is smaller, though not insignificant, in providing care in lower-level facilities (health centers and dispensaries). Regionally, the distribution of voluntary-agency facilities is remarkably similar to that of government facilities.

Table 5.12: Health Facilities, by Ownership, 1992

<i>Indicator</i>	<i>Government (including parastatals) (%)</i>	<i>Voluntary Agencies (%)</i>	<i>Private For-Profit (%)</i>	<i>Total</i>
Hospitals	49	48	2	174
Beds	52	47	<1	24,130
Health Centers	97	3	<1	276
Dispensaries	80	19	<1	3,014

Source: MOH, 1993.

There is no clear concentration of mission hospitals, despite varying economic and cultural conditions among the zones. The one observation that can be made is that mission facilities are less likely to be found in the Dar es Salaam area than in more remote areas. Clearly, the non-profit sector supplements (and in some ways substitutes for) the public sector.

⁷ Among the major vertical programs are: Expanded Program on Immunizations, Village Health Worker Program, AIDS Prevention, TBA Training, Tuberculosis and Leprosy Control, and Iodine Deficiency Prevention.

⁸ There is a debate about whether the total recurrent costs are, in fact, provided by the government. Managers of mission facilities frequently report that the government grants fall short of covering actual costs.

The For-Profit Private Sector. In contrast to the government and mission sectors, the for-profit private sector has had only a tiny, though increasing, role in the health sector, and geographic distribution is highly skewed toward a few areas of the country. Since re-legalization of private healthcare practice after a ban of about 10 years, approximately 500 organizations and individuals have registered with the Ministry of Health as private providers. The vast majority of these are small-scale dispensaries in Dar es Salaam, owned by a physician and staffed by one or more medical assistants (i.e., individuals who are permitted to prescribe most drugs). The growth of health units in Dar es Salaam has been extremely rapid, and the figures for the private sector shown in Table 5.12 are somewhat outdated as a result. In early January, 1992, there were 136 health units (primarily dispensaries) in the city, and by late September, 1993, there were 253 health units. Currently, about 30 applications for registration are received each month, and most applicants are seeking permission to establish outpatient units in Dar es Salaam and a few other areas.

The regional disparities are striking though not surprising, with private practitioners favoring the better-situated, more densely populated, higher-income areas. Since re-legalizing private practice, the Ministry of Health has registered 132 private doctors in Mwanza, while there are only 4 or fewer in Lindi and Mtwara. It is still too early to see how densely private practice will begin to cover the rest of the country.

Problems of Personnel, Drugs, Management, and Constraints on the Private Sector

Several problems have been highlighted in the numerous external and internal reviews of the health system in Tanzania. The most commonly cited are poorly trained and unmotivated personnel, lack of an efficient and effective drug distribution system, inadequate supervision and management, and severe constraints on the private medical sector.

Personnel. The large number of cadres (29 distinct cadres) represent a diverse group of workers with various levels of training from the 110 allied health training programs. Salaries for health personnel are widely considered to be inadequate. The "survival strategies" employed by both lower- and higher-paid workers has diminished the quality and effectiveness of the health system. As noted by Sandiford and Kanga (1994, p.2), "...perhaps [the] most detrimental aspect of the system is the manner in which employees are remunerated. Wages are so abysmally low that even the most highly-paid member of the staff is obliged to engage in a variety of alternative income-generating activities in order to survive. There are several means of varying degrees of legality by which this is achieved [...] These 'extra-curricular activities' all distract staff attention from their "official" employment and undermine the influence that managers have over their staff in proportion to their importance as sources of income."

The current system for staff deployment is largely centralized. The MOH creates a list of newly trained health workers and then works with the Ministry of Regional Administration and Local Government to deploy staff from Dar es Salaam. The establishments for positions are national, and the bonding system ties graduates to the MOH at the national, not local, level. These features of the deployment system combine to create a centralized system that "...prevents the development of creative, flexible and locally-oriented health services" (Ridley, 1993). MOH professionals can (and do) transfer among regions and have few incentives to remain in, and be responsive to, local communities.

Pharmaceuticals. For many years, the supply of drugs to rural health units through the government procurement and distribution system has been in a state of crisis or near-crisis. Drugs

consume approximately 19 percent of the recurrent health budget. Yet the lack of drugs, particularly in the peripheral units, has been identified as a primary quality-related deficiency of the government health system, most recently in the marketing questions included in the HRDS.

Nearly all the drugs used in the peripheral units of the government health system (dispensaries and health centers) are imported through the Essential Drugs Program and distributed in pre-packaged EDP "kits," provided by DANIDA. Typically, according to field reports, the supply of drugs runs out within two weeks of the start of the month, when new kits are opened. The shortages are said to result from miscalculations about local drug needs, misappropriation and sale of drugs at both local and central levels, and over-consumption by patients early in the month.

Recent policy initiatives have attempted to address the deficiencies in drug procurement and distribution. In 1991, the government adopted a plan for the development of the pharmaceutical sector in the country (*Masterplan for the Pharmaceutical Sector 1992-2000*, September 1991). Its main components include:

- reorganization of central medical stores and the establishment of regional medical stores (this has been completed);
- changes in the drug distribution system from the present rigid kit system to a health facility inventory-based requisition system (this is pending);
- rational use of drugs through universal use of the National Essential Drug List and Standard Treatment Guidelines; and
- increased local production of pharmaceuticals.

From the perspective of the consumer, the lack of medicines has been the most critical problem. This has been experienced particularly in the peripheral units, so patients will typically bypass lower-level dispensaries in favor of health centers or outpatient departments of district hospitals.

Management. Serious criticisms have been leveled at the management training and authority structure within the government health system. For example, RMOs, who are responsible for all health-related activities at the regional level, typically are specialists in an area of clinical medicine but have little interest or knowledge of public health and community medicine. Similarly, DMOs tend to have little public health training and are unprepared to manage district health services.

Lack of a functioning health information system has long been cited as a fundamental weakness of the Tanzanian public health system. Only the donor-funded and -supervised vertical programs have had functioning systems in the past, and those typically operated in isolation from one another. However, a new Health Management Information System (HMIS) has been developed by the MOH and was implemented nationally over the period 1993-1995. The HMIS integrates the information requirements for existing vertical programs, and has built-in indicators and targets that can be used as tools to monitor service provision at facility, district, regional, and national levels.

District health planning, as a component of overall district planning, is constrained by lack of knowledge of available financial inputs both from government and other funded vertical programs. The

MOH, through the Primary Health Care Steering Committee, has initiated the development of National District Health Planning Guidelines which, when used with data input generated through the new HMIS, will form the basis for improved district health management.

Supervision and maintenance of standards of quality are weak in the extreme. The District Health Team's planning and coordination of transportation, management, supervision, and support to dispensaries and health centers is inadequate at best, and often nonexistent. Health centers are responsible for the supervision of satellite dispensaries, but even this function is absent in the rural areas due to a lack of transportation and motivation.

Maintenance of government health facilities is extremely poor. Budget allocations for both building and equipment maintenance are often small and/or used for other purposes. There also is a shortage of trained maintenance technicians. As a rule, maintenance personnel are provided by district or city public works units. However, bureaucratic procedures hamper an effective response to a repair request, even when funds exist. Such services are rarely procured from the private sector.

Budgeting in the health sector is done on a line-item, incremental basis, based on input costs. Each health facility or department in the MOH calculates their requirements for the coming year based on the previous year's expenditures, adjustments for previous underfunding, expectations for inflation, and plans for growth in activities. Budgets are aggregated at the regional and national levels. At the end of the day, however, budget requests are often cut somewhat arbitrarily by the central government.

The budgeting process is driven by accounting norms. Virtually no program-based budgeting or deliberate reallocation of resources across programs takes place. The recent increase in health centers' and dispensaries' share of total health sector spending was driven by sharp increases in employee salaries rather than by a deliberate decision to reallocate resources from hospitals to primary-care facilities.

Limitations on the Private Sector. Three major constraints affect the supply of private medical services in Tanzania. First, the existence of free public services and low-cost, subsidized, mission-run services may crowd out for-profit private sector activity to some extent. This problem will be reduced, though not eliminated, as cost sharing takes hold in the public sector.

Second, there are few insurance mechanisms, particularly in rural areas⁹. Therefore, both providers and consumers face considerable risk when treatment is offered. Out-of-pocket payment may be an adequate financing mechanism for most outpatient care, particularly if providers respond to a competitive market as they price their services. However, private inpatient care may be too costly for more than a very few consumers. The absence of a viable insurance mechanism is a serious constraint on the development of the private for-profit hospital sector. This is a particularly serious issue since the lack of an insurance mechanism inhibits the for-profit sector from mobilizing private resources for just the types of services that are placing the greatest burden on the public sector (i.e., hospital services).

⁹ Some Tanzanians do already have experience with a form of insurance. In their study on health insurance in Tanzania, Abel-Smith and Rawal (1992) found that of 200 private and parastatal firms with more than 20 employees, 34 percent had contractual arrangements with private organizations to provide health care for their workers. This is mainly done on a fee-for-service basis, and tends to be used for outpatient services. Although this form of self-insurance does exist, it is limited to formal sector employees and is reported to be cost-ineffective and subject to considerable abuse by both patients and providers.

Third, available data suggest that there is in fact little, if any, quality improvement associated with existing voluntary agency facilities, or the recent development of the private sector. In several studies, comparisons between mission and government (district or regional) hospitals indicate that there is little difference in technical quality. While mission facilities may rank higher on amenities, interactions, and availability of some supplies, government facilities tend to have more highly trained workers (Gilson et al., 1993; Kanji et al., 1992).

In the for-profit sector, there is still less evidence that services are better quality than in the government units, and the reverse may be true. While no hard data have been reported, there are consistent reports that the private dispensaries are staffed by medical assistants, often with no direct supervision from a qualified medical doctor. The dispensaries may satisfy consumer demand by providing prescriptions, but there is reason to believe that the technical quality of services being delivered is very low. This is compounded by the difficulties in inspecting and monitoring private clinics. Market fragmentation reduces incentives to invest in inputs in order to enhance quality. In short, quality and efficiency problems in the health sector may be difficult to improve.

GOVERNMENT AND DONOR SPENDING ON HEALTH SERVICES

The Government of Tanzania spent approximately Tsh 57 billion, or an estimated Tsh 1,972 per capita, in 1994/95 on personnel, pharmaceuticals, and other recurrent costs of the healthcare system. Another Tsh 496 per capita was spent through the development budget, much of which came from donor contributions. In this section, we examine trends in spending on health care, and the allocation of spending among programs and inputs.

Recurrent Expenditures

Time Trends. The health sector's share of total government spending was virtually constant at 8 percent in the early 1990's. However, its share increased sharply in 1993/94 and 1994/95, increasing to 15 percent of spending. Similarly, government health sector expenditures increased from 1.2 percent of GDP in 1989/90, to 2.5 percent in 1994/95. However, it appears that this trend of increasing government focus on the health sector has recently been reversed. In the 1996/97 budget, the health sector is projected to receive 7 percent of government expenditures, equivalent to about 1.2 percent of GDP.

Spending per capita has kept pace with population growth and general inflation. Recurrent budget health care spending per capita has grown from Tsh 373 in 1989/90 to 1,972 in 1994/95. Real spending per capita was relatively constant from 1990/91 to 1992/93, then increased by approximately 16 percent in 1993/94, and by 30 percent in 1994/95. However, health spending per capita is projected to decline by 36 percent in real terms in 1995/96.

Expenditure by Program. Health resources are concentrated at the hospital level. An estimated 50 percent of the recurrent health budget was allocated to the MOH in 1994/95 (see Table 5.13). Most MOH funds were devoted to regional and district hospitals, whose share of total recurrent health sector spending is estimated to be 32 percent, equal to their average share over the course of the 1990s. Health centers and dispensaries account for 31 percent of health spending in 1994/95, markedly higher than its 1992/93 share. Referral hospitals account for 27 percent of total recurrent health sector expenditures, down from 33 percent in 1992/93.

Combined, so-called curative (or facility-based) health services comprise 90 percent, preventive services about 7 percent, and training and other expenditures (including MOH Administration and minor programs) approximately 4 percent of recurrent spending.

In addition to health-related expenditures under the recurrent budget, and in contrast to education, the Government of Tanzania funds health through the development budget. Donor spending is captured in the development budget, so accurate estimates of total public spending are possible only if the two are combined. While government-financed expenditures strongly favor curative services, donor expenditures are weighted more heavily toward preventive services.

Table 5.13: Distribution of Recurrent and Development Expenditures Among Health Sector Programs, 1994/95

Category	Recurrent		Development				Total	
	Government (Tsh million)	Share (%)	Government (Tsh million)	Share (%)	Donor (Tsh million)	Share (%)	Government and Donor (Tsh million)	Share (%)
Total	56,968	100	1,610	100	8,382	100	66,960	100
Total Curative	51,027	90	1,127	70	2,539	30	54,693	82
Referral Hospitals	15,324	27	140	9	0	0	15,464	23
Reg/Dist. Hospitals	17,978	32	642	40	408	5	19,028	28
Disp/HC	17,725	31	345	21	2,132	25	20,202	30
Preventive Services	3,840	7	376	23	5,843	70	10,059	15
Ministry Administration	285	1	15	1	0	0	300	1
Training	1,787	2	83	5	0	0	1,870	3
Other	28	1	9	1	0	0	37	0

Source: Follmer and Kessy, 1996.

As shown in Table 5.13, 90 percent of recurrent, 70 percent of non-donor development, and 30 percent of donor expenditures are allocated to curative services, including the various levels in the referral hospital system (consultant, regional, and district) and the peripheral health units (health centers and dispensaries). Of total MOH and donor monies combined, the consultant hospitals consume 23 percent of financial resources, the regional and district hospitals use another 28 percent, and 30 percent of funds are allocated to health centers and dispensaries. Preventive services, primarily multiple vertical programs (e.g., AIDS, TB/leprosy), are budgeted to receive approximately 15 percent of non-household health expenditures. Nearly 58 percent of this, however, comes from donors. Thus, donors shift the overall budget in favor of dispensaries and preventive services because the donors favor these programs more than does the government.

Expenditure by Input (Table 5.14).

Personnel costs account for 67 percent of the budgets for health centers and dispensaries. Drugs account for 26 percent of expenditures. Less than 1 percent of their budgets are allocated to facility operation and maintenance. It is difficult to estimate expenditures by input for hospitals because a large share of these facilities' budgets are provided to them as lump sum grants (internal subventions) for which expenditure by input information is not available. Referral hospitals receive almost one-half of their budgets in this form.

Personnel costs account for about 23 percent of their budgets, treatment abroad, 11 percent, drugs, 7 percent, and operation and maintenance, 6 percent. Regional and district hospitals receive about one-third of their budgets as lump sum grants. Personnel expenses account for 31 percent of their budgets, drugs, 13 percent, and facility operation and maintenance, 4 percent. For the system as a whole, personnel expenses account for 41 percent of the budget, lump sum grants to hospitals, 25 percent, drugs, 14 percent, and food, hospital supplies, and treatment abroad each account for 3 percent.

Salaries have grown rapidly since 1991/92. Nevertheless, even with a substantial increase in personal emoluments' share of total spending, this division of spending by input is not out of line with generally accepted international standards.

Donor Spending. Donor agencies, which were budgeted to spend about Tsh 8.4 billion (13 percent of total non-household sector spending) in the Tanzanian health sector in 1994/95, emphasize preventive and primary health care. Donor funds account for 58 percent of total non-household preventive spending, 11 percent of non-household health center and dispensary expenditures, and 2 percent of non-household regional hospital expenditures. DANIDA is the largest donor in the health sector. Its Health Sector Program Support is budgeted at US\$51 million from 1996 to 1999. Norway, Japan and Sweden are also significant bilateral donors. UNICEF operates health activities through local government and community-based organizations. The World Bank is a relatively small participant in the sector (the first health sector credit began in 1990). For a more detailed breakdown of donor activity in the health sector in the 1990s, see Box 5.3 at the end of this chapter.

Table 5.14: Input Use in Health Sector Programs, 1994/95 (% shares of total program expenditures)

<i>Input</i>	<i>Total Excluding Administration and Other</i>	<i>Referral Hospital</i>	<i>Regional, District Hospitals</i>	<i>Health Centers and Dispensaries</i>
Total	100	100	100	100
Personal Emoluments	41	23	31	67
Traveling/Visits	0.1	0	2	0
Facility Operation/Maintenance	0.4	6	4	1
Treatment Abroad	3	11	0	0
Total School Costs	0	0	0	0
Hospital Supplies	3	1	4	2
Food	3	2	4	1
Laboratory Services	0	0	0	0
Drugs	14	7	13	26
Non-Personnel Preventive Inputs	1	0	0	0
Internal Subventions	25	46	36	0
Other	5	4	6	3

Source: Follmer and Kessy, 1996.

Unit Costs

The absence of valid national utilization data, combined with the division of budgeting responsibilities between the MOH and the regional and district governments, precludes calculation of system-wide unit costs. However, the small-scale FAST study in 8 districts was undertaken to estimate illustrative unit costs per visit in government, mission, and for-profit private dispensaries. As shown in Table 5.15, in government facilities, the average cost per outpatient visit was about Tsh 150 (US\$0.37) in 1993. For the mission facility visited, the unit cost was calculated to be over Tsh 2,000 (US\$4.94), and for the private, for-profit dispensary, the estimated unit cost was slightly more than Tsh 1,000 (US\$2.47). The main explanation for the striking differences in cost between governmental and other facilities is the availability of drugs. In private facilities, drugs were routinely provided as part of the visit, while in government facilities, care tended to be confined to diagnosis, advice, and prescription.

Within the government system, the larger basic health facilities are more costly than the smaller ones, despite the fact that they currently provide equivalent levels of care in many cases. Compared to dispensaries, health centers have more staff and equipment and therefore consistently have higher unit costs for similar outpatient services. In a study in Morogoro, Gilson (1993, p.11) found that, "...[the] health center median total cost was four times that of dispensaries and average per contact costs were greater across all services except immunization (e.g., fifteen times greater for delivery services)."

Summary of Spending Patterns

At first glance, the allocation of resources within the health budget may seem to run counter to the stated health sector objectives of providing primary health care services to the rural population. One might also conclude that donors place a higher priority on preventive and basic services than does the government. However, several additional observations are needed to supplement these interpretations.

First, it is true that many resources have remained at the consultant-hospital-level, which primarily serve residents of urban areas and contribute relatively little to fighting the diseases affecting the majority of the population. There are ways, however, in which spending does reflect stated government priorities and policies. In any health system where the government takes the primary responsibility for providing health services *at all levels*, resources will be pulled toward the relatively more costly hospital-based curative services (just as they are to universities in education). Any efforts to push health services out to the rural areas, and to increase the capacity of the "feeder" system in the referral network, has the paradoxical effect of ultimately placing even heavier demands on the higher-level facilities. With the government and donors the sole financiers of the health system, the result is an unsustainable expansion of resource requirements, and a natural concentration of resources at the higher-level services that provide few community-level benefits.

Second, looking at the distribution of government and donor spending, donors typically will not

Table 5.15: Estimated Cost Per Outpatient Visit, 1993

<i>Dispensary</i>	<i>Cost per Outpatient Visit (Tsh)</i>
Government 1	131
Government 2	150
Government 3	177
Government 4	171
Government 5	180
Mission	2,239
Private for-profit	1,414

Note: This is a very limited sample of facilities, not randomly sampled, for the purpose of presenting a notional idea of costs.

Source: FAST, 1994.

fund recurrent costs. Therefore, by default the government is left expending many of its resources on the hospital and clinical side.

Third, there is no way to know what the government budgets would look like *in the absence of external assistance*. For decades, high levels of donor funding have affected the shape of the Tanzanian health system, apparently much more than the education system.

Fourth, and finally, it is not easy to separate spending for preventive from spending for curative services in the Tanzanian health system. Much of the infrastructure may appear to be primarily for curative services, though there is joint production of preventive services, especially at the dispensary level. Therefore, the figures should be interpreted somewhat loosely in the absence of more precise information about spending on curative and preventive activities.

TOTAL HEALTH SPENDING AND DISTRIBUTION OF BENEFITS

Estimate of Total Spending on Health

Any estimate of the total amount spent on health services in Tanzania necessarily depends on imprecise estimates. However, such an exercise is worth doing to discern, even in rough terms, the absolute and relative spending on critical investments to human capital.

In fiscal year 1995, the government and donors spent an estimated Tsh 2,317 per capita per year, and individuals spent an average of about Tsh 2,496 per capita per year. Employers added approximately Tsh 128 per capita in the form of insurance and reimbursement, and religious missions contributed approximately Tsh 79 per capita in the form of locally-generated and foreign subsidies¹⁰. Given these estimates, a total of about Tsh 5,020 (about US\$8.73) per capita was spent on an annual basis, with households contributing approximately one-half of that amount.

Distribution of Public Subsidies

Do the funds spent in the Tanzanian government health system reach the poor? In many ways, the answer to that question is "yes." According to an analysis of the incidence of the benefits of public spending prepared for this report, the distribution of many types of health spending is equitable, or at least uniform across the welfare distribution. Funding for outpatient services delivered through health centers and dispensaries was found to benefit both rich and poor alike. For inpatient services and those outpatient services provided at hospital-based clinics, better-off households were more likely to obtain

¹⁰ These estimates were derived as follows. Government and donor expenditures are from the total (recurrent and development) budgets, as reported in Follmer and Kessy (1996) for FY 1995. Per capita household expenditures are from the HRDS (aggregate annual spending on health divided by the average number of household members), and adjusted to 1995 Tanzanian shillings. Employer/insurance contributions are conservatively estimated from Abel-Smith and Rawal (1992), who found that the average annual insurance expenditures for each of the 255,000 was at most Tsh 4,172, or about Tsh 1.06 billion on a national basis in 1991. These figures were also adjusted to FY 1995 Tanzanian shillings. Mission contributions were estimated at a total of Tsh 1,360 million in FY 1994, based on the following assumptions and estimates: there were 8,160 beds in voluntary agency facilities (excluding designated district hospitals which are fully, or nearly fully, government-financed), and the facilities required approximately Tsh 320,000 per bed per year. This cost per bed is estimated from a review of several facilities. Thus, in the aggregate, the facilities must have generated about Tsh 3,023 million per year, of which about 90 percent came from private sources. These private sources were divided approximately equally between user fees and donations, and the user fees were already counted in the household expenditures. Per capita totals for mission contributions were adjusted to FY 1995 Tanzanian shillings.

the benefits than were the poor.

The benefits of government spending on health were distributed reasonably uniformly over the welfare distribution. The poorest 20 percent of households obtained benefits from about 18 percent of total health spending, and the best-off households benefitted from 28 percent of total health subsidies. The wealthiest 20 percent of the population received 29 percent of the benefits of the recurrent budget, while the poorest received 17 percent (see Table 5.16).

Table 5.16: Distribution of the Benefits of Public Spending on Health, by Expenditure Quintile

	<i>Lowest 20% (1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>Highest 20% (5)</i>	<i>All</i>
<i>Hospital Inpatient</i>						
Curative	20.0	13.3	12.5	18.4	35.9	100.0
Delivery	17.5	11.7	17.5	18.9	34.4	100.0
<i>Hospital Outpatient</i>						
Curative	11.3	14.1	14.9	22.9	36.8	100.0
Prenatal	17.7	21.6	15.2	25.0	20.6	100.0
<i>Health Center or Dispensary Outpatient</i>						
Curative	18.3	20.5	18.7	21.3	21.1	100.0
Prenatal	24.7	14.5	21.3	18.3	21.3	100.0

Source: HRDS, 1993/94; World Bank, 1994a.

Outpatient services available through health centers and dispensaries benefit the poor and the better-off households almost equally. For example, the poorest 20 percent of households obtain the benefits of about 18 percent of the government's health spending, while the richest households obtain the benefits of 21 percent of public spending.

Resources are skewed toward the better-off households in the relatively costly inpatient services¹¹. Although they account for only a small share of total visits, they are much more costly to provide than the more uniformly distributed prenatal care or curative visits to dispensaries. For example, as shown in the table, while the poorest 20 percent of the households benefit from 20 percent of curative inpatient health sector spending, the richest 20 percent of households capture 36 percent of the benefits, or about 16 percent more than they would if spending were uniformly distributed. Similarly, for hospital-based curative outpatient services, the wealthiest obtain 37 percent of the benefits of spending, while the poorest households obtain only 11 percent.

There are two explanations for the benefit incidence patterns. First, most hospitals, and particularly the costly referral hospitals, are located in urban areas. Those urban areas are also more likely to have households with relatively high incomes. Although rural residents do travel long distances for inpatient care and thus receive some of the benefits of such spending, most of the inpatients and the vast majority of outpatients in urban hospitals come from in or around the city. Thus, the bias of spending toward hospitals in urban areas translates into a bias toward the better-off households.

¹¹ It should be noted that in this calculation the expenses for the tertiary hospitals were lumped together with those of the district hospitals. It seems likely that the benefits of the tertiary hospital probably are more confined to Dar es Salaam than are the benefits of the district hospitals. Since Dar es Salaam is relatively rich and since the consulting hospitals are more costly per patient seen, if we had assigned the budget of the consulting hospital only to hospital users in Dar or the urban areas, the overall distribution would be more regressive than shown here.

Second, the private (non-traditional) medical sector in Tanzania is small and, compared with the government sector, offers very few opportunities for patients to purchase inpatient services. Therefore, better-off households that otherwise would be likely to turn to the private sector for care use government-funded services instead.

CONCLUSION

Based on the preceding analysis, it appears that if little or nothing is done to alter the current course of the health sector, we can expect:

- minimal improvements in health status;
- declining quality at all levels of the health care system; and
- a persistent differential between the services available to the better-off and to the poor.

However, the Ministry of Health has developed a health sector reform strategy that addresses the issues of financing, liberalization, decentralization, and reallocation of funding towards public and preventive health services. If efficiently implemented, the policies advocated could significantly strengthen the sector. However, implementation of this strategy is not yet connected to the annual domestic budgetary process and is focused more on the role donors can play than on what the government can do. To correct these shortcomings, the Ministry of Health could develop a five-year implementation plan that identifies how the strategy could be financed, develops feasible reallocations, shows how such reallocations could be achieved, and proposes an outcome-oriented monitoring framework. In short, the implementation plan should outline the combination of central government funding, donor funding, user fees, insurance programs, and efficiency gains that would fully fund the strategy. Ideally, such a plan would address the following issues:

- *Allocative efficiency, equity, and government budget allocations.* The government could reduce spending on hospitals, training, and ministerial administration by 50 percent over the next few years and reallocate those resources to preventive health services and primary care (including family planning). The plan could also show how the government could gradually scale back expenditure on study and treatment abroad. This would imply that funding for acute services would have to depend much more on users' and employers' contributions, on risk sharing and prepayment schemes, and on charitable contributions.
- *Improving the efficacy of government funding.* Even with such reallocations, spending on primary and preventive services would only amount to about US\$2 per capita. To be effective, these limited government funds would have to be spent on only the most cost-effective, widely beneficial interventions, such as those to reduce communicable and infectious diseases (including malaria, water and airborne diseases, and sexually transmitted diseases) and to improve preventive services for mothers, infants, and small children. The implementation plan could identify these critical services.
- *District and facility level management.* It is important that district and community-based services be accountable to clients rather than to the central government, and that they have sufficient supplies and drugs to meet community needs. For these reasons, the health reform strategy proposes that the government decentralize public-health services

to the district level and implement facility-based management of government-owned facilities. The strategy also emphasizes that households and communities should take a more active role in funding and supervising health services. Steps to achieve these objectives could be incorporated into the health strategy implementation plan. The plan could include provision for moving ownership of district hospitals, health centers, and dispensaries to the local authority most appropriate to the facility's catchment area, enabling each facility to manage itself, moving personnel and procurement decisions to the facility level, ensuring accountability of facilities to a local government entity, shifting government funding to a grant-making program, and providing central and district-level support for quality improvement. Although the health reform strategy supports such changes, there are now only a few donor-assisted pilots to implement elements of the decentralization program. The implementation plan could therefore propose ways to improve on, and expand nationwide, these pilots.

- *Hospital and training services.* The major result of the budgetary shifts and the decentralization initiative for referral hospitals and training facilities outlined in (a) above would be drastic cuts in government subsidies to these institutions. For these institutions to survive, they will have to be allowed to operate independently, with modest grant support from the central government, and be targeted to the poor. The government could facilitate this transition by encouraging the development of formal and informal risk-sharing and insurance programs to finance catastrophic care. Reducing subsidies to health facilities and training institutions, and promoting household-financed risk sharing, would also encourage the private provision of these services.

Box 5.3: Recent Donor Initiatives in the Health Sector

In 1996-1997, donors were budgeted to fund 21 percent of all non-private expenditures in the health sector. Eighty-two percent of donor funding will go to community and preventive care, and 18 percent to curative services. Most of the donors tie health initiatives in with education by promoting knowledge of basic health rights and risks. HIV/AIDS education and family planning centers are of major importance for many donors.

The Danish International Development Agency (**DANIDA**), the largest single donor in the health sector, launched a major health program in July 1996 to run through June 1999. The Health Sector Program Support (HSPS) is budgeted at approximately US\$ 51 million and emphasizes close work with the government and other donors. On the district level, HSPS support is expected to help establish autonomous district health boards with uniform management and administrative systems. On the regional level, HSPS will support new regional health administrations that will have clear lines of authority and roles in helping to execute health reforms. At the Ministry of Health (MOH) level, HSPS will support the creation of a national health monitoring and evaluation system. This system will assess and record the impacts of investments in health reform. The HSPS program is targeted at improving health care for the lowest income groups.

The United Kingdom's Overseas Development Agency (**ODA**) funds smaller, more specific projects, such as the Adult Morbidity and Mortality Project (focused on Dar es Salaam, Morogoro Rural, and Hai districts). This project defines the causes of morbidity and mortality in adults and attempts to assist the MOH in establishing cost-effective priorities in the delivery of health care to adults. O.D.A. also funds the Health and Nutrition District Support Project (HANDS), devoted to four districts in the Mbeya Urban District. This project, funded at approximately US\$ 1 million over 5 years, attempts to assist the Government of Tanzania (GOT) in prioritizing the use of resources allocated to the Mbeya district. ODA also contributes multi-lateral support to programs such as the National AIDS Control Program (NACP). ODA is expected to contribute US\$ 2.6 million or more annually to the health sector.

The International Development Agency (**IDA**) has been supporting Tanzania's health sector through the Health and Nutrition Project Cr. 2098-TA. The project is IDA's first credit to the sector and aims at improving access, quality, and effectiveness of basic health services in urban and rural areas. The areas of support include: strengthening government's capacity in health planning, policy formulation, and human resources development; reforms in pharmaceutical procurement and management in the public sector; provision of pharmaceuticals and medical supplies; support to nutrition and the population policy; rehabilitation of hospitals, primary health facilities, and health infrastructure; and community mobilization and primary health care initiatives at the village level. In support of health sector reform initiatives by the government, the Credit has been restructured to assist various activities to help implement reforms, including design and pre-testing of the Community Health Fund — a pre-payment scheme for rural communities, planning of social health insurance for civil servants and formal-sector employees, and activities in the areas of public health and management. These activities will continue to be supported and expanded in the follow-up project which is currently under preparation.

The United States Agency for International Development (**USAID**) is sponsoring two programs in the health sector. The Tanzania AIDS Project (1993-1998) is a nation-wide effort channeled through the MOH. USAID will contribute US\$ 20 million to this initiative over five years. The goal of the project is to reduce the impact of AIDS by reducing the transmission rate of HIV and by improving conditions for AIDS orphans. Family Planning Services Support (1990-1997) seeks to improve the health and economic status of women and children through increased use of contraceptive usage and family planning awareness. This program also is to receive US\$ 20 million in total funding.

The United Nations Family Planning Agency (**UNFPA**) is involved in various small programs geared towards population control and family planning. Only one program received more than US\$ 1 million, that being the National Family Planning Programme (US\$ 6.5 million from 1990-1993). The program worked through the Family Planning Unit at the MOH and provided equipment, transportation, training, and contraceptives. Altogether, UNFPA approved US\$ 15 million in aid for the health sector from 1992 to 1996.

The Japan International Co-operation Agency (**JICA**) concentrates its funding on end-specific projects, such as the Malaria Control Programme that ran from 1986-1994. JICA funded the Strengthening Expanded Program on Immunization at approximately US\$ 1.1 million from 1990 to 1995. It is currently supporting the Maternal and Child Health Care Service Project. Stated to run through 1998, the program focuses on increasing the quality and availability of health care to women and children throughout Tanzania. JICA's overall goal in funding to the health sector is to assist the GOT in its efforts at improving health and medical services in such a way that donor assistance can be successfully phased out in the future.

The Swedish International Development Agency (**SIDA**) helps fund the Tanzania Food and Nutrition Centre (TFNC), a nation-wide agency. SIDA's support is designed to strengthen the institutional capacity of the TFNC to improve women and children's diets. SIDA's support also strengthens the ability of the TFNC to obtain external supplies and equipment through international channels. SIDA's current plan runs from Fiscal 1994/95 to Fiscal 1998/99. It has allocated US\$ 2.9 million to be spent over this period.

The Norwegian Agency for International Development (**NORAD**) focuses its support on AIDS and family planning.

For the past three years, the donors have attempted to work with the MOH to support a sector-wide strategy for health to put the MOH firmly in the leadership role in the sector and to reduce the geographic and programmatic problems of coordination among health sector donors. This effort has begun to show some success.

6

FAMILY PLANNING

Most Tanzanian households prefer large families. On average, women say that the “ideal” number of children is 6 (TDHS, 1991/92)¹. This figure is close to the actual average family size, which has held steady at about 6 children for the last 20 years, and corresponds to low (though increasing) use of modern contraceptive methods.

High fertility has health costs, costs to the individual woman, costs to the household, and social costs. First, early childbearing, close spacing of births, and high parity are associated with maternal and child illness and mortality. Second, scarce household resources are stretched over many children, so that education, health, and other resources available per child are extremely limited in poor and even middle-income households in Tanzania. The same is true of the country as a whole. Finite resources are stretched over many children. Third, women who bear large numbers of children limit their chances of seeking opportunities for market employment. Typically this behavior is in response to few opportunities and can change quickly when women’s opportunities in the economy improve.

Clearly, however, those costs are perceived to be outweighed by the value of children in a primarily agrarian economy with plenty of available land and low population density. There is persuasive evidence that fertility is high in Tanzania because demand for children is great in rural areas. There is potential for improving the provision of family planning services and increasing the understanding of modern contraception among women who may wish to delay the next birth or limit their family size. The clearest route to reducing fertility over the long term is through reducing the underlying demand for children. That, in turn, is most directly done through increasing female education, particularly girls’ opportunities for secondary-school education.

OUTCOMES AND UTILIZATION

Between the 1978 and 1988 population censuses, the population on the Tanzanian mainland grew at an estimated annual rate of 2.8 percent, from 17.0 to 23.4 million². At the current rate, the population will double in about 25 years.

¹ Because no one source has all the relevant variables, data for this chapter are derived from the Tanzania Demographic and Health Survey (TDHS) 1991/92, the Tanzania Knowledge, Attitudes and Practices Survey (TKAP) 1994, and the Human Resources Development Survey (HRDS) 1993/94. Readers should note that some changes in fertility preferences and behavior may have occurred between the TDHS 1991/92 and more recent surveys.

² There is some disagreement about this figure, and there are indications that the 1988 Census may have undercounted the population to a considerable degree. The growth rate of 2.8 is said to be on the low side (Bos, 1994)

The legacy of past high fertility rates, seen in the young age structure of Tanzania, implies a dramatic increase in the size of the population in the most highly reproductive age groups over the next decade. Approximately 18 percent of the population is younger than 5 years, and nearly one-half (46 percent) is under 15 years. Projecting the population under assumptions of moderate changes in fertility and mortality, the population of women in the 20- to 24-year age group is expected to increase from 1.1 million in 1990 to 2.5 million in the year 2000, and 3.1 million by 2010. Even with declines in fertility, the population momentum foreshadows a long period of continued high levels of population growth. Under the assumption that fertility and mortality will change as they have in the recent past, the population would continue to grow at more than 2 percent per year through at least the year 2020 (Bos, 1994).

Fertility

The total fertility rate, or TFR, is 6.3 children per woman³ in Tanzania, which is about average for countries in the region (see Table 6.1). The TFR is now about three times the replacement-level rate. Comparing 1978 and 1988 censuses to the TDHS 1991/92 (the most recent and comprehensive source of information about fertility and contraception), fertility appears to be declining slowly. The TFR was estimated at 6.9 in 1978, 6.5 in 1988, and 6.3 in 1991/92. The gradual decline in fertility is also seen when comparing cohorts of older and younger women.

As one would expect, the level of childbearing in urban areas is somewhat lower than in rural areas. The TFR for women living in Dar es Salaam and other urban areas is 4.0 and 5.6, respectively; while that of rural women is about 6.59 children. Age-specific fertility rates in all regions show a peak in fertility during the span from 20-24 years, with higher fertility among rural women of all ages.

Reliable estimates of fertility by region are unavailable, but these can be estimated with confidence for the six zones of the country. Women living in the Lake and Central zones of the country have the highest fertility rate (about 7 children per woman), while the lowest fertility rates are found in the Southern and Coastal zones (see Table 6.2).

Health and Fertility

High fertility rates, young childbearing, and close birth spacing have distinct detrimental effects on the health of women and children in Tanzania.

Table 6.1: Total Fertility Rate in Sub-Saharan Africa, 1992

Country	Total Fertility Rate (per woman)
Ethiopia	7.5
Kenya	5.4
Tanzania	6.3
Uganda	7.1
Zambia	6.5
Zimbabwe	4.6
Sub-Saharan Africa	6.1

Source: World Bank, 1994c.

Table 6.2: Fertility by Zone of Residence, 1991

Zone	Total Fertility Rate (per woman)
Coastal	5.7
Northern Highlands	6.0
Lake	6.9
Central	7.1
Southern Highlands	6.3
South	5.1

Source: TDHS, 1991/92.

³ The total fertility rate is the total number of children that a woman would be expected to bear during her lifetime, on average, if she lived until the end of her reproductive lifespan (age 49), and she experienced current age-specific fertility rates as she aged.

According to recent population surveys:

- about 26 percent of teenagers covered by the survey had already begun childbearing. Among those 15 years old, 7.5 percent had begun childbearing. Among those 19 years old, 53 percent had given birth or were pregnant (Weinstein et al., 1995).
- According to the TDHS 1991/92, about 18 percent of all births occurred less than 24 months after a previous birth.
- Among women aged 35 to 39 years, 7.4 percent had 10 or more children in 1994. Among those aged 40 to 44, 19 percent had 10 or more children. Among those ages 45 to 49, 27 percent had 10 or more children (Weinstein et al., 1995).⁴

The health consequences of childbearing patterns in Tanzania include fetal wastage, inferior anthropometric development of infants, and high rates of maternal morbidity and mortality. More than one-half of children born in the five years preceding the TDHS survey were at elevated risk of dying as a result of the mother's fertility pattern. Thirty-eight percent of children had a single high-risk characteristic, while 21 percent had more than one high-risk characteristic.

Unregulated fertility, combined with inadequate antenatal care visits, have major effects on maternal morbidity and mortality. About one-quarter of all deaths among women of reproductive age in developing countries are attributable to complications of pregnancy and delivery. Maternal mortality is currently estimated to be 342 per 100,000 live births in Tanzania, a level that could be decreased by 5 to 18 percent if all women who say they want no more children realized their desires.

Utilization of Family Planning, Antenatal, and Obstetric Services

Several types of behavior are relevant to family planning and reproductive health. These include use of contraceptives, family planning services, antenatal care, and delivery care.

Contraceptive Use. Almost 18 percent of women aged 15 to 49 used some form of contraception in 1994. About 11 percent of these women used modern contraceptives. A central reason that fertility has declined slowly in Tanzania, despite some improvements in contraceptive supply, female education, and other "modernizing" influences, is that traditional means of birth control, such as post-partum abstinence and breastfeeding, have not been replaced and surpassed by use of modern contraceptive methods. Use of modern contraception has increased in recent years, but remains low.

From 1991 to 1994, modern contraceptive use among women 15 to 49 almost doubled. Aboud, et al. (1996) attributes much of this increase to the success of Tanzania's National Family Planning

⁴ In determining the effects of high-risk fertility behavior on child survival, a mother is classified as "too young" if she is less than 18 years of age, and "too old" if she is over 34 years of age at the time of delivery. A "short birth interval" is defined by a birth occurring less than 24 months after the previous birth, and a child is a "high birth order" if the mother had previously given birth to three or more living children.

(NFP) Program. The NFP Program significantly augmented family planning-related logistical support to health facilities over the early 1990's. Largely due to this improved support, health service facilities were able to offer a better mix of family planning services and were much less likely to encounter shortages of family planning supplies (see Box 6.3).

According to the 1994 TKAP, almost one-third of reproductive-age women in Tanzania report that they have used a method to delay or limit births at some point during their lives. About 13 percent of women reported that they have used the pill, 7 percent used condoms, 3 percent used injections, 2 percent used IUDs, and 2 percent resorted to female sterilization. Fourteen percent of women stated that they used either the calendar rhythm method or withdrawal.

Though data are not available from the TKAP, the TDHS 1991/92 found that only 2 percent of women used contraceptives before they gave birth to their first child. About 37 percent of the women who have ever used birth control say that they began to use contraceptives when they had only one child, which indicates an interest in delaying (rather than preventing) the next birth. Nearly one-quarter (22 percent) of married women who had ever used contraceptives did so for the first time after they had at least four living children. It is likely that these women were seeking to limit their family size, rather than simply delay the next birth.

Currently, about 11.3 percent of all women, and 13.1 percent of married women, use a contraceptive method. Contraceptive use is highest among women ages 30 to 34 (see Table 6.3). About 43 percent of the currently married women who use a modern contraceptive method are taking the pill, another 21 percent use injections, 15 percent have undergone sterilization, and the remaining use condoms and IUDs.

The strongest correlate of contraceptive use in Tanzania, as in most countries, is female education. Among women with no education, 6 percent are using a modern contraceptive method. This increases to 9.6 percent among women with incomplete primary education, and about 13.6 percent among those who have

Box 6.1: Changes in Modern Contraceptive Use in the Early 1990s

Contraceptive use among women aged 15 to 49 almost doubled in Tanzania from 9.5 percent in 1991 to 17.7 percent in 1994. Similarly, modern contraceptive use increased from 5.9 percent to 11.3 percent over the same period. Much of this growth may be attributable to the success of Tanzania's National Family Planning (NFP) Program.

Survey results indicate that from 1991 to 1994, increased contraceptive use cannot be attributed to socioeconomic variables. Over this period, there was little change in the socioeconomic status of the households surveyed. Further, socioeconomic variables that were important determinants of contraceptive use in 1991 remained equally significant in 1994. Variables that were not important in 1991 remained insignificant.

In contrast, access to family planning facilities had a significantly increased impact on contraceptive use in 1994. Aboud, et al. (1996), postulates that this phenomenon is due to the fact that the NFP Program significantly increased family planning-related logistical support to health facilities over the period. Largely because of this support, by 1994 health services offered a better mix of family planning services, including increased availability of injections, intra-uterine contraceptive devices, and foam. Furthermore, these facilities were much less likely to encounter shortages of Family Planning supplies. Survey results indicate that the NFP Program's information and education campaign also likely had a significant impact on modern contraceptive use. However, the NFP Program did not appear to have increased the number of facilities with staff trained in family planning.

Table 6.3: Current Use of Contraception by Age, 1994 (% of all women)

Age	Contraceptive Prevalence
15-19	5.2
20-24	10.6
25-29	13.5
30-34	15.6
35-39	13.2
40-44	14.1
45-49	10.6
Total	11.3

Source: TKAP, 1994.

completed primary school. Most notably, a full 31.1 percent of the relatively few women with some secondary schooling now use a modern contraceptive method. In addition to being a strong correlate of contraceptive use itself, women's education is closely associated with women's apparent ability to realize their reproductive goals (see Box 6.2). Yet, between 1991 and 1994, modern contraceptive use increased more rapidly among uneducated women than among those with education.

Multivariate analysis has been undertaken of demographic and health data in 10 other Sub-Saharan African countries, demonstrating surprisingly consistent effects of secondary schooling of women on numbers of children born. On the basis of these studies, the impact of completed primary school years (ages 7 to 10) is to reduce children born by 0.3 to 0.6 children, on average, whereas the impact of 11 or more years of schooling is to reduce children born by 0.9 to 1.4 children, on average (Ainsworth and Nyamete, 1992). This generalization applies almost equally to women residing in urban areas in Africa as it does in rural areas.

Regional differences in contraceptive use are striking (see Table 6.4). The level of contraceptive use reaches nearly 19 percent among married women in urban areas other than Dar es Salaam. However, only slightly more than 4 percent of married women in rural areas use a modern method to delay or limit births. By far the highest contraceptive use occurs in Kilimanjaro region, where more than one-quarter of all married women in the reproductive years are currently using a modern family planning method. The regions of Arusha, Lindi, Iringa and Singida also have relatively high contraceptive prevalence (at least 9 percent). The regions with the lowest contraceptive use are Mtwara, Shinyanga and Mwanza.⁵

Choice of Family Planning Service Provider.

According to the TKAP, 71 percent of modern contraceptive users obtain methods from government facilities. Dispensaries are the major providers for these clients (38 percent), followed by government hospitals (35 percent), and health centers (25 percent). Village health workers hardly figure in client use at all.

Box 6.2: Women In Need of Family Planning Services

According to the TDHS, about 41 percent of currently married women wish to delay their next birth at least two years, and another 23 percent wish to have no more children. This means that a total of about 64 percent of married women are considered to be potentially in need of family planning for child spacing or fertility limiting purposes. While many of those women are using contraceptives, about 27 percent of all currently married women are not employing contraceptive methods, and are at risk of an unwanted or mistimed pregnancy. It is important to note that most of the women who are not using contraceptives and yet wish to delay or limit pregnancies have little education.

Table 6.4: Current Use of Contraceptives by Region, 1991 (% of currently married women)

<i>Region</i>	<i>Contraceptive Prevalence</i>
Arusha	12.3
Dodoma	9.6
Dar es Salaam	10.9
Iringa	9.0
Kagera	3.9
Kigoma	2.8
Kilimanjaro	25.3
Lindi	9.7
Mara	3.0
Mbeya	5.4
Morogoro	4.5
Mtwara	1.5
Mwanza	2.3
Pwani	3.3
Rukwa	4.4
Ruvuma	5.1
Shinyanga	1.2
Singida	10.7
Tabora	4.1
Tanga	7.5
Total	6.6

Source: TDHS, 1991/92.

⁵ Again, the regional estimates from the TDHS should be viewed cautiously, as they are based on relatively small samples.

On the other hand, a fledgling private medical sector serves about 19 percent of family planning clients, the majority of whom are served by mission facilities (52 percent), the rest by pharmacies (25 percent), and private doctors/clinics (19 percent). Mission facilities also receive public subsidies, and when they provide contraceptives, often do so for no charge. Again, the form of providing services that has proven to be effective and relatively inexpensive in many countries, that is, community-based distribution (CBD) agents, are not active in this market⁶. Only 0.7 percent of all clients report use of a CBD worker.

Use of Antenatal and Delivery Care. Most women in Tanzania have received antenatal care during recent pregnancies. According to mothers' responses in the TDHS, about 92 percent of all births received antenatal care from a medical professional. Most frequently, that care was provided by a trained nurse/midwife (56 percent) or a maternal and child health aide (30 percent). On opposite ends of the spectrum, doctors and traditional birth attendants provided only 7 and 4 percent of all antenatal care, respectively.

Educational attainment of the mother was closely related both to the likelihood of obtaining antenatal care, and to the source of that care. For example, about 7 percent of women with no education did not get antenatal care, compared to 1 percent among women with complete primary education, and 0.2 percent among those with secondary schooling. While, in general, very few women obtained services from doctors, one-quarter of those with at least some secondary schooling were under doctors' care (TDHS, 1991/92).

Despite the apparently high coverage of antenatal care, Tanzanian women tend to start their care later than is medically advised and thus have fewer than the recommended number of visits before delivery. On average, women start their antenatal care at 5.6 months gestational age (instead of the recommended 3 months). Thus, they obtain care only about 5 times before delivery, on average (instead of the recommended 12) (TDHS, 1991/92).

About one-half (53 percent) of births during the 5 years prior to the TDHS took place in health facilities, while the rest took place in the home. Place of delivery was strongly correlated with place of residence. Among urban women, about 85 percent of deliveries took place in health facilities, while among rural women, only 45 percent did. As would be expected, educated women were far more likely to deliver in health facilities than were uneducated women (81 percent of deliveries by women who had some secondary education, compared to 38 percent of deliveries by women with no education).

HOUSEHOLD EXPENDITURES ON FAMILY PLANNING, ANTENATAL AND OBSTETRIC SERVICES

The TDHS 1991/92 collected no information about household expenditures on family planning services. However, the HRDS 1993/94 did collect expenditure data and therefore provides clues about the direct and indirect costs of family planning and related reproductive health services.

The HRDS reveals that about one-third of women using family planning spend some money for contraception. Payments are made for consultations, commodities, and travel to and from family

⁶ In community-based distribution, family planning workers visit women in their homes to provide information about family planning and to distribute oral contraceptives and condoms to interested women.

planning service centers. In rural areas, average expenditures for family planning were Tsh 843 per user in 1993, compared with Tsh 1,018 per user in Dar es Salaam, and Tsh 801 per user in other urban areas. An important component of these expenditures is travel costs. Per user, the travel costs amounted to Tsh 448 per user in rural areas, Tsh 306 in Dar es Salaam, and Tsh 223 in other urban areas. Since travel time also involves an opportunity cost (time that might have been devoted to household or farming activities), rural travel costs are likely to be even greater.

Among the one-quarter of those using antenatal care and delivery services in the past year who had any expenditures for those services, an average of Tsh 1,974 was spent on services related to the pregnancy. This figure varied from Tsh 2,619 per year in urban areas other than Dar es Salaam, to Tsh 4,247 in Dar es Salaam, and Tsh 1,374 per year in rural areas.

DEMAND FOR FAMILY PLANNING SERVICES

There are several components that allow a better understanding of reproductive behavior in Tanzania. First, we can look at the extent to which reproductive-age women are even aware of methods of regulating fertility, as well as couples' attitudes toward modern contraception. This information can identify the potential for increased contraceptive use through greater awareness of modern methods. Second, we can examine which women are likely to use modern contraception and how much of a role supply and demand factors play in that decision. By supply-side factors, we mean characteristics of the nearest potential source of family planning services (distance, the number of methods available, availability of other types of pharmaceuticals, and so forth). By demand-side factors, we mean individual and household characteristics that influence the underlying demand for children, or desired family size. Third, we can take a step back and examine the correlation between desired family size, contraception and fertility, and the determinants of desired family size.

Knowledge and Attitudes

Knowledge. Tanzanian women appear to have limited knowledge of modern contraception, and there is very little knowledge about methods other than those which are most common. About 80 percent of all reproductive-age women in Tanzania say that they know of at least one method to limit or space births, and most of those are familiar with modern contraceptive methods. Oral contraceptives are the best known method, and nearly all the women who are familiar with any family planning method say that they have heard of the pill. Most women (70 percent) have at least heard of condoms, and about 58 percent know of female sterilization (Weinstein, 1995).

Knowledge of methods and sources is greater among urban women than among the rural population. Women with no education are the least likely to be familiar with contraceptive methods. In contrast, nearly all of the women with at least a secondary education know about family planning. Knowledge of sources of family planning services parallels knowledge of the methods themselves.

Attitudes. The TDHS 1991/92 and the TKAP 1994 obtained indicative information about the attitudes that women and men have toward family planning. For example, women were asked whether they believed that it is acceptable to have messages about family planning on the radio or television. They were asked how frequently in the past year they had discussed family planning with their husbands. Among those who knew of at least one contraceptive method, each woman was asked whether she approves of family planning, and whether her husband does.

In general, most women thought that family planning messages on mass media were acceptable, and the percentage who found them acceptable increased in the early 1990's. In 1991, 80 percent of urban women and 67 percent of rural women held this view. By 1994, 89 percent of urban women and 71 percent of rural women approved of these messages. Women who had never been to school were somewhat less likely to approve of family planning messages than were women who had some primary education (58 versus 73 percent, respectively).

Husband-wife communication on the issue of family planning appears to be limited. Less than one-half (44 percent) of the married women of reproductive age said that they discussed family planning with their husbands during the year before the TDHS. Most of the women who had such conversations said that they had talked with their husbands about the topic only once or twice during the year.

About 85 percent of currently married, non-sterilized women said that they approve of family planning. This figure is lower in rural areas than in urban ones (83 percent and 92 percent, respectively). About one-quarter of the women said that they believe that their husband disapproves of family planning. Again, education is strongly correlated with approval of family planning, and with concordance between husbands' and wives' beliefs.

More than three-quarters of the married women with at least a secondary-school education said that they and their husbands agree that family planning is acceptable. About 11 percent are in disagreement with their husbands on this issue, and only about 9.5 percent of women who do or who do not approve of family planning say that they are unsure about their husbands' attitudes. In striking contrast, about 27 percent of women with no schooling say that they and their husbands agree that family planning is acceptable. In 18 percent of the cases, women with no schooling approve of family planning but believe that their husbands disapprove. A full 50 percent of women with no schooling (both those who approve and those who disapprove of family planning) are unsure what their husbands believe about the acceptability of contraception.

Determinants of Contraceptive Use

Access to family planning facilities appears to have had a significantly positive impact on contraceptive use over the early 1990's. In 1991, only the presence of a family planning hospital within 5 kilometers was found to be a statistically significant contributor to contraceptive use. However, by 1994, the presence of a hospital within 10 kilometers and a health center within 5 kilometers was also significant. Neither access to dispensaries nor facility quality measures contributed significantly to contraceptive use in either year. Aboud, et al. (1996), hypothesizes that the 1994 TKAP survey sample may not have been large enough to detect this effect. They also point out that in the 1994 survey, a health facility offering family planning had to meet minimum quality standards. This requirement may reduce the observable quality effect by eliminating the very low-quality facilities from the pool of considered locations.

On the other hand, individual characteristics, such as the woman's age, education, religious affiliation, residence and household assets, were strongly associated with the probability of using modern contraception. In particular, having a primary education of three years or more was the strongest independent predictor of current contraceptive use. Also important as determinants of contraceptive use were being a member of an organized religion (Catholic, Muslim or Protestant), residing in an urban

area, and being in a household that had a wood, cement or tile floor, rather than a dirt floor⁷. As would be expected, women in the Northern and Southern Highlands were more likely to use contraception, all else being equal.

Demand for Children

Given the apparent importance of demand-side factors highlighted in the analysis by Beegle (1994), it is useful to examine women's reproductive goals. According to the TDHS and the TKAP, women in Tanzania wish to have about 6 children⁸. As is found for fertility itself, desired family size varies greatly by region and women's educational level. Women in urban areas wish to have about 5 children, for example, while those in rural areas state that they would prefer about 6 children. Women with no education reported that they would want 7 children, and those with complete primary schooling said that they would prefer 5 children. Women with at least some secondary education wished to have markedly fewer (4) children.

An analysis of the determinants of desired family size has shown that the same individual and household characteristics that were strong correlates of current use of contraceptives also are closely associated with desired family size. In particular, women's education over the first three years of primary school is strongly correlated with the desire to have few children, relative to the average. Women with three years of education, for example, wish to have about .5 fewer children than women with no education. Higher levels of educational attainment lead to more dramatic changes in reproductive goals. Women with 8 or more years of schooling wish to have 1.7 fewer children than do women with no education at all, controlling for factors such as residence, household assets, and age. Living in an urban area and being a member of an organized religion are also good independent predictors of wishing to have fewer children. Being part of an agricultural household is a predictor of wishing to have more children.

In short, individual and household characteristics that lead married women to want fewer (or more) children are the same ones that lead women to use (or not to use) modern family planning methods. Among those characteristics, female education is most important.

SUPPLY OF FAMILY PLANNING SERVICES

Policy Framework

Historical Background. The government's support for family planning can be traced to 1969, when the government advocated child spacing, advising that individuals have social responsibilities to raise their children to be responsible and productive adults. Official support strengthened the National Family Planning Association (UMATI) that had organized in 1967. In 1974, the MOH started providing

⁷ In the absence of other data on the economic status of the household, type of flooring was used as a proxy for the economic well-being of a family in Tanzania.

⁸ For the TDHS, information in this section refers to responses to the questions: (for women with living children) "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" and, for women without living children, "If you could choose exactly the number of children to have in your whole life, how many would that be?"

family planning services as an integral component of the Maternal and Child Health Program, with assistance from USAID. Four years later, Tanzania adopted the Alma Ata declaration, which recognized family planning as one of the essential elements of primary health care.

Current Policy. Recognizing the reproductive health benefits of family planning, as well as problems posed by rapid population growth, the Government of Tanzania adopted a national population policy in 1992 that aims to (a) reduce the country's population growth rate to 2 percent by the year 2007; (b) educate the public on benefits of family planning and reproductive health; and (c) foster conditions that will lead to greater accessibility to family planning services. A parallel endeavor, the National Family Planning Program Plan of Operations, was launched in 1987 with the explicit aim of increasing contraceptive use in the country from less than 6 percent in 1987/88 to 25 percent by 1993. A National AIDS Commission, responsible for combating the AIDS epidemic through a number of specific (and vertical) actions, has also been established.

A key concept underlying the country's National Family Planning Program is that bringing family planning services within easy physical and financial reach of potential clientele will lead to a significant and sustained increase in effective contraceptive use. The expansion of availability is being engineered primarily through the government's existing health infrastructure, that consists of the network of health centers and dispensaries found in each of 104 districts, as well as through district, regional, and consultant hospitals found in municipalities. In addition, some efforts have been made to institute community-based distribution through village health workers. Recently, the program has been giving increasing attention to a broader reproductive health agenda.

Organization and Structure of Family Planning Services

The major actors in the provision of family planning services in Tanzania are the MOH, through its maternal and child health program, and UMATI. Minor participants include the non-governmental Organization of Tanzania Trade Unions and the Tanzania Women's Organization. Over the years, the MOH and UMATI have developed a collaborative working relationship in the provision of family planning services, and are considered to be the primary institutions responsible for implementing the National Family Planning Program. MOH facilities function as the service delivery points. UMATI, in contrast, has been responsible for the procurement and distribution of contraceptives, providing training in basic family planning skills for service providers, and family planning advocacy. By April 1994, UMATI had eight clinics and funds to establish ten more. It was also operating a community-based distribution program, covering a total population of more than 500,000.

Family planning services do appear to be available throughout much of the country, in both government and private establishments. As shown in Table 6.5, of the nearly 4,000 government health centers and dispensaries in mainland Tanzania, the MOH reported that more than 3,100 (80 percent) were providing mother-child health (MCH) services and about 2,700 (69 percent) were providing family planning services in 1993.

There are some noteworthy regional differences. In the regions of Dar es Salaam, Pwani and Morogoro, relatively few of the government health centers and dispensaries offer family planning services, while in Ruvuma, Tabora, Kagera, Kilimanjaro, Mbeya, and Mwanza, more than 85 percent of the health facilities are reported to distribute contraceptives.

The widespread availability of family planning services was confirmed in a recent analysis of the TDHS 1991/92, which collected detailed data about a sample of 308 government and non-government health facilities in Tanzania. Beegle (1994) found differences in the availability of contraceptive methods by health facility ownership and level (hospital versus dispensary). The analysis showed that the greatest variety and level of family planning services could be found at government hospitals, closely followed by private hospitals and government dispensaries. Private dispensaries were least likely to be able to provide contraceptive services.

As shown in Table 6.6, all 54 government hospitals included in the TDHS sample offered family planning services. Nearly all hospitals (94 percent) had medical staff trained in IUD insertion, and a majority (61 percent) had a doctor on staff who was trained in sterilization procedures. At least 90 percent of the government hospitals in the sample offered condoms, oral contraceptives, IUDs, and injectable contraceptives. About 80 percent of the hospitals reported that they offered sterilization for the purpose of contraception⁹. The typical government hospital could give clients a choice among about five family planning methods. The 1994 TKAP indicated that contraceptive availability in government hospitals increased between 1991 and 1994.

About two-fifths of the 28 non-government hospitals in the sample reported that they offered at

Table 6.5: Share of Health Facilities Providing Mother-and-Child Health and/or Family Planning Services, 1993

<i>Region</i>	<i>Total Number of Facilities</i>	<i>Providing MCH Services (% of total)</i>	<i>Providing Family Planning Services (% of total)</i>
Arusha	230	83	68
Dar es Salaam	315	32	25
Dodoma	201	68	76
Iringa	217	95	56
Kagera	167	99	86
Kigoma	142	89	71
Kilimanjaro	227	91	86
Lindi	128	83	76
Mara	163	88	87
Mbeya	251	86	65
Morogoro	258	74	53
Mtwara	142	95	95
Mwanza	244	95	86
Pwani	233	48	47
Rukwa	116	91	61
Ruvuma	147	95	95
Shinyanga	204	94	76
Singida	132	90	68
Tabora	158	89	87
Tanga	250	77	70
Total	3,925	80	69

Source: Beegle, 1994.

⁹ This is somewhat at odds with the statement that only 61 percent of the government hospitals had a doctor on staff who was trained in sterilization procedures.

least one family planning method. A large majority of the private hospitals had medical staff trained in IUD insertion and sterilization procedures (79 and 70 percent, respectively). As with government facilities, private hospitals were very likely to offer condoms, oral contraceptives, IUDs and contraceptive sterilization. Unlike public facilities, few private hospitals offered injectable contraceptives. On average, a private hospital could offer about three contraceptive methods to clients.

Table 6.6: Availability of Family Planning Services in Government and Private Hospitals and Dispensaries

Characteristic	Type of Facility			
	Hospital		Dispensary	
	Government (%)	Private (%)	Government (%)	Private (%)
Offer any family planning method	100	78.6	95.0	46.7
Have medical staff trained in ...				
IUD insertion	94.4	78.6	40.9	13.3
Sterilization	61.5	70.4	n/a	n/a
Methods Offered:				
Condoms	96.3	64.3	91.2	37.8
OC	92.6	71.4	83.4	28.9
IUD	90.7	67.9	8.3	11.1
Injections	90.7	39.3	15.5	4.4
Foaming tablet/foam/jelly	55.6	21.4	11.1	6.7
Contraceptive sterilization	79.6	70.4	n/a	n/a
Mean number of methods available	5.1	3.4	2.0	0.9

Note: Survey included data on 54 government hospitals, 28 private hospitals, 181 government dispensaries, and 45 private dispensaries.

Source: Beegle, 1994, based on TDHS 1991/92.

The TDHS found that government dispensaries were almost as likely as government hospitals to offer at least one form of contraception, but the range of choices was much narrower in dispensaries than in the higher-level facilities. By far the most commonly available methods in the 181 public dispensaries in the sample were condoms and oral contraceptives. While about 41 percent of government dispensaries had medical staff trained in IUD insertion, only about 8 percent of the facilities offered the method. The typical government dispensary could provide about two methods.

The TKAP study found that oral contraceptives and condoms were commonly available in dispensaries in 1994. Furthermore, injectable contraceptives, which were available in only about 20 percent of dispensaries in 1991, were found in 77 percent of these facilities by 1994. Similarly, the number of dispensaries offering IUD insertion increased to about 25 percent by 1994.

About one-half of the 45 private dispensaries in the 1991 sample offered family planning services, and few had medical staff trained in IUD insertion. About 38 percent offered condoms, 29 percent offered oral contraceptives, and 11 percent offered IUDs. On average, fewer than one method was available at private dispensaries.

Problems of Quality and Implementation

Quality and Access. A 1988 survey of services attributed poor program performance and low rate of acceptance of family planning methods to a lack of trained personnel, low worker morale, unsatisfactory and inadequate physical facilities, lack of basic equipment, frequent shortages, and non-availability and restricted choice of contraceptives. Above all, weak and poorly directed program support

to information, education, and communication activities was blamed for the poor program performance.

There are major geographical disparities in the provision of family planning services throughout the country. For example, relatively few of the government health centers and dispensaries in Morogoro, Pwani, Rukwa, and Dar es Salaam offer family planning services, whereas more than 85 percent of the health facilities in Mara, Kagera, Mtwara, and Ruvuma are reported to be able to distribute contraceptives.

Logistic Support. The logistics component of the NFP was aimed at establishing viable commodity- procurement procedures, reliable transportation from the central stores to the distribution points, and good storage and record keeping practices at all levels. The program was to provide essential supplies and equipment to one-half of the dispensaries and health centers by 1991, and all of the facilities by 1993. Logistics systems were to be developed and/or improved. In addition, it aimed to provide transport for supervision to all facilities by 1993.

The 1992 National Family Planning Program Annual Report identified early difficulties with commodity distribution under the program. However, USAID and Aboud et al. (1996), state that since 1992, the program has significantly improved family planning-related logistical support to health facilities. Largely because of this support, by 1994 health service facilities offered a better mix of family planning services. Furthermore, these facilities were much less likely to encounter shortages of family planning supplies. However, the NFP Program did not appear to have increased the number of facilities that offered staff training in family planning.

Few improvements in the provision of transportation for the use of supervisors have been made. For example, the program was able to procure only two of the six trucks originally required, and only 20 of the planned 156 station wagons. None of the 5,700 bicycles that were anticipated have been distributed for use by supervisors at health centers, dispensaries, and villages.

PUBLIC EXPENDITURES ON AND UNIT COSTS OF FAMILY PLANNING

The Program's five-year budget was to be US\$28 million for 1989 to 1994. Of this, the government was to contribute about US\$1.8 million to institutional support, and donors would contribute the rest. At this level of funding, expenditures from all sources on family planning would average about US\$0.20 per capita, per year. This compares with about US\$0.22 per capita in Kenya in 1990, about US\$0.53 in Lesotho in 1992, and more than US\$1.40 per capita in Zimbabwe in 1989.

Arriving at a consolidated account of expenditures for the NFP Program is difficult because of the various means of accounting used by the major donor agencies, and the problem of disentangling the costs of delivering family planning services from the costs of other types of maternal and child health services in the public health system. However, it is possible to arrive at rough estimates of 1992 expenditures to illustrate the distribution of funds among program activities, and to arrive at rough estimates of some of the costs of the current level of service delivery.

Table 6.7 shows the estimated expenditures in 1992 by the two major donor agencies, UNFPA and USAID, and by the Government of Tanzania. This only covers items that are directly associated with family planning and population activities, such as contraceptive commodities and logistics, training of service providers and community leaders, international education and communication (IE&C)

campaigns, and population censuses and research. It excludes many of the direct costs of service delivery that cannot be separated from the overall government health budget, such as the cost of MCH staff time and multi-use equipment in health centers and hospitals. It also excludes any private expenditures for family planning, either on the part of private institutions or households.

An estimated Tsh 533 million were expended on the National Family Planning Program in 1992. About 85 percent of the total was donated by the major donors to the program, and the remainder was from the Government of Tanzania. Of the government's contribution, approximately 54 percent was in the form of tax exemptions. (It is important to reiterate that this estimate excludes the government's contributions in the form of staff support for Ministry of Health and local government personnel, which are likely to be substantial. It was not possible to arrive at plausible estimates of those contributions for this exercise.)

Several other donor agencies have provided smaller amounts of funding to the program. For example, the German development agency GTZ has family planning-related programs in the districts of Bagamoyo, Lushoto, Pangani, Rombo and Handeni. The UK's Overseas Development Agency started a five-year family health program in three districts of Kyela, Rungwe and Ileje in 1992, that eventually may be extended to include Makete and Njombe districts in Iringa.

Nearly one-half of the program funding was devoted to commodities and their distribution through a logistics system. This included purchase of vehicles and other supplies, as well as the contraceptive products themselves. Another 26 percent, or about Tsh 138 million, was spent on training of trainers and service providers, and on an orientation of local and national leaders.

Given the imprecision of the budget estimates, one can enter only cautiously into the calculation of unit costs. However, it is worth conducting the exercise for illustrative purposes, making conservative assumptions. There are two types of outputs for which unit costs can be very roughly estimated from the data at hand. The first is training outputs (or trainees), and the second is the cost of commodities. Lack of information about the effectiveness of contraception in the Tanzanian context precludes estimation of cost per birth averted, which is a standard type of unit cost often calculated in analyses of family planning programs.

Cost per Trainee. A total of 1,788 individuals were trained in the NFP Program. To be conservative in calculating unit costs, we can assume that all of these were trained during 1992. Under that assumption, and taking Tsh 138.45 million as a reasonable estimate of the total expenditures on training alone in 1992, the average cost per trainee is calculated to be Tsh 77,433. If the trainees were trained over several years, instead of just 1992, then the cost per trainee would be higher.

Table 6.7: Illustrative Tally of Expenditures for the National Family Planning Program, by Source, 1992 (Tsh Millions)

<i>Item</i>	<i>UNFPA</i>	<i>USAID</i>	<i>GOT</i>	<i>Total (% of total)</i>
Training	65.41	73.04		138.45 (26%)
Logistics/Commodities	155.50	90.44		245.94 (46%)
IEC	2.05	n/a	7.60	9.65 (2%)
Research	1.48	n/a		1.48 (.3%)
Policy Development			10.97	10.97 (2%)
Population Census			11.20	11.20 (2%)
Other (including staff salaries not otherwise accounted for)	30.82	42.67	41.97	115.46 (22%)
Total	255.26	206.15	71.74	533.15 (100%)

Source: Mpangile, 1994.

Cost of Commodities and Logistics per Contraceptive User. As noted earlier, the full costs of family planning service delivery are not captured in the expenditures for the NFP Program. Personnel costs at the service delivery point are excluded (for example, the salaries for the MCH workers). A reasonable alternative is to restrict the analysis to the cost of delivering commodities to contraceptive users exclusive of those personnel costs. This would cover the purchase and distribution of oral contraceptives, for example.

The total expenditures on commodities and associated logistics are estimated to be Tsh 246 million for 1992. According to the Demographic and Health Survey, 4.4 percent of women ages 15-49 were using a form of modern contraception in 1991¹⁰. That is, approximately 245,000 women were using a modern family planning method around 1992. Of those women, about 73 percent, or about 178,000 women, received services from a government facility. This implies that the commodity and logistical cost per user equaled Tsh 1,382 in 1992.

DISTRIBUTION OF PUBLIC SPENDING

This section suggests that at the low level of contraceptive prevalence that exists in Tanzania today, the benefits of the program are skewed toward higher income families who are mostly likely to use contraception. This is illustrated in Table 6.8. Among all users of hospital facilities for contraceptive services, 35 percent are from the wealthiest 20 percent of the population, whereas only 11 percent are from the poorest 20 percent¹¹. This applies in both rural areas and urban areas (other than Dar es Salaam). Only in Dar es Salaam does this pattern vary, as members of higher-expenditure households have the option of using, and do indeed make greater use of, private providers, including pharmacies. Moreover, use of family planning is most likely to cut across expenditure groups in Dar es Salaam, where prevalence is highest. Charging fees is one way of remedying this distortion, but is unlikely to be adopted, since advocates of family planning would resist it as another barrier to universal availability.

Table 6.8: Share of Those Obtaining Family Planning Services and/or Supplies from Hospitals, by Expenditure Quintile (%)

<i>Income Group</i>	<i>All Hospital Users</i>	<i>Rural Users</i>	<i>Other Urban Users</i>	<i>Dar es Salaam Users</i>
Lowest 20%	10.5	21.4	15.0	22.9
Highest 20%	34.7	29.4	25.0	15.3

Source: HRDS, 1993/94.

¹⁰ This figure does not correspond precisely to data presented earlier for two reasons. First, it refers to all reproductive-age women, rather than only those currently married. Second, it excludes women who have been sterilized, because they would not require any commodities.

¹¹ These data, which derive from the HRDS, are not disaggregated according to whether the hospital was a public, mission, or private-for-profit facility. It is reasonable to assume, however, that the general pattern of use by expenditure groups would prevail among purely public providers for two reasons. First, most hospitals in the country that provide family planning are government hospitals or are publicly subsidized mission hospitals. Second, use of curative health care (in hospitals) (see Table 6.6) follows an almost identical path among expenditure groups.

CONCLUSION

The Government of Tanzania, assisted by two strong donor agencies, has integrated family planning services into its vast rural health infrastructure. While there are opportunities for greater and more effective outreach and for correcting program weaknesses, services are reasonably accessible to women who seek them. As in health and education, Tanzania has done a remarkable job of making this service available to the public.

The main questions that remain are similar to those in the education and health sectors generally. Why so little impact? Why is contraceptive use still so rare and large families so common? The unambiguous answer lies in the preferences of households and individuals. In the predominantly small-scale agricultural economy with a very low stock of women educated beyond primary school, the demand for children is high and, consequently, the use of family planning services is low.

In Tanzania, as in virtually all other countries, the most significant influence on the demand for children is the education of women. Education alters the value of a woman's non-domestic and domestic time, widens her life horizons, improves her ability to space her children and to realize lower goals for family size, and induces rapid changes in fertility preferences and contraceptive use. This is not to say that the government should abandon its supply program, but that the impact of its current policies could be increased by focusing on increasing demand, particularly through improved education of girls. More than in other sectors, in the realm of population policy it appears that the most important step that the government can take is to increase education opportunities for girls and women. Education subsidies also lend themselves to much better targeting so that the incidence impact can be much more pro-poor than commodity-driven programs.

NUTRITION

High levels of maternal and child malnutrition in Tanzania are clear detriments to the well-being of individuals and households. Analyses of the nutritional status and food consumption patterns, however, indicate that Tanzania is in better shape than might be expected, given other health and social indicators. This implies that specific and targeted interventions, rather than national or universally available nutritional support programs, may have great potential to address the nutritional problems that exist.

OUTCOMES

Child Nutritional Status

Results from the 1991/92 TDHS show that, among children under five years of age, the percentages of moderately malnourished children are 29 percent for weight-for-age, 47 percent for height-for-age, and 6 percent for weight-for-height (see Table 7.1)¹. Malnutrition rates are much lower in the first year of life, but increase sharply in the second year of life. These trends are similar to those found in malnourished children elsewhere.

Data suggest that urban children are better nourished than their rural counterparts. However, this appears to reflect the much lower incidence of malnutrition in Dar es Salaam. There is little variation in child malnutrition rates between the rural areas and the urban areas excluding Dar es Salaam.

Tanzania's major child-nutrition problem appears to be stunting from longer-term, chronic undernutrition

Table 7.1: Nutritional Status by Demographic Characteristics
(% of children under 5 years of age who are moderately malnourished)

<i>Characteristic</i>	<i>Stunted (height- for-age)</i>	<i>Wasted (weight-for- height)</i>	<i>Underweight (weight-for-age)</i>
<i>Age (months)</i>			
Less than 6	12.0	2.1	5.4
6-11	25.6	6.8	28.9
12-23	49.5	9.8	36.7
24-35	57.2	4.9	32.6
36-47	59.5	3.4	30.2
48-59	56.8	4.4	27.6
<i>Sex</i>			
Male	48.1	6.2	28.7
Female	45.3	5.1	28.9
All Children	46.7	5.6	28.8

Source: TDHS, 1991/92.

¹ The reference that is used for malnutrition here (as in most other studies) is the United States National Center for Health Statistics (NCHS). The percentage of children whose anthropometric indicators are more than minus two standard deviations from the NCHS mean level are considered moderately malnourished. The percentage of children whose anthropometric indicators are more than minus three standard deviations from the NCHS mean level are considered severely malnourished.

rather than wasting from short-term, acute food deficits. Malnourishment for a significant proportion (about 17 to 19 percent) of children begins in the first year of life. Reasons for this may be low-birth weight, sustained by inadequate breast-feeding and complementary feeding practices.

For many children malnutrition sets in during weaning when breast milk intakes decline sharply. That problem may be further complicated by premature introduction of weaning foods. Perhaps more importantly, during weaning, children may be exposed to contaminated food and water, and thus contract diarrheal diseases that further deplete nutritional reserves.

International Comparisons. The levels of child malnutrition in Tanzania are not unusually high relative to other Sub-Saharan African countries or relative to other developing countries with comparable income levels. Indeed, the incidence of moderate wasting (i.e., the proportion of children with low weight-for-height) in Tanzania is only one-half of the level that would be predicted at its per capita income level. As shown in Table 7.2, while the incidence of moderate wasting in other Sub-Saharan African countries is in the range of 9 to 11 percent, that in Tanzania is less than 6 percent. Indicators of stunting and wasting, which are manifestations of longer-term nutritional deficiencies, show that Tanzania has about average conditions, compared to its neighbors.

Table 7.2: Indicators of Undernutrition in Sub-Saharan Africa, 1980-1992 (% of children under 5 moderately malnourished)

Country	Stunting	Wasting	Underweight
Tanzania	46.6	5.5	28.5
Zambia	59.4	10.0	24.7
Zaire ^a	46.0	9.6	33.4
Rwanda	34.0	11.4	36.6
Malawi	61.0	8.0	24.0
Kenya	41.0	10.0	17.0
Burundi	60.0	10.0	38.0
Uganda	25.0	4.0	23.0

a. Now Democratic Republic of the Congo
Sources: UNICEF, 1992; Government of the Republic of Zambia, 1990; Kenya Rural Nutrition Survey, 1987.

Time Trends. No nationally-representative estimates of child malnutrition were available until the TDHS 1991/92 was conducted, so it is not possible to analyze temporal changes in child malnutrition rates. The Tanzanian Food and Nutrition Center (TFNC) found no evidence of any trend since 1960 from the various spot surveys it conducted, except in areas where specific multi-sectoral nutrition intervention programs like the Iringa Joint Nutrition Support Program (JNSP) had been undertaken. TFNC spot surveys conducted in 1986-87 suggested an average moderate protein-energy malnutrition (PEM) rate of 40 percent and a severe PEM rate of 6 percent for children under 5 in the country. Corresponding rates obtained by the TDHS for 1991-92 were 29 percent and 7 percent, respectively. However, since the TFNC surveys were clinic-based spot surveys (not random household surveys of the population), no conclusions can be drawn from these sets of numbers about changes in malnutrition over time.

Micronutrient Deficiencies. The significant micronutrient deficiencies prevalent in Tanzania include nutritional anemia, iodine deficiency disorders, and vitamin A deficiency. While there are no nationally-representative data, spot surveys done by TFNC provide some insights about the prevalence of the deficiencies.

- **Nutritional anemia.** A 1991 TFNC study reviewed information related to anemia and gathered data from 15 hospitals in 14 regions. The study found that among hospitalized children under five years of age, anemia accounted for 20 to 80 percent of the

admissions. Anemia accounted for 18 to 87 percent of admissions of pregnant women. Nationally, anemia has been estimated to affect about 7.2 million people (32 percent of the population), including 45 percent of children under five, and 80 percent of pregnant women (Kavishe, 1993).

- Iodine deficiency disorders (IDD). TFNC estimates that nearly 40 percent of the population (10 million people) live in areas deficient in iodine and are at risk of IDD. Some 5 million people suffer from endemic goitre, and another 610,000 suffer from cretinism. The severity of IDD is highest in the highlands and mountains of the Western and Eastern arms of the Great Rift valley (Kavishe, 1993).
- Vitamin A deficiency. According to the WHO, there is a public health problem when more than 0.5 percent of children exhibit clinical signs of vitamin A deficiency. Virtually all geographical areas in Tanzania report clinical signs above 0.5 percent. It is estimated that vitamin A deficiency results in 2,000 to 4,000 new cases of childhood nutritional blindness each year (Kavishe, 1993).

Regional Differences. There are substantial regional differences in the proportions of children under 5 that are underweight, wasted, or stunted. Generally, Dar es Salaam and the Lake Zone (Tabora, Kigoma, Shinyanga, Kagera, Mwanza and Mara) have the smallest proportion of underweight children. On the other hand, the Central Zone (Dodoma and Singida) and Southern Zone (Mtwara, Lindi and Ruvuma) have among the highest proportion of underweight children. The regional differences are large. The moderate rate of protein-energy malnutrition (based on weight-for-age) in the region having the highest rate of child malnutrition (Mtwara) was over two-and-one-half times that in the region having the lowest rate (Mara). Thus there is scope for regional targeting of interventions.

Gender Differences. Few, if any, significant gender differences exist in the proportion of children under 5 who are malnourished by any indicator. If anything, the data suggest a slightly higher rate of wasting and stunting among boys relative to girls (although the differences are not statistically significant). The nutrition data are consistent with mortality data that show a small (about 10 percent) infant and child mortality advantage for girls. These results are in stark contrast to those from other parts of the world, such as South Asia, which show significantly higher rates of malnutrition for girls than for boys.

Illness-Malnutrition Complex. Critical for an understanding of the nutrient needs and problems in Tanzania is an acknowledgment of the relationship between poor health conditions and child malnutrition. The high prevalence of diarrheal disease, intestinal parasites, and measles all decrease children's ability to absorb essential nutrients and increase the total nutrient requirements. In turn, protein-energy malnutrition and vitamin deficiencies increase children's susceptibility to infectious disease.

A recent study of the burden of disease in Eastern Africa noted that malnutrition is a risk factor for many of the largest killers in the region (World Bank, 1995b). Using a calculation of Population Attributable Risk, the authors adjusted the estimates of the distribution across causes of deaths to children under 5. They found that up to 29 percent of all deaths to young children could be attributed to malnutrition, and that these were deaths for which the immediate cause was identified as either diarrhea or pneumonia.

Maternal Nutritional Status

Maternal malnutrition affects infant and child malnutrition. Child malnutrition, in turn, is a strong determinant of the nutritional status of the next generation of reproductive-age women.

A measure of maternal nutritional status is the prevalence of low birth weight, or the proportion of infants born with a weight under 2500 grams. The TDHS estimated the incidence of low birth-weight in Tanzania to be 18 percent. This is slightly higher than the average for Sub-Saharan Africa (15 percent) and may indicate that low birth weight is a public health problem in Tanzania. The high incidence of low birth weight may be the result of many factors, including the poor nutritional status of women, poor nutrition and prenatal care during pregnancy, and a high load of malarial and other infections during pregnancy. The TDHS also obtained information on the anthropometric indicators of mothers. These data show that about 4 percent of Tanzanian mothers are shorter than 145 centimeters (cm), and 10 percent have a mean body mass index (BMI) of less than 18.5 cm, indicating that they are likely to be malnourished. However, in some regions, such as Mtwara, as many as 12 percent and 21 percent of mothers have low height and BMI, respectively.

There is a strong association between low height and BMI on the one hand, and maternal education on the other. For example, only 4 percent of women with at least some secondary education had BMI less than 18.5, compared to 12 percent of women with no education.

HOUSEHOLD NUTRIENT INPUTS

With the exception of a few targeted interventions, there are no organized services providing nutritional support such as food supplements in Tanzania. Therefore, the main inputs that are associated with maternal and child nutrition are the foods that are prepared and eaten by the household on a daily basis. This section summarizes what is known about the level and type of nutrient inputs in Tanzanian households.

Food Consumption and Energy Intakes

Nutrient Intakes. Estimates of average calorie intake in Tanzania vary from 83 percent of requirements to over 100 percent (World Bank, 1984; FAO, 1984). Unfortunately, no national household survey has attempted to collect detailed data on individual food intake, so a precise estimate of average nutrient intake is simply not available. Average daily consumption of protein is estimated at around 42 grams, compared with the FAO recommended requirement of 50 grams (from vegetable sources). Approximately 62 percent of the protein intake is derived from cereals, 25 percent from meat, fish and dairy products, and 13 percent from pulses (World Bank, 1989). Oils and fats account for about 6 percent of calories in the Tanzanian diet, compared with the 15 percent recommended by WHO (although this recommended level is rarely achieved in developing countries). Not only are these mean values of nutrient intake imprecise and nationally *unrepresentative*, they also probably mask substantial inter- and intra-household variations in food and nutrient intake.

Diet Composition. The Tanzanian diet is dominated by maize, in the form of maize meal, which is cooked into a stiff porridge or “ugali” and served with a sauce or relish of vegetables, pulses, fish, or meat. The next largest source of calories is cassava, which provides roughly 40 percent of the total calories derived from maize. Cassava, millet and sorghum are also cooked in the same form as maize

meal. In some areas, such as Kilimanjaro, green bananas are the main staple, also cooked into a stiff porridge. Generally, maize, rice, and wheat are preferred over sorghum, millet, and cassava. However, rice and wheat are important only in the urban areas. The protein content of the porridge that is widely consumed in the country is around 11 to 13 percent for grains, but significantly lower for cassava and bananas.

The predominance of maize and cassava and the deficiency of oils and fats in the Tanzanian diet is of particular concern. This is especially true in the case of young children and pregnant and breastfeeding women, since the calorie density of the staple gruel and stiff porridge is low and these individuals may thus be unable to consume enough calories to meet their special energy needs. Additionally, since maize and cassava alone are deficient in several important nutrients such as iron, thiamine, Vitamin A, and fats (lipids), women and young children are especially susceptible to diseases associated with these deficiencies such as anemia and xerophthalmia (which can ultimately lead to blindness).

Micronutrient Intakes. Intakes of iron, iodine, and vitamin A are generally low throughout Tanzania. Iodine problems are mostly observed at high elevations where iodine-depleted soils prevail. Low iodine in the soil leads to poor iodine content in food and water, resulting in iodine deficiency disorders (IDD). This problem has been addressed by the Iodine Oil Capsule Supplementation Program, initiated in 1986. Spot evaluations undertaken after the program was implemented show that the IDD problem may have substantially declined after 1986. The country now plans on achieving universal salt iodation by 1997 as a permanent solution for the control of IDD.

The daily per capita intake of iron is very low, and much of it is in the non-absorbable form (non-heme iron). This is particularly problematic for pregnant women who need to absorb at least 6.3 mg/day in the last two trimesters of their pregnancies. The dietary deficiencies in iron, combined with malarial and hookworm infections, result in iron-deficiency anaemia, the most common form of anaemia in Tanzania.

Breastfeeding

Breastfeeding is almost universal in Tanzania, with about 98 percent of children under 5 being breastfed at least for a short period. Among last-born children, the percentage that were breastfed within one hour of birth varied from 40 percent in Dar es Salaam to 43 percent in rural Tanzania. On average, 44 percent of last-born children were breastfed within one hour of birth and 82 percent were breastfed within one day of birth (TDHS, 1991/92).

Since more than 50 percent of births in Tanzania take place at health facilities, hospital and institutional practices may be playing an important role in the promotion of breastfeeding. The fact that 56 percent of mothers wait for more than an hour, and 12 percent for more than a day after a baby is born to initiate breastfeeding suggests that there may be an incorrect perception that the first breast milk (colostrum) is an inferior food. In fact, colostrum is rich in antibodies and highly beneficial to the newborn infant.

As shown in Table 7.3, exclusive breastfeeding drops off sharply after the first month of life, and is rare after three months. In most cases, children are fed with a combination of breastmilk and supplements during their first year.

The mean duration of partial breastfeeding is 21.2 months, with rural mothers breastfeeding 1.6 months longer, on average, than mothers in Dar es Salaam. Mothers with no education or some (incomplete) primary education breastfeed approximately two months longer than mothers with secondary and higher education. The most common reasons for discontinuing breastfeeding tend to be both maternal perceptions about, and experience with, failure to produce milk, and the mother's return to work.

Supplementary Feeding of Infants

Although there is universal breastfeeding, infants are rarely exclusively breastfed in Tanzania. The TDHS indicates that only about 43 percent of newborns aged 0 to 1 months are exclusively breastfed. The proportion of those exclusively breastfed drops to 24 percent for infants aged 2 to 3 months, and to a mere 8 percent for those aged 4 to 5 months. These are unusually low levels of exclusive breastfeeding, even for a low-income developing country.

As shown in Table 7.4, women in Dar es Salaam and other urban areas tend to feed their babies a breastmilk-only or breastmilk-and-water-only diet for shorter periods of time than do women in rural areas. Correspondingly, women with at least a completed primary education exclusively breastfeed their children for only about 2 months, on average, while those with no education are likely to exclusively breastfeed for three months.

One reason why mothers discontinue exclusive breastfeeding so early may be their perception that they are producing insufficient quantities of milk, in part because of their poor nutrition and heavy workload. Nutrition of the mother at this important stage is a key element in keeping the infant protected from environmental hazards. Premature introduction of supplemental foods greatly increases the risk of infection in the small infant.

Table 7.3: Percent Distribution of Living Children by Breastfeeding Status, According to Child's Age in Months, 1991/92

Age in Months	Exclusively Breastfeeding	Breastfeeding and ...	
		Plain Water	Supplements
0-1	42.5	35.2	21.6
2-3	23.5	28.7	47.0
4-5	7.6	15.7	76.6
6-7	5.6	7.8	84.1
8-9	1.4	4.0	94.3
10-11	0.0	2.6	96.6
12-13	0.8	3.4	90.7
14-15	0.7	3.5	90.1

Source: TDHS, 1991/92.

Table 7.4: Duration of Breastfeeding by Residence and Mothers' Education

Characteristic	Median Duration of Full Breastfeeding
<i>Residence</i>	
Dar es Salaam	0.6
Other Urban	1.6
Rural	2.5
<i>Mother's Education</i>	
No Education	3.0
Primary Incomplete	2.3
Primary Complete	1.9
Secondary/Higher	1.9

Note: Full breastfeeding means either exclusive breastfeeding (breastmilk only), or breastfeeding in combination with plain water only

Source: TDHS, 1991/92.

Weaning diets are particularly inadequate in Tanzania. Supplementary feeding begins with a thin gruel (*uji*) of the local staple – maize, millet, potatoes, bananas, or cassava. A variety of vegetables or legumes is added as a relish depending on season and availability, but generally in very small quantities. From the age of 6 months or so, stiffer food (*ugali*) is given, and by the age of one year, children eat the same food as adults. The daily number of meals or snacks given to children is usually two or three.

In conclusion, breastfeeding in Tanzania is initiated late, solid supplements are introduced too early, and supplementary foods are low in energy and inappropriate. The reduced opportunities for suckling suppress breastmilk production, thereby promoting the cycle of inadequate infant-feeding. In addition, the early introduction of solids increases the risk of diarrheal infection in infants.

HOUSEHOLD EXPENDITURES ON FOOD

It is possible to analyze the share of the food budget devoted to various types of food, and to make comparisons across welfare groups, using the HRDS 1993/94. The results (shown in Table 7.5) are surprising. The shares of maize, other foodgrains (such as millet and sorghum), roots and tubers, and legumes and pulses in the total food budget decline with income. Rice is the only cereal that shows an increase in budget share with income. As would be expected, the shares of fruits and vegetables, meat, eggs, and dairy products, and other foods (including cooking oil) increase with income.

What is surprising from these results is the variety of foods that appear to be consumed by even the lowest expenditure group. In few low-income countries would one find the poorest 20 percent of households consuming nearly two-thirds of the value of consumption of a staple (maize) on a “luxury” commodity group like eggs, meat, and dairy products. The budget shares suggest one of two conclusions: (i) that the common assertions about the Tanzanian diet, especially among the poor, being monotonous and almost exclusively composed of maize or cassava are inaccurate; or (ii) that the prices per calorie of items like eggs, meat, and dairy products are so much higher than those of maize or cassava that the poor man’s diet in Tanzania is still heavily staple-oriented in terms of calorie composition.

We have used the expenditure data to estimate the elasticity, or sensitivity, of demand for various types of foods to changes in income. In other words, we examined how household food consumption patterns would be likely to change if the total household income were to increase. The income (or expenditure per adult-equivalent) elasticity of maize is observed to decline from 0.86 for the poorest 20 percent of households to merely 0.26 for the richest 20 percent. With an income elasticity of 3.5, rice appears to be a highly favored commodity among the poorest. The only commodity whose

Table 7.5: Share of Individual Food Groups in Total Food Expenditure, by Expenditure Quintile (%)

Food Group	Expenditure Quintile (% of total food expenditure)		
	Lowest 20%	Highest 20%	All
Maize	24.9	11.2	15.6
Rice	5.4	9.6	9.0
Other Foodgrains	6.9	3.5	4.2
Roots and Tubers	11.9	7.7	9.4
Legumes and Pulses	16.8	12.2	13.8
Vegetables and Fruits	10.9	16.7	14.6
Meat, Eggs and Dairy	15.8	27.1	23.0
Other Foods (including cooking oils)	7.4	12.0	10.3
All Foods	100	100	100

Source: HRDS, 1993/94.

income elasticity increases from poor to rich is “Other Foodgrains,” which includes sorghum, millet and wheat. It is likely that this reflects a strong “distaste” for sorghum and millet among the poor, combined with a strong preference for wheat consumption among high-income urban households. There is almost no consumption of wheat by poor rural households.

The pattern of estimated expenditure elasticities is intriguing because it suggests that increases in household income, even among the poorest households, would be accompanied by substantial changes in their food expenditure patterns. The food budget would be reallocated from maize, sorghum, and millet to rice, meat, eggs, dairy products, fruits, and vegetables. Since the latter foods are expensive and inefficient sources of calories, this provides additional indirect evidence that the poor in Tanzania already are (or perceive themselves to be) consuming adequate amounts of calories. Otherwise, it would be difficult to explain such a strong taste for food quality and variety among the poor.

NUTRITION-RELATED GOVERNMENT ACTIONS

The range of policies, programs, and conditions that can be thought of as affecting the “supply” of nutrition is vast, ranging from specific nutrition interventions, such as micronutrient supplementation, to broad agricultural pricing policies. A comprehensive review is beyond the scope of this report. In this chapter, therefore, we first attempt to highlight the supply-side factors that are the most important determinants of the prevalence of malnutrition in Tanzania, namely food production and caloric availability. We then provide an overview of the policies and programs that are directly targeted toward preventing malnutrition.

Food Production and Availability

Food Production. During the 1960s and early 1970s, per capita food production in Tanzania increased steadily. Tanzania was the only independent African country achieving a growth rate of food production that was greater than that of its population. However, beginning with the economic crises of the late 1970s, food production growth slowed down and failed to keep up with population growth. There are some indications that in the last few years, due to good rainfall and price incentives resulting from structural reforms in agriculture, food production has been growing faster than during the 1978-88 period.

Caloric Availability. Food balance sheets prepared by the FAO show that average daily availability of calories and protein per capita, which fell dramatically during the 1970s, has been increasing since the mid-1980s. At present, energy availability is estimated to be more than 2,250 calories per day. This amount is slightly higher than the recommended level of energy intake for a moderately active adult in Tanzania. Therefore, undernutrition in Tanzania is not a problem of inadequate food production, but instead one of distribution and demand. A poor procurement, storage, and transportation system continues to hinder the efficient distribution of food grains from the food-surplus to the food-deficit areas within the country. Indeed, talk of encouraging regional food self-sufficiency and security in the past may have prevented the development of storage, transportation, and distribution systems. In addition, sharp increases in the prices of staples in the face of stagnant incomes may have adversely affected the demand for food, and consequently nutritional outcomes, among the poor.

Nutrition Policy

Several policy initiatives have affected the nutrition sector since the early 1980s, including the Agricultural Policy, the National Food Strategy, and various versions of the National Health Policy. Most recent is the 1992 Food and Nutrition Policy, an elaborate statement that seeks to improve coordination among the many actors in the nutrition sector. The policy, which was strongly influenced by the conceptual underpinnings and experiences of the JNSP, placed its emphasis on the importance of government action in the nutrition sector, and sought to clarify the roles of each of the line ministries that influence nutrition.

As the leading ministry in the nutrition sector, the MOH is charged with developing and supervising the implementation of the nutrition policy through the Tanzania Food and Nutrition Center (TFNC). The TFNC, a semi-autonomous institution established in 1973², is responsible for planning, initiating, and evaluating food and nutrition programs, carrying out and disseminating nutrition research, promoting good nutrition, and providing technical input to government on all nutrition-related matters. While the government supports the center's recurrent budget, most of TFNC's funding comes from donor agencies. SIDA and UNICEF have provided the largest shares of support in recent years, and an IDA credit has been provided for several micronutrient activities.

The nutrition policy assigned to all other ministries in the social sectors, and nearly all ministries in the economic and productive sectors, responsibilities for ensuring adequate food production, and mobilizing government and other nutrition-related actions.

Current Nutrition Interventions

Micronutrient Supplementation. The major micronutrient deficiency problems are being addressed through separate national efforts.

- Tanzania aims to achieve universal salt iodation as a permanent solution for the control of iodine deficiency disorder. Three salt iodation plants were installed in Bagamoyo, Dar es Salaam, and Uvinza (Kigoma) in 1990, and additional iodation plants are currently in the design phase. At the present time, approximately one-half of the salt consumed is iodized. Most of the funding for the IDD control effort comes from SIDA, UNICEF, the Government of the Netherlands, and WHO.
- A national control program for nutritional anemia has been put into place. The short-term strategy for control is to increase the distribution of iron and folate supplementation to women during pregnancy and early lactation through the Ministry of Health's Maternal and Child Health Services. The long-term strategy is to promote the production and consumption of vitamin-rich horticultural products. General public health measures to control malaria and other parasitic diseases are also essential to the control of anemia, and are to be carried out by the Ministry of Health. Funding for the national program comes from the World Bank, UNICEF, WHO, DANIDA, SIDA, and other organizations.

² TFNC was originally established under the Ministry of Agriculture, and then moved to the Prime Minister's Office.

- The national program for the control of vitamin A deficiency (VAD) consists of targeted supplementation of vitamin A capsules through the Essential Drugs Program, and promotion of foods containing vitamin A, including red palm oil and dark green leafy vegetables. Agencies supporting this program include the World Bank, UNICEF, WHO, FAO, DANIDA, SIDA, the Netherlands, and others.

The Child Survival, Protection, and Development (CSPD) Program. The most significant child nutrition activity in Tanzania has been the CSPD Program, a community-based program that was started in 1983 as the Joint Nutrition Support Program (JNSP) with funds and other assistance from UNICEF and WHO. The program, which started as a pilot activity in the Iringa region, has been widely viewed as successful in reducing child malnutrition and infant mortality levels, and has expanded to villages in 39 districts (12 regions) on the mainland and all of Zanzibar, with co-financing from other donor agencies.

The complement of interventions in the CSPD ranges from major civil works (piped water, the construction or rehabilitation of health and water facilities, and so forth), to support for supplies and logistics, training of village health workers, day-care workers, and others, and the promotion of income-generating activities. Two essential components of the program are community sensitization and mobilization for community-based growth monitoring (see Box 7.1).

A cost analysis of the Iringa JNSP concluded that the total cost of the project (in 1987 dollars) was US\$17 to US\$20 per child per year. Of the US\$3.12 million expended, personnel represented about 39 percent of the total, with most of the personnel funds going for international technical support for program management. Putting aside the international management and local transportation costs for supervision, and taking into consideration the economies of scale achieved through expansion of the program, analyses of CSPD program costs concluded that US\$2 to US\$3 per child per year would support a cluster of activities to reduce child malnutrition. About one-quarter of that sum is for training, advocacy and information, and the remainder is for equipment, supplies, drugs, and local transportation.

The impact of the original JNSP in Iringa has been widely publicized. A 1988 evaluation found a significant decrease in severe malnutrition (from 6.3 to 1.8 percent) and a reduction in the prevalence of underweight children (from 60 to 38 percent) over the 5-year effort. The major improvements occurred during the first three years of the program, and were then maintained. As

Box 7.1: Child Support, Protection, and Development (CSPD): Structure and Implementation

The CSPD program emphasizes the local generation and use of information about the situation of women and children. The program uses children's nutrition status as an entry point for a multi-sector community-based program of interventions.

Structure of the Program. The overall policy and strategic planning for the program rests with the Regional Steering Committee composed of representatives from the line ministries. At the district level, the Chief Administrator designates a coordinator (usually the Planning Officer or the Community Development Officer). Implementation committees are formed and are often given the opportunity to visit districts that have greater experience in implementing the CSPD. Efforts are made to have strong representation from women at the committee and other levels.

Implementation. Male and female village health workers are selected following Ministry of Health guidelines. District and ward staff then promote the CSPD activities (such as growth monitoring) through social mobilization and discussion about whether a selected village wishes to participate in the program. If the response is positive, a health committee is elected. The local program is inaugurated by the showing of a film and a campaign day, during which all children are weighed and, if necessary, immunized. Other activities may be added over time, if the community chooses. These include feeding posts, informal day care for children of mothers working in the fields, vegetable gardens, introduction of grain mills, and so forth.

Kavishe (1993, p.152) stated, "The reductions in the malnutrition rates were attributed to the program, as marked differentials in the rates of severe underweight existed between the original 168 project villages as compared to 442 villages in the Iringa non-JNSP areas." While no comprehensive impact evaluation has been carried out for the larger CSPD program, the area reports indicate that comparable reductions in total and severe underweight has occurred between the initiation of the CSPD and the present.

CONCLUSION

The major conclusion that can be drawn from the above analysis is that Tanzania does not compare badly to many other countries in terms of the nutritional status of children. That said, however, it is clear that there are substantial human costs associated with the malnutrition that does exist. Targeted interventions, including several of those already underway, appear to be the most promising means of addressing the current nutrition problems among children and reproductive-age women.

8

WATER AND SANITATION

Starting in the late 1960s, the Government of Tanzania and many donors began a large, sustained effort to deliver safe, improved water supplies, and in some cases improved sanitation services, to the rural population of Tanzania. They accepted the proposition that the rural population was too poor to pay for the costs of improving their water supply, and that water should be provided free of charge. A variety of donor-financed master plans were drawn up for many regions of the country, and donors and the government attempted to provide free water for all.

To many sector professionals in both the government and the donor community, it is now clear that this supply-side master plan for the delivery of water services was a mistake. Thousands of schemes were built that are now no longer operating. There are many reasons for the high rate of project failure. One is that the government simply cannot afford the recurrent costs of past investments. Other explanations include a lack of participation of beneficiaries in project planning, a shortage of trained personnel, poor operation and maintenance, and inappropriate choice of technology.

UTILIZATION OF IMPROVED WATER SOURCES AND SANITATION FACILITIES

Household Water Supply

Only about 11 percent of households in Tanzania have a private water connection inside their home or yard (see Table 8.1). Even these households must sometimes collect water from other sources due to the unreliability of the municipal water supply system in most towns. One-half of the households of Dar es Salaam now have a private water connection in their dwelling or yard, but the other half collect water from outside their home (from a neighbor, public standpost, handpump, open well, or surface water source). About 3 percent of households purchase water at high prices from

Table 8.1: Primary Household Water Sources, by Residence (Percent)

<i>Type of Water Source</i>	<i>Dar es Salaam</i>	<i>Other Urban</i>	<i>Rural</i>	<i>All</i>
Private Connection (inside or outside dwelling unit)	50.0	28.6	1.8	11.3
Distributing Water Vendor	2.7	0.36	0.0	0.3
Tanker Truck Vendor	0.1	0.14	0.0	0.0
Neighbor	32.9	17.3	1.2	7.1
Public Standpost	8.7	26.1	19.7	20.6
Handpump	0.7	9.6	8.8	8.6
Open Well	3.9	10.6	27.8	22.2
Surface Water Source (river, stream, lake, pond)	0.4	7.2	41.0	29.9
Other	0.4	0.1	–	0.1
Total	100	100	100	100

Source: HRDS, 1993/94.

water vendors or tanker trucks that deliver water directly to their homes.

In other urban areas in Tanzania, private connections are far less common. Only about 29 percent of households have a private water connection in their home, and 17 percent obtain water from neighbors. The majority of households in these towns collect water from public taps and public wells. A small percentage rely on vendors or traditional surface water sources as their primary water source.

In the rural areas of Tanzania very few households have private water connections in their home or yard (only about 2 percent). The vast majority of households collect water from sources outside the home (98 percent). About 41 percent of rural households still rely on traditional surface water sources, such as rivers, springs, ponds, or lakes. About 28 percent of rural households obtain water from traditional open wells, almost all of which are located outside the home. Approximately 20 percent of rural households collect water from public standposts, and 9 percent from wells with handpumps. Both of these sources are often considerable distances from people’s homes, and their use involves significant collection time, chiefly for the women and female children in the households. Many public tap systems and handpumps have proved to be unreliable, and, when they break down, households revert to using traditional sources.

Table 8.2 shows the percentages of households in different expenditure groups that obtain their water from different sources. As expected, households with higher expenditures are much more likely to have a private connection. The highest quintile has almost two-thirds of the private connections in Tanzania, and buys more than one-half the water sold by tanker trucks and water vendors¹. Similar data just for rural areas show that unimproved surface water sources are used by households in all income groups because households in many rural areas have no improved sources available. Very few households in rural areas purchase water from vendors, and all that do are high-income households. When improved water sources such as public standposts and handpumps are available in rural areas, they are used by all income groups.

Table 8.2: Household Water Sources, by Expenditure Quintile (%)

Water Source	Lowest 20%	Highest 20%	All
Private Connection	1.3	29.5	11.3
Neighbor	2.7	12.9	7.1
Public Tap	21.6	16.8	20.6
Handpump	11.7	7.8	8.6
Open Well	25.6	12.9	22.2
River, Spring, Lake	37.0	19.6	29.9
Water Vendor	0.0	1.1	0.3
Tanker Truck	0.0	0.1	0.0
Total	100	100	100

Source: HRDS, 1993/94.

Access versus use. Water policy discussions in Tanzania have often focused on the question of how many people have access to (or are “covered” by) an improved, safe water supply². At the time of

¹ This use of water vendors by high-income groups in Tanzania is different than in many parts of the world. In other countries it is typically the poor that must rely on vendors for their water, while urban households with middle and high incomes obtain water from their own private connections (often at subsidized rates).

² Estimates of coverage can be misleading in several important respects. First, they do not distinguish between the benefits to households of different levels of improved service (e.g., public taps or handpumps versus private connections). Second, they typically assume that, when improved water systems are installed, they continue to operate and that the intended beneficiaries of the project use the improved water source. Third, they are not based on measures of the quality of water households actually consume. Even the 2

Tanzanian independence, it was estimated that about 1.4 million people, or 12 percent of the rural population of Tanzania, had access to a clean water supply. A 1980 review of the results of rural water supply investments suggested that rural water coverage increased from 1.4 million to 7.4 million people during the 1970s (Mutalemwa, 1994). Government estimates put the portion of the rural population in Tanzania that now has access to an improved, safe water source at about 9.4 million or 46 percent of the total rural population (Mutalemwa, 1994).

The data from the HRDS indicate, however, that rural water coverage is probably less than one-third, or a total of about 6.0 million, of the rural population³. This *overestimates* coverage if one uses the government definition of coverage that households must be within 400 meters of an improved source, since this estimate assumes a household is covered if it uses an improved supply (private connection, handpump, public tap, or neighbor). These data suggest that the net result of the last three decades of investments and effort in the water sector has been to increase the percentage of the rural population covered from about 12 percent to 32 percent or, in terms of the absolute number of people served, from about 1.4 million to about 6.5 million. The capital costs of serving these additional 5 million people are difficult to estimate, but amount to at least several hundred million US dollars.

If the 1980 coverage estimates were correct and the HRDS results are accurate, then rural water coverage has actually declined since 1980 by about 1 million people. Apart from population growth, much of this problem is undoubtedly due to the large number of rural water schemes that were built but are now inoperative. Government figures indicate that of the 10,961 rural water supply schemes that existed in 1992, 30 percent were not operating at all (Mutalemwa, 1994)⁴. The reliability of the systems that were in "operation" varied widely.

In the urban areas, the percentage of the population now using an improved water source is much higher. The results of the HRDS indicate that in Dar es Salaam, 95 percent of the population now uses improved water sources. In other urban areas the comparable figure is 82 percent⁵. However, municipal water supply facilities are inadequate to provide the quantities demanded at the very low prices currently charged for water. Government estimates of the quantity of water that would be demanded in urban areas at current prices exceed the quantity supplied by 85 percent, and exceed installed capacity by 39 percent.

Sanitation

Throughout the world, households and communities go through three stages in their efforts to

percent of the population with piped water at their residence are at some risk of waterborne diseases because many piped systems are unreliable and subject to infiltration. The population using public taps and handpumps, or obtaining water from neighbors, should have high quality water and substantially reduced risk of waterborne diseases, but water contamination can still occur during transport and storage.

³ This figure is based on the percentage of rural households that have private connections, obtain water from neighbors, purchase from vendors, and collect water from public standposts or handpumps.

⁴ Shinyanga, Tabora, Singida, Mtwara, Dar es Salaam, and Dodoma regions have disproportionately high rates of inoperative projects.

⁵ It is not possible to determine from the HRDS 1993/94 data the actual type of water system used to supply private connections and public standposts (e.g. gravity flow, diesel pump scheme) or the source of water (e.g. surface storage or groundwater).

obtain sanitary conditions: (1) safe, hygienic removal of human wastes from their immediate dwelling; (2) neighborhood collection of household wastewater and excreta, and (3) improved quality of surface water. The first stage involves the removal of excreta and waste water from the household's living space. This is typically a private responsibility of the household. Common technological solutions to this problem are traditional pit latrines and pour-flush toilets. Costs are generally paid by the household, and vary from minimal to US\$5 per month. The principal benefits of such investments primarily accrue to the individual household in terms of convenience, amenities, and improved health.

However, in the course of solving their own individual sanitation problems, households often impose costs on their neighbors by discharging untreated human wastes and waste water from their property into streets or other public property. This is particularly true in urban areas and creates the setting for the second stage. A common technological solution here is for households with water-sealed toilets to discharge their waste water into underground sewer lines that remove the wastes from the neighborhood. Alternatively, desludging trucks may be used to empty pit latrines or septic tanks.

Removing the waste water from households improves neighborhood sanitary conditions and may improve public health conditions for everyone in the neighborhood. However, the quality of the surface water receiving the wastes will likely deteriorate. In some situations where a community discharges its waste water into a river, it may be the downstream communities that suffer the consequences of reduced water quality. In other cases, the costs of poor surface water quality may be borne by the residents of the city themselves. Costs for constructing a sewer distribution network and connecting individual households to the system vary depending on the terrain, urban spatial structure, and local costs of labor and materials, but are typically on the order of US\$10-20 per month.

The third stage is to improve the quality of surface water. One of the first and most important steps toward meeting this objective is to treat the waste water collected by the sewer lines using primary and secondary treatment technologies. The benefits accrue to the broader community beyond the neighborhood, and government is typically involved in investment planning, financing, and perhaps operation and maintenance. Costs for primary and secondary treatment are approximately 50-100 percent of the costs of the sewer lines, or an additional US\$10 per month.

Sanitation Facilities Currently Used. Given the very low per capita incomes in Tanzania, it should not be surprising that the majority of households in Tanzania have not completed even the first stage of this transition. In fact, as shown in Table 8.3, some Tanzanian households have not even started on the path to improved sanitation. Approximately 5 percent of the population have no sanitation facility at all. The most prevalent form of household sanitation in both urban and rural areas is a traditional pit latrine. Data from the HRDS show that between 90 and 95 percent of households in urban and rural areas use traditional pit latrines.

Table 8.3: Type of Sanitation Facility, by Residence (%)

<i>Sanitation Facility</i>	<i>Dar es Salaam</i>	<i>Other Urban</i>	<i>Rural</i>	<i>All</i>
Own or Shared Flush Toilet	8.1	4.9	1.1	2.5
Traditional or Improved Pit Latrine	90.2	92.4	92.3	92.2
No Facility, Bush/Pan, or Bucket	1.7	2.7	6.6	5.3
Total	100	100	100	100

Source: HRDS, 1993/94.

What these statistics do not show is the great variation in the quality of traditional pit latrine

construction in Tanzania. There is a long tradition of pit latrine construction in Dar es Salaam and other areas of Tanzania dating back more than a hundred years, and many skilled artisans are constructing traditional pit latrines with large brick-lined pits, concrete slabs, and substantial superstructures. Such "traditional pit latrines" can provide reasonably good service, effectively removing most of the excreta from the household's living space. They can last for many years and cost a few hundred US dollars. At the other extreme, many pit latrines are simply small hand-dug pits covered by temporary wood planks or other materials, surrounded by brush or scrap metal, often without a roof.⁶

Over the last couple of decades several donor-funded projects have promoted the "Ventilated Pit Latrine" (also known by the brand name "VIP") in Tanzania as an alternative to the traditional pit latrine. This technology, which offers a safe, hygienic method of excreta disposal, is now used by about 1 percent of Tanzanian households. Households with VIP latrines have usually received them from donors at heavily subsidized prices. Although less expensive than some high-quality traditional pit latrines, VIP latrines typically cost on the order of US\$200-300 (excluding labor) and are far too expensive for most Tanzanian households.⁷

In Dar es Salaam and other urban areas about 3 percent of the population have either a flush toilet for their own use or a flush toilet that is shared with other households. Eight towns on mainland Tanzania have small, limited sewerage systems. In these towns, some of the few households with flush toilets have connected to the sewer system, while others empty into septic tanks and drainage fields. Neither of the two surveys reveals the exact proportion of the flush toilets connected to sewer lines.

HOUSEHOLD EXPENDITURES ON WATER

Only a small percentage of Tanzanian households actually pay any significant amount of money for their drinking water. On average, households with private connections and those buying from neighbors spent about the same amount annually, slightly more than Tsh 8,000 per year in 1994/95 (see Table 8.4). A typical household in the richest 20 percent of the welfare distribution spends about twice as much as a typical household in the poorest 20 percent.

Very few households in Tanzania use vendors as their main source of drinking water, but those that do spend a lot of money for water. The average household purchasing water from vendors spends almost 10 times as much for water as a household with a private connection or a household purchasing from neighbors. Virtually no households

Table 8.4: Annual Household Expenditures for Water, by Expenditure Quintile (Tsh)

<i>Type of Connection</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>Average</i>
Private Connection	5,083	10,018	8,446
Neighbor	4,685	9,368	8,252
Distributing Vendor	n/a	89,596	89,838

Source: HRDS, 1993/94, inflated to 1995 Tsh.

⁶ The minimum standards set by the MOH calls for the provision of both a superstructure and a roof.

⁷ In fact, many VIP latrines have been purchased by households that already use flush toilets. For them a VIP latrine serves as a back-up supplemental sanitation system in case the sewer line clogs or the flush toilet breaks down.

in the lower 40 percent of the welfare distribution choose to buy water from vendors.

The majority of Tanzanian households do not incur any monetary costs to obtain their domestic water supply. They pay instead with their labor. One of the implications of the current water supply situation is that

the majority of Tanzanian households, predominantly women and children, commit a significant share of their human capital resources to the daily task of obtaining small amounts of water for domestic use. Table 8.5 presents estimates of the percentage of households collecting water from outside their dwelling, the average one-way distance from their home to the water source, and the average time spent collecting water per day.

It is in the rural areas, of course, where the burden of water collection is most severe. In rural areas of Tanzania the average household is 1.6 kilometers (one-way) away from its primary water source. Many households are located much farther from their water sources. Women and children from a typical household would make several round trips from their dwelling to the water source every day. An average rural household spends about 3 hours a day collecting water, or more than 1,000 hours per year. The market wage rate for unskilled labor varies significantly in rural Tanzania, from a low of about Tsh 335 per day to Tsh 670 per day in 1994/95. If the time spent collecting water were valued at Tsh 34 (US\$0.06) per hour in 1994/95, it would have an annual value of Tsh 38,190 (US\$66) per year. This is on the order of 6 percent of the rural household's imputed annual income and about 8 percent of annual cash income.

Interestingly, the collection times for households using public taps and handpumps (improved sources) and households using traditional sources (open wells and unimproved surface water sources) do not appear to be as different as one might expect. For example, the self-reported daily collection times for households using handpumps (3.0 hours per day) are about the same as the collection times for households using open wells (3.3 hours per day) or traditional surface water sources (3.2 hours per day). These data should be interpreted carefully, since households using public taps and handpumps are, on average, closer to their water source than households using traditional sources.

It might at first appear that the large public investments in rural water schemes based on public taps and handpumps had no effect on collection times in rural areas. Such an inference would be incorrect, since the household data refer only to a period of time following significant water-supply investments. We have no information on collection times for households before the improved water systems were installed, and we cannot assume that they would be equal to the collection times of

Table 8.5: Share of Households Collecting Water Outside the Home and Estimates of the Time Spent Collecting Water

	<i>Dar es Salaam</i>	<i>Other Urban</i>	<i>Rural</i>	<i>All</i>
Share of Households Collecting Water from Outside the Home (%)	47.0	71.0	98.3	88.4
Average (one-way) Distance from Home to Water Source (kilometers)	0.25	1.10	1.6	1.5
Estimated Time Spent Daily Collecting Water (hours per day)	1.5	2.5	3.1	2.9
Annual Value of Time Spent Collecting Water (valued at US \$0.06 per hour)	US \$31	US\$54	US\$66	US\$62
Annual Value of Time Spent Collecting Water as Share of Average Annual Household Income (%)	1	4	6	

Source: HRDS, 1993/94, inflated to 1994/95 levels.

households using traditional sources today⁸. Still, these results do raise an important, unanswered question, namely, have investments in rural water schemes significantly reduced water collection times in rural Tanzania? The data raise legitimate doubts as to whether the impact has been large.

Even in urban areas the amount of time spent collecting water is large. In Dar es Salaam members of a household collecting water from outside the home spend about 1.5 hours a day collecting water (about one-half as much as households in rural areas collecting water from open wells). Over a year, such a household spends over 500 hours collecting water. If this labor were valued at Tsh 34 per hour in 1994/95, the time spent collecting water would have an imputed value of only about Tsh 17,000 per year, or about 1 percent of household income. In other urban areas, more than 70 percent of households collect water from outside the home and the average distance from home to the water source is greater. These households probably spend on average about 2.5 hours per day collecting water. The annual value of time spent collecting water was about Tsh 31,490 (US\$55) per household, or about 4 percent of imputed income in 1994/95.

In aggregate, households in Tanzania are spending almost 4 billion hours per year collecting water from outside the home. The current water supply arrangements thus require a large commitment of Tanzania's female labor force to extremely low-value work. Actually, this is somewhat of an underestimate because many households with private connections or buying from vendors must sometimes collect water from outside their home. Even in urban areas, it is estimated that about 750 million hours per year are spent collecting water. If the total time spent annually in Tanzania were valued at Tsh 34 per hour, it would be equal to about Tsh 136 billion (US\$237 million), roughly 10 times the combined annual government and donor investment in the water and sanitation sector in 1994/95.

The current daily wages in rural Tanzania (US\$0.50-\$1.00) are very low by international standards. However, when agricultural wages are US\$3-4 per day and water collection times are high, water vending often becomes quite common. These calculations suggest that if real incomes rise in Tanzania and the value of women's time were to increase to, say, US\$2.50 per day, there would likely be a huge increase in effective demand for improved water services. Underpinning such cost-effectiveness analysis is the recognition of the health burden incurred by women and children from the weight-bearing activities required for transport of water.

DEMAND FOR IMPROVED WATER SOURCES AND SANITATION FACILITIES

Willingness to Pay for Improved Water Supplies

As is true in many developing countries, information about household demand for improved water services in Tanzania is quite limited. One study of household demand for improved water supplies has been carried out in Newala district in the Mtwara Region. The results indicated that households were willing to pay as much as 10 percent of their cash income for an improved water supply, but that the potential revenues would not be sufficient to pay for operation and maintenance costs of the system, much less capital costs (see Box 8.1). However, the region in which this study was conducted is one of the poorest in Tanzania, with one of the most difficult water supply situations, and is not typical of much

⁸ Such an assumption would, for example, be unfounded if rural water investments were mostly made in places with the highest water collection times. However, donors have been working in the rural water sector throughout Tanzania, not just in the driest regions. Many donors gave priority within "their" region to villages with high collection times, but other criteria were also used.

of rural Tanzania.

Information from the HRDS offers an important insight into the likely magnitude of household willingness to pay for improved services. The survey shows low levels of water vending in both urban and rural areas, and the percentage of households reporting that they sometimes bought water from distributing vendors. In urban areas, over 10 percent of households report buying water occasionally, and in rural areas, only about 3 percent of households ever buy water.

Households whose primary source is vended water typically paid Tsh 3,350 to 6,700 per month for it in 1994/95. In numerous locations, some households paid as much as Tsh 13,400 per month for

Box 8.1: Households' Willingness to Pay for Water

In 1988 a research team from the Institute of Resource Assessment at the University of Dar es Salaam and the University of North Carolina at Chapel Hill conducted a study to determine how much households in one of the poorest areas of southern Tanzania were willing to pay for improved water service from a system of public taps. The study area was served by the Kitangari Water Scheme (also known as the Makonde Water Scheme), a project financed by FINNIDA, UNICEF, ODA, and the Government of Tanzania. When it was operating at capacity, the Kitangari Scheme served 106 villages and about 162,000 people living on the Makonde Plateau. Water for the scheme is obtained from six boreholes in the Kitangari Valley. Diesel fuel is trucked 150 miles over unpaved roads to a pumping station and water treatment plant where it is used to generate electricity to pump water from the valley up to the villages on the Makonde Plateau. The Ministry of Water was responsible for providing the diesel fuel, and when funds from the central treasury were not available, diesel could not be purchased, and the scheme did not operate. When the scheme was not functioning, households walked long distances to poor quality, traditional sources (typically 10 to 15 kilometers away) to obtain water.

The research team conducted 829 interviews in six villages in order to determine: (1) how much households served by the water scheme were willing to pay to keep the system running, and (2) what type of payment mechanism they would prefer. The survey results showed that households in the study area were willing to contribute what, for them, were substantial amounts of cash toward the operation and maintenance of the Kitangari scheme (about 10 percent of cash income). If a system of kiosks were established, and the price were set at Tsh 0.50 per 20-liter bucket (in 1988 US\$1 = Tsh 98), 89 percent of the respondents said that they would purchase at least some water from the kiosk. If a flat fee of Tsh 25 per household per month were charged for the right to collect water from the public taps, 79 percent of the households stated that they would pay it.

Based on these estimates, the maximum potential revenues from the water system would only be about one-third of the operating and maintenance costs of the Kitangari scheme, without even accounting for the full costs including capital. The costs of operating and maintaining this water scheme were not particularly high by international standards (on the order of US\$1.30 per month per household). The problem was simply that the population served was extremely poor. Almost every household was engaged in subsistence agriculture, and although annual cash household income was difficult to estimate, it was probably about US\$50.

The full annual cost of the water scheme (including capital) was probably about US\$2.50 per month, per household, or US\$30 per year. With annual cash incomes of only US\$50, paying US\$30 per year for water was clearly unrealistic. However, an improved water system offered households in the study area an important development option: whether to spend approximately 6 months of a woman's time per year collecting water or to spend US\$30 for water and apply these six months of labor to other activities that might pay for the costs of the improved water supply, and much more.

If economic development is to occur in this area of Tanzania, a water system that yields a return of six months of a woman's time for US\$30 must become a fabulously attractive investment opportunity. From the perspective of an individual household, there are, however, three potentially important obstacles. First, the household may not have access to the credit to pay the initial US\$30 to pay for water to get the process started. Second, some households may not perceive clearly the opportunities for using some of the six months of a woman's time savings to generate cash to pay for the water system—or such opportunities may not exist due, for example, to government policies in other sectors. Third, some level of government or institution must offer households the opportunity to make such a choice. In 1994 the Ministry of Water, Energy, and Minerals was actively exploring institutional options for transferring ownership of the Kitangari Water Scheme to a private company so that households could actually make this choice.

vended water. Such payments provide compelling evidence that these households are willing and able to pay for the time savings and convenience obtained by having water delivered to their dwelling. Because the cost per cubic meter of providing households with water through private connections is much cheaper than service by water vendors, if extensive water vending exists, one can be fairly certain that households are willing to pay for the potentially superior service offered by a reliable piped water supply system. The fact that water vending appears to be so rare in most parts of rural Tanzania suggests that the vast majority of households without private connections in rural areas are not yet willing to make monetary payments of this magnitude for improved water services.

Such evidence on the absence of water vending must be interpreted carefully. The price of vended water sets an upper bound on potential household willingness to pay. We do not, however, know how much they would be willing to pay for a private connection or other levels of improved service. As noted, in urban areas many households are already paying US\$1 per month for water from neighbors, and in numerous cities, a substantial minority of households are buying some water from vendors.

High water-collection times are another indicator of high household demand for improved services. The collection times in most parts of rural Tanzania are high by world standards. For many households, when employment opportunities are available in either the formal or informal sectors, the opportunity cost of time spent collecting water may approach the market wage for unskilled labor. Such opportunities for turning time savings into market wages typically translate into high willingness to pay for improved water services. The absence of extensive water vending in rural Tanzania suggests, however, that households' ability to convert time savings resulting from improved water services into financially productive activities is probably quite limited.

Household Demand for Improved Sanitation Services

At current income levels in Tanzania, demand for improved household sanitation is low and will remain so for some time. In a survey carried out in Kurasini, Dar es Salaam, respondents were asked whether they would like a loan to improve their latrines. Not surprisingly, many people asked that the money be made available to improve their houses instead (Mutalemwa, 1994). The rehabilitation or construction of sewerage systems would entail high costs and require large subsidies, the benefits of which would go largely to upper-income groups.

POLICY FRAMEWORK FOR THE SUPPLY OF WATER AND SANITATION SERVICES

Historical Background. In the 1950s, Tanzanian households obtained water at no charge from natural sources (surface water) or purchased it at kiosks, the charges for which were based on volume. The colonial government organized several water cooperatives with pumped and piped schemes in semi-arid regions, in which members paid a flat membership fee and an additional price for each container of water consumed. The best known of these cooperatives, the Makonde Water Development Corporation, sustained itself through these revenues (Mashauri and Katko, 1993).

A policy of "free" water was put into place at the time of Independence and became a hallmark of the ruling party's efforts to provide free social services in rural areas. Starting in 1965, the government was financing all water supply investments, and in 1970 it began to finance the costs of operation and maintenance as well. By 1970, rural water supply systems provided water at no charge to users. Urban water users, on the other hand, could pay vendors for water, or obtain water at no charge

from public standposts (Mashauri and Katko, 1993).

It rapidly became apparent that the government would be unable to support the financial burden of constructing, operating, and maintaining the vast water systems required in the rural areas. As early as 1971, the advantages and disadvantages of the free water policy were being debated actively, and technical experts generally agreed that a sustainable policy would have to include some self-financing of water systems (Mashauri and Katko, 1993). However, the government of Tanzania remained committed to the policy and the promise of free water, and sought to obtain other sources of financing for the expansion of safe water supplies. In 1971, the government reinforced its policy of expanding availability of clean water with the launch of an ambitious 20-year water-supply program. The program had the objective of providing the entire rural population with clean, dependable water supplies within a reasonable distance (about 400 meters) from households. The program was followed in 1975 by a water-supply "crash" program intended to supply free, clean water for all by 1981.

From the early 1970s to the mid-1980s, water supply systems expanded rapidly, largely through the development of Regional Water Master Plans (RWMPs). The RWMPs were medium- to long-term sector plans for each region, typically projecting water system construction and the "optimal" domestic and agricultural use of all water resources over a 20-year time horizon. The RWMPs, which included "firm guidelines" for the supply of water, laid out the mix of pump and other technologies to be used (Therkildsen, 1988).

Foreign donors financed the implementation of the RWMPs in 12 regions, at an annual cost of US\$0.5 to 1 million. According to Therkildsen (1988), donors provided about 60 percent of the total capital expenditure for rural water sector development from 1973 to 1988. Most of the plans were implemented by foreign firms, often with little involvement of the Regional Water Engineers who were to operate and maintain the systems, or of the communities which were to be served.

As the water sector developed, similar centrally-planned activities were initiated to expand access to sanitary facilities. In 1973, the government introduced the "latrinization" campaign under a program called "Mtu ni Afya." This campaign, which sought to ensure each household a latrine, was given additional impetus after a cholera outbreak in 1977.

While the latrinization campaign appeared to be relatively successful, with latrine coverage in rural areas increasing from 20 to 50 percent between 1973 and 1980, implementation of the RWMPs faltered. Over time, water delivery systems required regular maintenance, spare parts, and operational support. District and regional governments were unable to provide them. Within several years, a large share of the pumps, wells, and other schemes that had been installed were non-operational. In some regions, up to two-thirds of the schemes went out of service. Some systems were started and never completed, leaving communities with partially constructed wells and pumping systems, and no access to safe water.⁹

By the late 1980s (a few years before the end of the 20-year water-supply program), the government, donors, and the rural population itself had become disillusioned with the promise of safe

⁹ Various sources of data provide conflicting estimates of latrine coverage. The estimate of 50 percent coverage in rural areas by 1980 is on the high side.

water supplies. Instead of launching new water projects, much of the effort in the water sector turned to trying to understand what had gone wrong.

“The reality ... has been a high level of project failure, and very little impact. The majority of supplies installed are not in use, either because they do not work or they do not meet the real needs of the population. There are many factors involved in the poor success rate in the water sector. The economic crisis has reduced interest in the social sectors at planning levels, and increased difficulties in procuring fuel and spare parts. Other important factors include inappropriate technology choice; the neglect of operation and maintenance aspects; failure to include health education and sanitation improvements; the tendency to plan from above on a large scale with little or no consideration given to local social conditions; the dependency relationship caused by the nature and extent of donor involvement; and the almost complete lack of community involvement, in particular that of women, who are the managers of traditional water sources, and the collectors and users of water in the homes. A major overall problem has been that improvements to water supplies have been treated as purely technical problems, rather than as a process of social change necessarily requiring the full participation of the communities involved.” (Andersson, 1989, p. 29)

It is crucial to add to this litany the problem of financing, and the market-distorting signals sent to the consumer by the policy of free water. Not only were members of the community generally excluded from participation in the design and construction of the water systems, except as hired labor or somewhat coerced “volunteers,” but they were also asked to contribute little or nothing in cash or in kind to the operation and maintenance of the system. The effect of this policy was to perpetuate a lack of a sense of ownership on the part of system users, a lack of recurrent-cost financing to maintain the operation of the systems, and a continued dependence on external funds for implementation of new schemes.

Current Policy. In 1989, a comprehensive policy document was prepared to guide the water sector. That National Water Policy remains the central policy statement in the sector. The policy, passed by Parliament in 1991, is a very detailed document covering nearly all issues related to the water sector. These include water source protection, flood control and prevention, effective utilization of available water resources, formulation and implementation of water projects, rehabilitation, integration of water, sewage and sanitation projects, cost recovery and cost sharing, water pollution and environmental control, operation and maintenance issues, private sector participation, human resources development, and the creation of an urban water agency.

The policy sets out key elements in the sector, and reflects some of the lessons that were learned from past mistakes. For example, the document highlights the need for community participation in construction, plus cash and in-kind contributions toward operation and maintenance. It seeks to encourage the adoption of low-cost technologies to enhance water coverage.

The policy has been criticized for weaknesses in four main areas. First, there is little attention to the difficult issues of coordination among the many ministries and agencies that often have overlapping roles and responsibilities in the sector (see Box 8.2). Many projects are initiated by one agency and then turned over to Regional Water Engineers for operation and maintenance.

Box 8.2: Agencies Involved in the Water and Sanitation Sector

Several agencies are responsible for aspects of the construction and maintenance of water supplies and sanitation facilities in Tanzania. While the lead ministry is the Ministry of Water, Energy and Minerals, that ministry carries out much of its work in coordination with local government authorities, and with other ministries. The main responsibilities are outlined below.

The **Ministry of Water, Energy and Minerals** operates through regional and district water engineers at the local level. It is charged with policy formation, development of the rural and urban water supplies, construction of drainage works and facilities for safe disposal of waste water in urban areas, environmental hygiene and sanitation interventions in urban areas, development of river basins, water quality control and issuing of water rights, provision of consultancy services for water supplies and waste water disposal, and supervision of parastatals .

The **local government and regional administration under the Prime Minister's Office** is responsible for establishing, providing, maintaining and controlling public water supplies, preventing pollution of water in rivers, streams and water areas, and providing for, regulating, and where needed, prohibiting, the sinking of wells.

The **Ministry of Health** is responsible for rural sanitation and health education.

The **Ministry of Community Development, Women's Affairs and Children** is responsible for the implementation of the Health Through Sanitation and Water (HESAWA) program, funded by SIDA.

The **Ministry of Lands, Housing and Urban Development** implements water schemes under a special services program.

The **National Urban Water Authority** is charged with development, operation and maintenance of urban water supplies on mainland Tanzania. (To date, NUWA operates only in Dar es Salaam, Kibaha and Bagamoyo, though officially its jurisdiction extends to all towns on the mainland.)

Problems with the local government authorities are pronounced. Although the acts that established local governments indicate that many important roles and responsibilities have been delegated from the central to the local level, full delegation generally is lacking. To date, many of the functions thought to have been delegated are still being carried out by the central government. In addition, there are internal contradictions within the various acts that delegate responsibilities. For example, the act establishing that NUWA has the responsibility for operating and maintaining urban water supplies conflicts directly with the act passed in the same year (1982) establishing local governments and spelling out their responsibilities in the sector. Similarly, the Water Utilization Act, as amended in 1981, also contradicts some of the provisions of the Local Government Act.

Second, while the policy recognizes the importance of users' contributions to water systems, it does not lay out a clear and feasible plan for achieving sufficiently high levels of cost recovery for operation and maintenance. This is particularly problematic because the areas with the greatest water deficits are also those with the lowest per capita GDP.

Third, the plan implies large financial outlays from the public sector, with little attention to whether such outlays are possible given the current fiscal constraints facing Tanzania. For example, the 10-year water supply program (1993-2002), based on the National Water Policy, would require an estimated US\$523 million (in 1993 prices). This implies that the government would have to devote about 50 percent of its annual development budget to capital outlays for water and sanitation systems during each of the next 10 years. Finally, the policy is silent on important issues such as the priority in allocating water in times of acute drought and the use of treated water for irrigation purposes.

EXPENDITURES IN THE WATER AND SANITATION SECTORS

Government Expenditures

In FY 1995, government expenditures on water and sanitation projects were Tsh 6.8 billion. This represented a decline of 58 percent in real terms from the previous year. Real declines in support to the water sector are projected to continue. Approved estimated water expenditures in FY 1996 declined by 33 percent from their FY 1995 level. Government water sector expenditures accounted for 0.3 percent of GDP, or about US\$40 per capita, in FY 1995.

Donor Expenditures

Donors provide essentially all of the funding for capital investments in the water and sanitation sectors (Table 8.6). Many donor agencies have assisted with the implementation of water and sanitation projects since the government outlined its targets in 1971, including the various development agencies of Sweden, Finland, Denmark, Norway, Canada, Germany, Australia, Japan, and the Netherlands, plus ODA, the World Bank, UNICEF, UNDP, and ADB. Total external support to Tanzania increased from US\$607 million in 1986 to US\$1,059 million in 1991, an average annual increase of 9 percent. However, in recent years donor support for water and sanitation investments has decreased sharply. External funding for water and sanitation dropped from almost US\$50 million in 1989 (5.4 percent of total foreign assistance), to US\$2.6 million in fiscal year 1994 (0.3 percent of total foreign assistance). Foreign support for the sector rebounded to US\$11 million in fiscal year 1995 (1 percent of total foreign assistance), and is projected to remain at this level through 1996/97.

Table 8.6: Foreign Assistance to Water and Sanitation, 1989-1995 (US\$)

Year	Total Foreign Assistance (US\$ million)	Foreign Assistance to Water and Sanitation (US\$ million)	Water and Sanitation as Share of Total Foreign Assistance (%)
1989	924.0	49.6	5.4
1990	1147.0	30.3	2.6
1991	1081.0	18.5	1.7
FY 1994	972.0	2.6	0.3
FY 1995	984.0	11.0	1.1

Source: Mutalemwa, 1994; World Bank, 1997.

Unit Costs

The unit costs of both urban and rural water supply projects are difficult to estimate from the data available. Most published estimates of unit costs have been underestimated, in part because they have not included the real costs of donor, government administrative, and overhead costs. Table 8.7 presents an attempt by Katko (1987) to synthesize the unit costs of several donors in the rural water sector. Mutalemwa (1994) arrived at similar, very low unit-cost estimates. About the only thing that is clear from these estimates is that the pumped and piped schemes are much more expensive than gravity-fed systems or handpumps.

A recent study presents a much different, and probably more realistic, picture of the costs of providing improved water services in urban Tanzania. These studies indicate that costs per household in urban Tanzania are not cheap compared with other parts of the world and that per household costs vary

Table 8.7: Indicative Cost Data for Externally Supported Rural Water Supply Projects in Tanzania

<i>Donor and Technology</i>	<i>Capital Cost per Capita (Tsh)</i>	<i>Annualized Capital Cost per Capita (Tsh)</i>	<i>Annual per Capita Operation and Maintenance Cost (Tsh)</i>	<i>Year</i>
DANIDA				
Pumped scheme			150	1985
Gravity scheme			10-20	1985
Hand pump well (Iringa)	225			1985
Hand pump well (Ruvuma)	280			1985
Gravity scheme			25	
Hand pump scheme			25	
Gravity scheme	500			1987
FINNIDA				
Pumped pipe scheme (Kingari, Mtwara)	1730	155	50	1987
Pumped pipe scheme (no treatment)	1360	120	50	1987
Hand pump wells (hand dug)	210	15		
Hand pump wells (hand auger)	185	15	25	1987
Hand pump wells (DTH well)	740	55		
Hand pump wells (cable tool well)	360	27		
NORAD				
Gravity scheme			15	
Hand pump well			30-40	
TCRS				
Hand pump well	17.5			1987

Source: Mutalemwa, 1994

significantly from one town to another. Cost estimates for most towns appear to be on the order of US\$10-15 per household per month. Costs in Mwanza are estimated at US\$5 per household per month, while those in Morogoro would exceed US\$20 per household per month.

Cost Recovery and Water and Sanitation Tariffs

Urban Water Supply. The central government retains its role as the financier of urban water supply projects through the development budget. Although the water policy calls for full cost recovery, in reality, the process of water tariff-setting and approval is lengthy, arduous, and painful. Until September 1992, for example, all proposals for increases in water tariffs had to be approved by the Ministry of Water, Energy and Minerals, after which the proposal was forwarded to the Cabinet for final approval.

In 1992, a slightly less cumbersome, but still centralized and standardized, process was developed. The National Urban Water Authority Board of Directors can revise water tariffs by a

maximum of 15 percent every six months¹⁰. Larger increases require ministerial-level approval.

Tariffs have been revised only three times since 1980 (see Table 8.8). However, the revisions between 1992 and 1993 were very small. For example, the increase in charges per 1,000 gallons for domestic users was from Tsh 100 to 120 during that period. Not only is the tariff low, but many households never pay their water bills. Collections have consistently fallen far below actual recurrent costs.

The end result of the “tariff adjustment process” and “full cost recovery policy” is that the residents of Dar es Salaam and other urban areas enjoy some of the cheapest, most heavily subsidized water in the world.

Urban Sanitation. Before 1988, households connected to sewer lines did not pay for this service. In 1988, monthly household sewer fees were established (see Table 8.9), but there is widespread non-payment of these charges.

Rural Water Supply. According to the 1991 National Water Policy, the economic base of the rural population is weak, so cost-sharing (rather than cost-recovery) is the strategy that has been adopted. In concept, water consumers in rural areas contribute both to capital costs, and operation and maintenance of the water schemes.

To institutionalize community contributions, several donors and the central government have adopted a more participatory approach for new water supply projects. This approach supports the establishment of water and sanitation committees, and the creation of a special water account into which villagers make contributions. The primary objective is to enable villagers to use resources available to them to construct, operate, and maintain their own village water projects. Beneficiaries can make cash or in-kind contributions. Villagers are also asked to take part in the operation and maintenance of the systems. To date, there is insufficient experience with such efforts to know the extent to which cost-sharing in the rural areas will work.

Table 8.8: Charges for Water in Urban Areas, 1980-1993 (Tsh per 1,000 gallons)

<i>Type of Customer</i>	<i>Water Charge (Tsh per 1,000 gallons)</i>			
	<i>1980</i>	<i>1988</i>	<i>1992</i>	<i>1993</i>
Domestic	4.5	57.2	100	120
Institutional	–	–	160	190
Commercial	13.5	192	330	380
Industrial and Irrigation	–	248	420	485

Source: Mutalemwa, 1994.

Table 8.9: Charges for Sewage Services in Urban Areas, 1994 (Tsh)

<i>Type of Customer</i>	<i>Charges</i>
Domestic	300 per Month
Commercial	1225 per Month
Major Commercial	14.6 per Cubic Meter
Institutions	14.6 per Cubic Meter
Industrial	114.6 per Cubic Meter

Source: Mutalemwa, 1994.

¹⁰ Typically, the costs of inputs to water systems have increased more rapidly than this. For example, electricity costs (accounting for about 70 percent of total NUWA expenditures) increased from Tsh 60 million per month in September 1992 to Tsh 103 million per month in March 1993, and then to Tsh 260 million per month in July 1993. This is an overall increase of 333 percent in a span of nine months.

DISTRIBUTION OF BENEFITS

As shown above, the water sector in Tanzania is characterized by full public (government and donor) financing of capital costs and little generation of revenues from users for operation and maintenance. The underlying assumption behind the water tariff structure has been that the rural poor would benefit from a free-water policy. We can examine whether this has, in fact, been the result by examining the distribution of benefits of public spending on capital and operational costs.

The distribution of government spending on water can be calculated using assumptions about the government subsidy for each type of service. Based on information about the current costs of existing systems, it can be estimated that households with a private connection to the public water system receive their water at about US\$60 per year below the annual cost of providing service. Evidence indicates that households may be paying about US\$1 per month for service that may cost about US\$6 per month. Users of non-exclusive public water sources, such as public taps, wells, and neighbors' water connections, were estimated to be receiving a subsidy of about US\$25 per year.

The distribution of households receiving these subsidies is shown in Table 8.10. About 60 percent of the expensive private-connection subsidy goes to the richest 20 percent of the population. The subsidy for publicly available water sources is much more evenly distributed. Overall, subsidies are distributed over the population of households in the following pattern: 52 percent of all households receive no subsidy; 36 percent receive an annual subsidy estimated at US\$25; and about 12 percent receive an annual subsidy worth US\$60.

Given this distribution, the incidence of government spending on water can be estimated. This is shown in Table 8.11. More than 40 percent of government (and donor) allocations for water services is used by the richest 20 percent of households, with an average subsidy of US\$26.50 per household. The bottom 40 percent of households receive about 22 percent of government water spending, with an average subsidy of only about US\$10 per year per household.

Table 8.10: Distribution of Subsidies in the Water Sector, by Expenditure Quintile

<i>Subsidy</i>	<i>Lowest 20%</i>	<i>Highest 20%</i>	<i>Total</i>
Number of Households	421,026	347,303	2,174,375
Percent	19.36	15.97	100.00
<i>Households Receiving Public Connection Subsidy</i>			
Number of Households	257,827	379,223	1,512,259
Percent	17.05	25.08	100.00
<i>Households Receiving Private Connection Subsidy</i>			
Number of Households	10,420	291,575	484,981
Percent	2.15	60.12	100.00
Total	689,273	1,018,101	4,171,615

Source: HRDS, 1993/94.

Table 8.11: Distribution of Public Subsidies by Expenditure Quintile, 1993

<i>Subsidy</i>	<i>Poorest 20%</i>				<i>Richest 20%</i>	<i>Total</i>
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	
Per Household Subsidy (Tsh)	9.8	9.5	12.6	16.6	26.9	15.8
% of Total Subsidy	10.3	11.2	15.4	22.0	41.0	100.0

Source: HRDS 1993/94; World Bank, 1994a.

IMPLEMENTING A DEMAND-SIDE PLANNING STRATEGY: OPTIONS AND FIRST STEPS

The official government program to provide improved water and sanitation for all by the year 2002 is not consistent with the severe financial and other resource constraints facing the sector. In fact, at current government and donor funding levels, it is likely that the proportion of the Tanzanian households with improved water and sanitation coverage will continue to decline as population increases. In the urban areas, there is a wide gap between the current policy requiring full cost recovery from urban water users and the actual water tariffs.

The most important potential source of funds for water and sanitation investments is the Tanzanian household, but the magnitude of effective household monetary demand for improved services is probably low. There is little hope for real progress in the water and sanitation sector without economic pricing in both urban and rural areas. The alternative of heavily subsidized or free water and sanitation has already been tried, and is clearly no longer a feasible policy alternative. A few donors may continue to provide improved water services as a gift to very poor communities, with no prospect that they will be sustainable after donors withdraw. However, it must be recognized by all involved that neither urban nor rural water policy can be predicated on such gift giving or the assumption of large-scale donor funding.

A new "conventional wisdom" is emerging in Tanzania that a demand-side approach to the delivery of water and sanitation service is needed. This new paradigm holds that households should be provided with services that they want, and for which they are willing to pay. Beneficiaries need to be involved in decisions regarding choice of service level, and to understand the cost recovery implications of their choices. Communities need to assume responsibility for operation and maintenance of facilities, and have a sense of ownership in their water system.

Implementation of the new demand-side planning paradigm may mean that water and sanitation investments will not receive top priority. If given a choice, many rural communities in Tanzania could decide to delay investments in water and sanitation and tackle other problems first. Other communities would likely decide to make improved water supplies their top priority.

The World Bank Water Demand Research Team (1993) has proposed a classification scheme of four types of rural water situations in developing countries based on the levels of services that should be provided and how these services should be financed. In Type-I villages, there is high willingness to pay for private connections and low willingness to pay for public taps. In Type-II villages, a few households will pay the full costs of private connections, and the majority will pay the full costs of public taps. In Type-III communities, households are willing to pay for improved service, but the improvements are costly, and full cost recovery is not possible. Type-IV communities are characterized by low household willingness to pay and no possibility of cost recovery.

It is difficult to generalize, but there appear to be large numbers of Type-III and -IV communities in rural Tanzania, and probably some Type-II villages. It is important that the government and the donor community recognize the differences in these three types of communities and structure their limited investments and technical assistance accordingly. Type-II villages are likely to be located in rural areas with higher than average agricultural production and the ability to transport surplus production to regional markets at reasonable costs. On the water supply side, these villages will likely have opportunities to choose between either gravity-fed schemes or electricity-fueled pumping from boreholes. Since many systems have already been built by donors in Type-II communities, initial capital costs may

Box 8.3: The East Kilimanjaro Water Supply Project: Transferring Ownership and Control from Central Government to Community Ownership

The East Kilimanjaro Water Supply Project (EKWSP) serves approximately 250,000 people living on the eastern slope of Mt. Kilimanjaro. The 600-square kilometer service area has a cool, tropical climate and high annual rainfall. Many of the households served by the water system are engaged in agricultural activities such as coffee and banana cultivation. Three main water intakes capture high-quality surface water from the protected national forest, and pipes deliver the water to households on the slopes below via a gravity-fed system with over 500 kilometers of pipelines.

The planning and construction of the first phase of the water system began in the late 1950s and 1960s. The second phase was planned in the late 1970s, and construction was completed in 1980. Much of the distribution system is now over thirty years old and in need of repair and maintenance. The project is owned by the Ministry of Water, Energy, and Minerals. Because of the large project area, several district water engineers have been responsible for the operation and maintenance of different parts of the distribution system. As a result, no one was looking at the system from an overall management perspective, and crucial maintenance activities failed to take place. For a 12-year period spanning the late 1970s and 1980s, no one even visited the main water intake, and it suffered serious deterioration.

In 1991, with the help of GTZ, the local communities served by the project recognized that the system was only operating at 50 percent of design capacity. Most households were served by a system of free public taps, but about 2700 households are estimated to have tapped into the system and obtained private connections on their own initiative. Since water was provided free, there was no incentive for anyone to conserve, and lower-lying areas had less reliable water supplies, or no water at all. For many years, the two district water engineers and regional water engineer responsible for the system did not receive the financial resources from the central government to adequately maintain or operate the system, and it became increasingly clear that a new management approach was needed.

In 1991, GTZ began working with the Ministry to create a financially autonomous organization to which the Ministry could transfer ownership of the East Kilimanjaro Water Supply Project. A participatory workshop was organized to discuss the nature of the problems facing communities in the service area, what they wanted from a water system, and strategies for achieving their objectives. The plan that eventually emerged from these discussions and a series of committee meetings was to establish a new organization that would be chartered as a private company (but its charter would not allow it to make a profit). As of spring, 1994, the planning for this company ("Kiliwater") is now well along, but it has not yet been legally established, and final government approval for the transfer of the actual physical assets has not yet taken place.

The plan provides for a General Manager who would handle the management, planning, and administrative functions of the company. This individual would report to a Board of Directors that would consist of six representatives each from six zones, and two district water engineers. The plan is for the company to meter the water entering and leaving 58 separate user areas, and to bill the water committee responsible for each user area for the volume used. Each water committee is responsible for determining how water would be paid for in its user area, supervising tariff collections, paying its water bill, supervising caretakers of the distribution system and taps in its area, and liaising with zonal offices.

Households in the service area are offered the opportunity to purchase one "share" in the company for approximately US\$2. This share is similar to a membership fee in a cooperative and allows the household to elect two delegates to represent their user area at the annual meeting. It is envisaged that the company will sell water to the water committees for approximately Tsh 150 per cubic meter. About Tsh 130 per cubic meter is needed to pay for operating and maintenance costs, and Tsh 20 per cubic meter is allocated for capital costs. It is anticipated that without any capacity expansion, the company should sell about 7000 cubic meters per day. This would imply total annual revenues on the order of Tsh 380 million (about US\$750,000; or US\$20 per household per year). To date, GTZ's financial contribution to the planning and preparation of this project to create Kiliwater has been on the order of 3 million DM.

be low, and the possibility exists for financially self-sufficient operations if an appropriate organizational structure can be adopted and good management found. The East Kilimanjaro Water Supply Project is one example of what appears to be a group of Type-II communities served by an existing gravity-fed scheme where financially self-sufficient operation of the water system is feasible (see Box 8.3).

In Type-III communities, there is still substantial revenue potential based on a system of public standposts, but the costs of providing improved water service are greater than the revenues that can be collected. This may be because gravity schemes are not possible, groundwater is beyond the reach of

handpumps, and electricity is unavailable. Subsidies would be required to operate such water systems, at least until household incomes rise sufficiently to justify increased charges. Such communities are likely to be found in Mtwara, Shinyanga, and Mara regions. The Makonde Water Scheme in Mtwara is currently serving a population of about 150,000 people living in what would be considered Type-III communities.

It is important to recognize the water supply and development interactions in Type-III villages. Before an improved system is installed, women often walk several hours a day to collect water, and the household is unwilling to pay a sufficiently large portion of its limited cash resources to either purchase water from vendors or pay for the full costs of an improved water system. If a reliable, improved water system in a Type-III village is installed, it is likely to save substantial amounts of women's time. If some of these time savings can be converted to cash through increased labor inputs to agricultural production trading or other market activities, the household is likely to be able to pay for the full costs of the improved water system and still be better off than before the water system was installed.

It is crucial that other government or donor policies not distort the households' choices in Type-III communities so that this "virtuous cycle" of development is aborted. Donors and government must ensure that households in Type-III communities are fully aware that the initial water prices and charges are not sufficient for the long-term sustainability of the water system, and that water prices will have to rise over time as household incomes grow. Agricultural prices need to be high enough to provide strong incentives to households to increase production for market exchange.

In Type-IV communities, it is not feasible to recover the costs of public taps, handpumps, or private connections. In such communities, people are willing to pay very little for improved water supplies, either in absolute terms or as a proportion of income. In such communities, water is often available from nearby traditional sources. When water systems in such communities fail, households do not care much whether they are repaired or not. Tanzania probably has many of these Type-IV villages, especially in areas with high rainfall and plentiful surface-water sources such as in the Kagera, Kigoma, and Rukwa regions.

In the past, water planners have assumed that, if households in Type-IV communities were educated about the health benefits of clean water, they would switch from their traditional sources to an improved source, and they would be willing to pay for low-cost improved services such as handpumps. The experience of Tanzania over the last 25 years suggests that the decisions that households face in Type-IV communities are far more complex than this. When traditional sources are closer than a new improved source, households may go to the traditional source not only because it saves time, but because of the valued social interaction associated with the traditional water collection activities by women and children. Alternatively, the household may decide that the benefits from drugs, increased food supplies, or school fees may be greater than paying for water when traditional sources are already nearby. In such cases, financially viable water systems do not exist, and the appropriate strategy is to wait until such communities are able and willing to pay for improved services.

It is not always easy to distinguish Type-II, -III, and -IV communities from each other because outsiders may know little about the magnitude of household demand for improved water services or the other constraints facing households. Fortunately, the demand-side planning paradigm does not require that central planners or donors determine into which category communities fit. The role of the central government is rather to set up the proper incentives so that local government and the communities

themselves can make resource allocation decisions with the full cost implications of all their choices clear to them. In this case, communities will identify themselves as Type-II, -III, or -IV by the decisions they make.

THE SOCIAL SECTORS IN ZANZIBAR

Tanzania is a union encompassing Zanzibar (the islands of Unguja and Pemba) and the Tanganyika mainland. The islands are comprised of 5 regions (North Unguja, South Unguja, Urban West, North Pemba and South Pemba), and 10 districts (North A, North B, Central, South, West, Urban, Wete, Michewani, Chake, and Mkoani). Most of Zanzibar's population (70 percent) live in rural areas. According to the 1988 census, the population density of Zanzibar is 275 inhabitants per square kilometer, while mainland Tanzania has only 19 people per square kilometer.

In matters such as defense, Zanzibar and Tanganyika act in concert and share a common central government. In other matters, including the financing and delivery of most social services, Zanzibar has a separate governance and implementation structure. For example, Zanzibar has its own Ministries of Education, Health and Water.

To complement the *Social Sector Review*, which focuses on the mainland, this chapter describes the key features of the health, education, water, and other sectors in Zanzibar. In addition, it presents analyses of the Zanzibar sample of the 1993/94 HRDS. We did not have adequate data to provide an analysis of public education and health expenditures¹. The chapter is organized by sector, and covers outcomes and use of services, household expenditures, and government financing issues.

EDUCATION

Outcomes and Enrollment

Primary School. Most of the patterns of education participation, attainment, and expenditures seen on the mainland are also found in Zanzibar. Fifteen years following the declaration of universal primary education (UPE), only 68 percent of children age 7-13 are enrolled in school. According to the 1988 population census, the number of children attending primary school should have been 168,729, but only 114,710 were enrolled in the 131 primary schools.

Although there are low enrollment rates, Zanzibar's education system has experienced a rapid increase in both primary- and secondary-school enrollment due to an increased size of the cohorts. In 1990, the annual enrollment growth rate was 4.5 percent (Mosha and Sumra, 1992).

¹ We expect public expenditure patterns to be very similar to that of the mainland (with the exception of high-cost expenditures on universities and referral hospitals).

The gross enrollment rate for primary school is about 98 percent, while the net enrollment rate is 69 percent (HRDS, 1993/94). According to the 1992 statistics, the highest primary-school enrollment rate (82 percent) was in the South District, while the lowest rate (41 percent) was in Micheweni.

A pattern of late-start enrollments exists in Zanzibar as on the mainland. According to the HRDS, the most common reason given for late-starts was that 7- and 8-year olds are "too young" to attend school. The peak in attendance is in the very early teenage years. Between the ages of 7 and 9, about 53 percent of children are in school, but between ages 10 and 14, 83 percent are attending. Between ages 15 and 19, attendance falls to 54 percent (HRDS, 1993/94).

Gender Differences. Girls and boys tend to start school at approximately the same age (9.1 and 9.2 years, respectively). Sixty-three percent of females age 7 to 9 are enrolled, while 50 percent of males age 7 to 9 are in school. However, as boys and girls grow older, enrollment rates decrease, particularly among girls. About 56 percent of boys age 15-19 are in school, while only 50 percent of girls in the same age group are attending.

Economic Differences. Children from lower-income households are less likely to be enrolled than are children from better-off households. Among 10- to 14-year olds, 92 percent of children from the richest 20 percent of households are enrolled in school, while only 64 percent of the children from the poorest 20 percent of households attend school. Among 15 to 19 year olds, only 20 percent of children from the lowest-income households are enrolled, while 61 percent of children from the wealthiest households attend school.

Mainland Comparison. According to the HRDS, Zanzibar has higher enrollment rates than the mainland's enrollment rates. For example, of children age 7 to 9 on the mainland, 32 percent were enrolled in school, while in Zanzibar, for the same age group, 53 percent were attending school in 1993/94. A similar pattern exists for children between the ages of 15 and 19.

The self-reported illiteracy rate in Zanzibar is 40 percent (HRDS, 1993/94). Approximately 26 percent of women and 15 percent of men are illiterate. The illiteracy rates in Zanzibar are considerably higher than the mainland's rate of 25 percent.

Secondary School. Enrollment rates are much lower in secondary school than in primary school. The gross enrollment rate for secondary education is 50 percent, while the net enrollment rate is 21 percent (HRDS, 1993/94). Again, the South district had the highest enrollment rate (52 percent), while Micheweni had the lowest enrollment rate (13 percent).

The number of candidates for Form IV increased from 2,455 in 1986 to 3,598 in 1990, while the percent of students selected for Form IV decreased from 17.1 percent to 9.7 percent. In 1990, the transition rate from Form III to Form IV for boys (12.6 percent) was almost twice as high as the transition rate for girls (6.7 percent). Since schools must have a sufficient number of students in order to hold Form IV classes, only 5 of 12 schools were offering Form IV classes in 1991 (Moshia and Sumra, 1992).

Gender Differences. Within those households in the lowest 40 percent of household expenditures, girls make up 30 percent of the small number of students attending government schools. Among the richest 40 percent, girls comprise 62 percent of students attending government schools, but only 14 percent of students attending private secondary schools². Overall, girls make up 49 percent of students attending school, while boys constitute 51 percent (HRDS, 1993/94).

Economic Differences. Better-off households send children to secondary school more often than do poor households. In the HRDS, the rate of current secondary-school attendance was found to be four times greater in the highest 20 percent of the expenditure distribution than in the lowest 20 percent.

Government secondary schools are the main source of secondary schooling, but they tend to serve the better-off households disproportionately. According to the results of the HRDS, of those attending secondary school in 1993/1994, 89 percent attend a government school and 11 percent are enrolled in a private school. Of those attending government secondary schools, only 10 percent come from the poorest 20 percent of the population, while 37 percent are from the richest 20 percent. Of those attending private secondary school, 89 percent come from the top 40 percent of the population, while only 11 percent are from the bottom 40 percent. In addition, almost two-thirds of students come from urban areas, while only one-third of students are from rural areas.

Mainland Comparison. More students attend government secondary schools in Zanzibar than on the mainland. In Zanzibar, a full 88 percent of students in secondary school attended government schools, while on the mainland only 39 percent were enrolled in government secondary schools in 1993/94. That is, 61 percent of secondary students on the mainland attended either private, church-affiliated or community schools. Given the high demand for education and the government's financial constraints, non-governmental schools could play an instrumental role in Zanzibar, as they do on the mainland.

Box 9.1: School Drop-Outs Compared to Parents' Education and Occupation

According to "Absenteeism in Schools in Zanzibar," parents without any formal education were most likely to have children who drop out from school. Almost two-thirds of drop-outs were children of parents with no education. Not surprisingly, as parents' education level increased to Standard VII, the proportion of school drop-outs decreased to 25.4 percent. The proportion declines further to 2.3 percent when one parent's level of education was at least Form IV.

Mothers' education appeared to have more influence on children remaining in school. For example, among households with mothers with no formal education and fathers with at least some formal education, the proportion of school drop-outs was 12 percent. However, when mothers had some primary education and fathers had no formal education, the proportion of drop-out children declined further to 7.3 percent.

The proportion of school drop-outs also varied by parents' occupation. Farmers' children were more likely to drop out of school (at the rate of 63%) than children whose parents worked in the public sector (at the rate of 15%), and fishermen's children (at the rate of 8%). Parents working in the private sector had the lowest proportion of school drop-outs.

Reasons for dropping out included marriage, employment, and the belief that attending school does not guarantee employment. Respondents mentioned that they knew of Forms-III, -IV and -VI leavers who did not have jobs.

² The estimates presented are based on a small absolute number of girls attending secondary school.

Household Expenditures on Education

Households across Zanzibar spend from 0.4 to 1.4 percent of their total expenditures on education. Nationwide, wealthier households spend a greater percentage of their total expenditures on education than poorer households (0.8 versus 0.6 percent, respectively). However, poorer households in rural areas spend a slightly larger share than do richer households (0.5 and 0.4 percent, respectively). Rural households spend a larger percentage (of smaller household budgets) than urban households.

On average, households spent a total of Tsh 11,786 on children's education in 1993. There is great variation in total expenditures on education across the welfare distribution. Households in the lowest 20 percent of the expenditure distribution spent a total of Tsh 3,363 on education, while those in the highest 20 percent spent almost six times as much, or Tsh 19,915. Households living in urban areas paid considerably more than households living in rural areas in 1993/94 (Tsh 18,179 and 5,535, respectively).

Primary School. In 1993, households spent approximately Tsh 3,391 per pupil in primary school. Rural households spent Tsh 1,792, while urban households spent Tsh 4,976. Not surprisingly, per-pupil expenditures vary across the welfare distribution, with the wealthiest households paying more than 3 times as much per student as the poorest households (Tsh 5,233 and 1,446, respectively)

The three largest expense categories for primary school were uniforms, books and supplies, and contributions and fees, which made up 58, 19, and 10 percent of expenditures, respectively. For the poorest 20 percent, these three categories accounted for 100 percent of spending, but for the richest 20 percent, they accounted for only 85 percent.

Secondary School. Households with children in secondary school spent an average of Tsh 12,324 per student in 1993.

Households in the lowest 20 percent of the expenditure distribution spent about Tsh 3,226, while those in the highest 20 percent paid more than five times as much, or Tsh 16,984. Households in rural areas spent about Tsh 6,105, while households in urban areas paid Tsh 16,390. Households with children in private secondary school spent almost twice as much as households with students in government secondary school (Tsh 21,669 versus 12,026)³. When comparing expenditures on primary versus secondary education, households spent, on average, three times as much on secondary education than primary.

Mainland Comparison. Zanzibari households with children in school spend substantially less on education than mainland households do. On average, Zanzibari households only spent Tsh 12,324 per secondary student in 1993/94, while mainland households spent Tsh 41,877 per student. This is

Box 9.2: How Do Zanzibari Parents Perceive the Quality of Education?

In the HRDS, respondents were asked for their opinions about various quality-related features of the nearest government primary school. The features included (a) quality of teaching staff, (b) quality of headmaster, (c) adequacy of supplies, (d) state of physical infrastructure, and (e) amount of self-reliance work. Overall, respondents are dissatisfied with several aspects of the educational services. The most obvious shortcoming is in supplies and infrastructure. Three-quarters of respondents stated that the supplies were "poor" or "very poor," and about one-third said that the infrastructure and self-reliance work was "poor" or "very poor." In contrast, almost 90 percent of respondents thought teachers and headmasters were adequate or better. These results mimic those from the mainland survey.

³ There are very few students attending private secondary school. Thus, these figures are presented for illustrative purposes.

primarily due to high boarding costs on the mainland. Very few students in Zanzibar attend boarding schools. Although the differential is smaller, Zanzibari households also spent less on primary school than mainland households did in 1993 (Tsh 3,391 and 3,842 per primary student, respectively). Mainland households spend twice as much on contributions, fees, books, supplies, and tutoring than Zanzibari households do on these same items (HRDS, 1993/94). Households in Zanzibar pay slightly less on uniforms than do mainland families (Tsh 1,220 and 1,544 per student, respectively). Expenditures on uniforms make up the largest share of total primary-school expenditures.

Structure of the Education System

Management and Organization. Zanzibar has a separate Ministry of Education (MOE) and different educational system from the mainland. The MOE is responsible for the development and management of the educational services in the islands. It is divided into seven directorates by levels of education and functions, and has offices in all of the islands' districts.

The provision of education is managed, organized, and administered by the MOE. Until recently, formal primary-school education lasted 8 years. Zanzibar currently provides 7 years of primary education (Standards I-VII) and three years in the first cycle of secondary school (Forms 1-3), which together make up the basic primary-education cycle. For those who qualify, there are a variety of higher secondary and further education opportunities.

The Department of Research and Curriculum Development is responsible for the curriculum at all levels of education. The department is also in charge of in-service training of teachers as well as monitoring and evaluation of the education system. The primary-school curriculum includes arithmetic, Kiswahili, English (from Standard III onward), religious studies, and environmental study. Lower-secondary education (O level) streams include science bias, arts bias, technology bias, and Islam. In 1994, a commercial stream was introduced.

Examinations and Types of Schools. In many schools, primary and lower-secondary classes are provided in the same school, and some teachers conduct both primary- and secondary-level classes. Of 165 education institutions in Zanzibar, there are 62 exclusively primary schools (Standards I-VII), 69 schools with both primary and lower-secondary levels (Standard I through Form III), 1 primary/secondary school, 10 secondary schools, and 5 post-secondary schools.

At the end of Standard III and VI, students are required to take an examination. Students performing below standard must repeat the year. However, after repeating the year, they are automatically promoted. Recognizing that many students drop out instead of repeating, the Ministry has subsequently decided to discontinue the practice of asking students to repeat the year, and now allows them to continue. Students who perform well in primary school are selected to pursue specialized subjects in biased secondary schools.

At the conclusion of Form III, students sit for an examination, and those who pass are admitted to Form IV. At the end of Form IV students sit for the Tanzania National Examinations. Successful candidates may continue to higher-secondary education (Forms V and VI) institutions, either Lumumba School in Zanzibar, or Fidel Castro in Pemba. Those who pass Form IV examinations also may attend the technical education institutions, including Mikunguni Technical Secondary School and the Karume Technical College. Graduates from Mikunguni continue with their course work at Karume and earn full

Technician Certificates in civil engineering, mechanical engineering, electrical engineering, automotive engineering, or telecommunications. The total enrollment at Karume College in 1993 was 126 students. Alternatively, students who successfully complete Form IV may enroll at the Nkrumah Teacher Training College, The Institute of Kiswahili and Foreign Languages, or in the certificate teachers' course at the Islamic School.

Those who successfully finish Form VI and pass their A-level examination continue their further education at universities on the mainland, outside the country, or in the diploma course at the Nkrumah Teacher Training College. Only 108 students completed Form VI in 1990.

Teachers and Other Education Inputs. Teachers in Zanzibar are employed under normal government procedures. Apart from a salary differential, the conditions and benefits of employment adhere to standard government regulations. In 1993/94, there were 4,372 teachers, 2,084 of which were female and 2,288 male.

Teacher education is offered in three institutions. These institutions accommodate 3 grades of teachers: (a) diploma teachers, who have a Form VI education level and two years training; (b) Grade A teachers, who have a Form IV education level with two years training; and (c) Grade B teachers, who have a Form III education level with one year of training.

To cope with the massive enrollment increase in the late 1960s and early 1970s, the MOE had to overlook most quality-related teacher employment criteria. A number of failed Form III and Form IV school leavers were employed and deployed to schools without teacher training or a briefing course. By 1978, there were more untrained teachers than trained ones. However, a concerted training effort decreased the number of untrained teachers from 59 percent in 1978 to 28 percent in 1993.

More than one-half of the students at Nkrumah College are in-service students, and there are several indications that in-service training will remain the main mode of teacher training in Zanzibar. There are more than 20 categories of teachers with various academic backgrounds. According to one study, only 36 percent of the teaching force has both the education and skills to teach effectively (Moshia and Sumra, 1992).

The demand for lower-secondary teachers has deprived the primary level of an adequate number of trained teachers. Due to remuneration benefits, primary-school teachers tend to upgrade themselves by earning a diploma, which results in a transfer to a secondary school. There are few incentives to remain teaching at the primary level. The present system of withdrawing teachers for 1-2 years of in-service training further decreases the current supply of teachers.

In the past, many teachers left due to poor working conditions and low monthly wage (which ranged from Tsh 3,790 to Tsh 9,655 in 1993/94). The government, in turn, recruited unqualified individuals to teach. In order to prevent this practice, it is necessary to improve teachers' working and living conditions and to increase their wages.

Many schools were built in rural areas after the 1964 revolution, and further expansion occurred in 1978 when UPE was declared. In order to achieve UPE, communities erected temporary buildings, and these continue to be used today. These buildings have not been properly constructed and maintained. Most schools, especially in the rural areas, lack basic amenities, like water, lavatories,

electricity, and furniture. According to the 1992 statistics, only one-quarter of school classrooms had furniture. In 1990, most classrooms were overcrowded, with an average class size of 40 children (Mosha and Sumra, 1992).

Zanzibar's rapid increase in primary- and secondary-school enrollment has not been met by a corresponding expansion in school facilities. Increased enrollment has been accommodated by having double and, in some cases, triple sessions. The average annual growth rate of classrooms was 0.29, while the average annual growth rate of class streams was 3.44. The number of streams per classroom has increased from 1.52 in 1986 to 1.72 in 1991 (Mosha and Sumra, 1992).

School committees have been established in all schools. In some schools where the committees have been active and have supported the head of the school, a number of minor changes have occurred, such as repairs of the building and involvement in academic activities.

Cost-Sharing in the Education System

Education in Zanzibar is financed partly by the government, external donors, and as we know from the HRDS, by households. Recently, cost-sharing mechanisms to supplement Ministry funds have been introduced. All newly registered students, as well as those registering for Zanzibar examinations, pay a fee of Tsh 200. Parents also contribute by purchasing uniforms, text books, and other school supplies, and by providing free labor to construct classrooms. In addition, the Ministry used to provide (free of charge) school supplies, such as rulers, to students at some schools. Currently, they charge a lower-than-market price for such supplies. Furthermore, teachers who are selected for in-service training are required to pay for their transportation costs to the college.

Textbooks and other reference materials, especially for secondary schools, are scarce. Donor financing from SIDA, ODA, and DANIDA is improving the situation. Nevertheless, there is demand for 5.3 million books, while the government, with SIDA's assistance, provided only approximately 1.5 million textbooks in 1993/94.

Changes in the economic situation, coupled with the great expansion of the education system, have financially strained the education budget. In 1988, 11.9 percent of the total budget was spent on education. In 1993, this figure decreased to 10 percent. In an effort to improve the quality of education, the government decided that the education budget should be raised from 10 percent to 20 percent in 1995/96.

HEALTH

Outcomes

Infant and Child/Maternal Mortality. Despite considerable efforts made by several health initiatives, the infant mortality rate (IMR) and the mortality rate for children under five are still quite high. In 1988/89, infant mortality rates were estimated to be 130 per 1000 live births. However, in 1992 the IMR decreased to 100 per 1,000 live births. Over the period of 1985 to 1989, the mortality for children under five decreased from 210 to 165 per 1,000.

Infant and child mortality in Zanzibar is higher than in mainland Tanzania (see Table 9.1).

The overall maternal mortality ratio is 314 deaths per 100,000 live births. The overall risk of dying from delivery is high. On average, the risk of death from maternal causes during the reproductive life-span is 1 in 40 (Garssen, 1992).

Table 9.1: Infant and Child Mortality Rates, 1994

	<i>Infant Mortality per 1000 live Births, 1992</i>	<i>Child Mortality</i>
Mainland	92	141
Zanzibar	100	165

Source: World Bank, 1994c; Garssen, 1992.

Infectious Diseases. Several studies indicate that most of the major health problems of infants, young children, and other vulnerable groups in Zanzibar are preventable. Major diseases affecting the population include malaria, schistosomiasis, intestinal parasites, and diarrhoeal diseases. According to the Household Survey on Diarrhoeal Diseases, Acute Respiratory Infections and Breastfeeding, malaria accounted for 38 percent of all hospital deaths, pneumonia accounted for approximately 10 percent, and diarrhoea accounted for about 4 percent (Jansen, 1992). Furthermore, malaria comprised 35 percent of all hospital diagnoses, pneumonia 7 percent, anaemia 6 percent, and diarrhoea and dysentery 4 percent. In 1991, 356 cases of HIV had been identified, of whom 228 had AIDS.

Utilization⁴

Twenty-eight percent of Zanzibaris indicated that they experienced an illness or injury during the month before the 1993/94 HRDS survey. Forty percent of the wealthiest households reported being ill, while only 13 percent of the poorest households reported being ill. Furthermore, those in the wealthiest 20 percent of households were about 40 percent more likely to seek care than those in the poorest 20 percent.

As in mainland Tanzania, women were slightly more likely than men to report that they had been sick (29 versus 26 percent, respectively). Sixty percent of both women and men who reported being ill sought care and used health services. However, only reporting of illness is shown, and not necessarily incidence of illness or injury. There is reason to believe that women have higher levels of morbidity due to malnutrition. Women are more likely than men to suffer from malnutrition because they have higher energy requirements as a result of heavy workloads. One study showed that many women in rural areas work 14 hours a day, 7 days a week. Their tasks included collection of firewood and water, agricultural production, and home and child care. In urban areas, women worked in the informal sector in order to contribute to household income. In the main, they performed labor-intensive activities requiring high levels of energy.

The high malnutrition rates in Zanzibar and on the mainland are compounded by high fertility. This leaves women particularly vulnerable to health problems associated with pregnancy, labor, and delivery.

Choice of Provider. Overall, three-quarters of those who sought care in Zanzibar went first to a government provider. All of those in the poorest 20 percent of households and 69 percent of those in the

⁴ The information in this and the next section on expenditures come from the HRDS conducted in Zanzibar in June, 1994. Most of the results are quite close to the overall average from the mainland survey.

richest 20 percent of households sought care at a government facility. Thirty-one percent of sick individuals in the richest 20 percent of households sought care at a private health facility.

For in- and outpatient care⁵, individuals in the poorest 20 percent of households only used government facilities, primarily dispensaries. Those in the richest 20 percent of households sought care at government dispensaries and hospitals, and private dispensaries. Those in the richest group were one-half as likely to seek care at a government dispensary as those in the poorest group (32 percent and 62 percent, respectively). Those in the richest 20 percent of households were slightly more likely than those in the poorest group to seek care at a government hospital (22 versus 19 percent), while those in the poorest group were more likely than those in the richest group to seek care at a government health center (19 and 15 percent, respectively).

The wealthier households consume a larger relative share of all services than do the poor. Overall, households in the top 40 percent of the welfare distribution used health services twice as often as those in the bottom 40 percent (52 and 25 percent, respectively). The services of the for-profit private sector were used solely by the richest 20 percent of households.

Mainland Comparison. According to the HRDS, a higher percentage of Zanzibaris reported being ill or injured in the last month than mainland individuals in 1993. Furthermore, sick people in Zanzibar used government health facilities more than sick people on the mainland. Of those who reported being ill or injured in Zanzibar, 78 percent sought care at government health facilities, while of mainland individuals who sought care, only 59 percent went to a government facility. Higher use of government facilities is due to the small number of NGO and private health facilities in Zanzibar.

Household Expenditures on Health Care

Households in Zanzibar spent about Tsh 10,787 per year on health services in 1993, comprising 1.2 percent of total expenditures. Rural households spent approximately Tsh 4,917 annually, while households in urban areas paid almost four times that amount (Tsh 18,189). Health spending comprised over three times as much of total expenditures in better-off households than in poor households (1.6 versus 0.5 percent, respectively).

On average, Zanzibaris spent Tsh 730 per short illness episode when health care was sought in 1993. Overall, urban households spent more for care than rural households (Tsh 1,118 and 378, respectively). Urban households paid considerably more for care at a dispensary than rural households (Tsh 1,493 and 484, respectively). Rural households were more likely to seek care at health centers, while only a tiny number of urban households sought care at health centers and did not incur any expenditures. Urban households were more likely to seek care at a hospital, while very few rural households sought care at hospitals.

Only sick individuals in the top 40 percent of the expenditure distribution sought care at nongovernmental dispensaries. These individuals paid almost fifteen times as much as those in the same

⁵ Due to the small number of sick individuals who received inpatient care, our analysis combines in- and out-patient services.

income group who sought care at government dispensaries.⁶

As on the mainland, the poorest households, who also tend to be in rural areas, spent relatively little for the government services nearest to them. Better-off households spent more per visit, in part because they were more likely to use non-governmental services. For the poorest households, the only costs incurred were transportation costs (Tsh 52). For the richest households, transportation costs only accounted for 10 percent of expenditures, while visit costs accounted for 23 percent, and drug costs accounted for 64 percent.

Mainland Comparison. Sick individuals in Zanzibar spent one-third less per illness episode than did mainland individuals. Zanzibaris spent almost one-half to two-thirds less on facility visits and transportation costs as those on the mainland (see Table 9.2).

Table 9.2: Expenditures per Illness Episode, 1993 (Tsh)

	<i>Visits</i>	<i>Transportation</i>	<i>Drugs</i>	<i>Total Expenditures</i>
Zanzibar	120	135	474	730
Mainland	209	331	578	1,118

Source: HRDS, 1993/94.

Structure of the Health Care System

The organization of Zanzibar's health care system is similar to that of the mainland. There are four types of medical facilities serving the islands in a pyramidal organizational structure. At the first level there were 116 primary health care units/dispensaries (PHCU) in 1994. PHCUs are similar to dispensaries on the mainland, and provide services at the community level. The average population per dispensary is about 5,000. Approximately ninety percent of all Zanzibari live within 5 km of a health unit. Four to five health workers, headed by a nurse or a medical assistant, provide a comprehensive package of preventive and curative services. Outreach activities, such as MCH and EPI, are also provided at this level. Unfortunately, about 60 percent of the dispensaries are in poor condition, and others are approaching a stage of irreparable damage. Many lack water, transport services, electricity and telephones. Box 9.3 reviews clients' perceptions of these facilities.

At the intermediate level in 1994 there were four 30-bed Primary Health Care Centers (PHCC or cottage hospitals), which are similar to health centers on the mainland. There are two in each of the rural areas of Unguja and Pemba. They provide more extensive medical treatment than is available at dispensaries. These centers provide an intermediate level for referral cases from PHCUs, particularly in areas far from the main town. However, due to their well-stocked drug supply, and the presence of medical assistants, people travel considerable distances to receive their first consultations at these facilities.

There are four general hospitals and five specialist hospitals that deal with leprosy, maternity, mental health, and TB. The hospital in Zanzibar Town acts as the referral hospital for specialized care for the two islands.

According to the HRDS, in 1993/94 the government provided approximately 78 percent of all

⁶ Expenditure estimates for the private health facilities are based on a small number of observations. The data are presented for illustrative purposes.

health services, while the private sector provided only 21 percent. Non-governmental organizations in Zanzibar do not play the important role they do on the mainland. Only five NGO facilities, which charge user fees, are known to exist. In addition, there are no village health workers in Zanzibar.

While health services in the public sector are currently provided primarily free of charge, as on the mainland, some user fees for certain services have been incorporated. The restriction of the right to private practice has recently been liberalized. However, there is strict government regulation of private and voluntary medical services on the islands.

FAMILY PLANNING

In the past there have been high fertility rates, as shown in the young age structure in Zanzibar.⁷ This suggests a dramatic increase in the size of the population in the most highly reproductive age groups over the next decade. According to the HRDS, 18.3 percent of the population were below age 5, and 29 percent of the population between the ages of 5 and 15 years old in 1993/94. Thus, 47 percent of the population was less than 15 years old at that time. If the total population continues to grow at the current rate of 3 percent per year, the population will double by the year 2017.

Total fertility rates in Zanzibar have declined slowly. Comparing the 1978 census and UNICEF and UNFPA 1988 and 1992 surveys, fertility appears to have declined at a rate of 0.5 percent per year (Garssen, 1992). The TFR was estimated at 8.6 in 1978, 8.2 in 1988, and 8.0 in 1992⁸.

High fertility rates, young childbearing, and close birth spacing have detrimental effects on the health of women and children in Zanzibar. According to a study in Pemba, about 6 percent of women age 14, and 19 percent of women age 16, experienced their first pregnancy (TKAP, 1991)⁹. In addition, among women aged 31 to 40 years, 15.1 percent had 10-12 deliveries, while among women aged 40 and over, 26 percent experienced 10-12 deliveries. In addition, approximately 26.5 percent of all births occurred less than 24 months after the previous birth (TDHS, 1991/92).

Utilization. In April 1993, 98 MCH/FP clinics were in operation (MOH, 1993). According to

Box 9.3: How Do Zanzibaris Perceive the Quality of the Health System?

In the HRDS, respondents were asked about the quality of the government dispensaries or health centers located nearest to their dwelling. They were asked about the drug availability, the trustworthiness and qualifications of doctors and nurses, the distance from their home to the facility, the cleanliness of the health clinic, and the personnel who help with community-wide interventions.

Respondents were most dissatisfied with the lack of availability of drugs, just as on the mainland. About 56 percent indicated that the drug availability in the government facilities was "very poor" or "poor," while only 10 percent thought the availability was "good" or "very good."

Over forty percent of consumers were satisfied with the proximity of the facility to home, the qualifications of the doctors and nurses, and the cleanliness of the facility.

⁷ In the family planning section, we used the 1991/1992 TDHS where possible. However, due to the small number of observations in the Zanzibar sample of the TDHS, we could not always reference it. Thus, other sources were included, such as the HRDS 1993/94, and the 1992 UNICEF survey.

⁸ According to the TDHS 1991/92, the total fertility rate was 6.4 children per woman. However, this rate should not be compared to the rates from the 1978 census and the UNICEF and UNFPA surveys.

⁹ All estimates from the TKAP study should not be compared to the TDHS 1991/92 data. They are presented for illustrative purposes.

the TDHS 1991/92, health workers were available to provide family planning services to 69 percent of the women in Zanzibar. Over 83 percent of women lived within 5 km of a facility providing family planning services.

As on the mainland, use of modern contraception is very low in Zanzibar and is increasing slowly. Only 17 percent of reproductive-age women in Zanzibar reported that they have used any method of birth control at some time (MOH, 1993).

However, according to the TDHS, only 7 percent of currently married reproductive-age women are currently using a modern method of birth control. Forty-one percent of those use birth control pills, 21 percent avail themselves of sterilization, and 15 percent receive injections. The remaining women are using IUDs and condoms (TDHS, 1991/92).

According to one study, urban and rural differences are striking. Only three percent of reproductive-age women in rural Unguja, and 3.6 percent of reproductive-age women in rural Pemba, are currently using family planning (Garssen, 1992). In Zanzibar Town, the rate of family planning users is 15.5 percent of reproductive-age women.

According to the TDHS 1991/92, almost one-third of currently married women wish to delay their next birth by one or two years, and another 15 percent wish to have no more children. In other words, a total of 45 percent of married women are considered to be potentially "in need" of family planning. Of these women, about 16 percent use a modern contraceptive method, leaving 84 percent of the "women in need" (or 38 percent of all currently married women), at potential risk of having an unwanted or mistimed pregnancy.

Choice of Provider. According to the HRDS, 95 percent of modern contraceptive users obtained birth control supplies from government facilities in 1993/94. Government hospitals and health clinics were the main providers of these services (37 and 41 percent, respectively). Nurses supplied methods and provided counseling to three-quarters of the women using modern methods.

Use of Antenatal Care. Approximately 99 percent of all pregnancies received antenatal care from a medical professional (TDHS, 1991/92). Care was provided most often by a trained nurse/midwife (64 percent) or a maternal and child health care aide (33 percent), while doctors only provided a small proportion of all antenatal care services (2 percent).

Place of Delivery. Approximately one-quarter of the births taking place in 1992/93 took place in government hospitals, 2 percent occurred in government health centers, and the rest were delivered in the home. Place of residence and education were correlated with place of delivery. Among urban women, 51 percent of deliveries took place in hospitals, while among rural women, only 14 percent did. Among women with at least some secondary education, 34 percent of deliveries occurred in a hospital, while among women with no education, only 12 percent did (HRDS, 1993/94).

Expenditures. The majority of women using contraceptives and receiving antenatal care did not incur expenditures. Of the very few who had expenditures, transportation made up 100 percent of total expenditures for family planning, and 90 percent of total expenditures for antenatal care (HRDS, 1993/94).

One-half of the women incurred expenditures for delivery services. Women spent, on average, Tsh 800 for delivery services in 1993. Transportation costs constituted 38 percent of total expenditures, while visits made up 38 percent and drugs comprised 23 percent.

Knowledge and Attitudes. About 96 percent of all reproductive-age women in Zanzibar indicated that they knew of at least one modern method to limit or space births. According to the TKAP study in Pemba, oral contraceptives (used by 69 percent of reproductive-age women) were the best known method, while injections were the next most commonly known method (37 percent). Approximately 16 percent of women knew about the IUD, and 16 percent were familiar with condoms. Only 3 percent of women were familiar with female sterilization. Knowledge about contraceptive sources was also high. About 93 percent of reproductive-age women knew where they could obtain a modern contraceptive method (TDHS, 1991/92).

Almost three-quarters of women thought that family planning messages on mass media were acceptable, and about the same figure (70 percent) of currently married, non-sterilized women said that they approved of family planning. A full fifty-one percent of the women believed that their husband disapproved of family planning.

Women's desired family size was clearly correlated with their education. Women between the ages of 15 and 29 with no formal education said that they wanted an average of 7.4 children. Women in the same age group with a primary education reported that they preferred an average of 6.1 children, while women with at least some secondary education wished to have an average of 5.5 children (Garssen, 1992). Since 1988, there has been a general decrease in the number of desired children borne by women who had at least some secondary education.

Mainland Comparison. The differential in desired family size with respect to education is much smaller in Zanzibar than on the mainland. Women on the mainland with no education reported that they preferred an average of 7.3 children, while women with at least some secondary education wished to have only an average of 4.3 children.

The effects of female education on contraceptive use, IMR, and place of birth delivery are more striking on the mainland. For example, according to the HRDS, among Zanzibari women with no education, only 1 percent currently use a modern method of birth control. Among those women with at least some secondary education, 13 percent were using a modern method¹⁰. On the mainland, only 6 percent of women with no education were using a modern contraceptive method. However, 31 percent of women with at least some secondary schooling were using a modern method (TDHS, 1991/92).

Overall, there is greater contraceptive use on the mainland than in Zanzibar. About 13 percent of currently married reproductive-age women on the mainland use a modern method of birth control, while only 7 percent of currently married reproductive-age women do in Zanzibar. Both men and women in Zanzibar are more likely to disapprove of family planning than their counterparts on the mainland (18 and 7 percent, respectively) (TDHS, 1991/92).

¹⁰ Due to the small number of women in Zanzibar using modern methods of contraception, the data is presented for illustrative purposes only.

NUTRITION

Child Nutritional Status. According to the TDHS 1991/92, among children under five years of age, 40 percent of children were moderately malnourished weight-for-age (also referred to as “underweight”), 48 percent height-for-age (also known as “stunted”), and 11 percent weight-for-height (also referred to as “wasted”). The prevalence of under-weight children has decreased from 51 percent in 1990 to approximately 40 percent in 1993 (Khatib, 1994). Thus, there is some indication of improvement in the nutritional status of children. As on the mainland, Zanzibar’s main child-nutrition problem appears to be stunting from longer-term, chronic undernutrition rather than wasting from short-term acute food deficits.

Child malnutrition indicators show that the health status of children in Zanzibar is worse than that of their counterparts on the mainland. There is a higher percentage of underweight children in Zanzibar than on the mainland (40 and 29 percent, respectively). The incidence of moderate wasting in Zanzibar is almost twice as high as the incidence on the mainland. Furthermore, only the incidence of underweight children in Mtwara region (48 percent) is higher than in Zanzibar.

Table 9.3: Indicators of Undernutrition, 1991/92
(figures refer to % of children under 5 years of age who are moderately malnourished)

	<i>Stunting</i>	<i>Wasting</i>	<i>Underweight</i>
Zanzibar	47.9	11.0	39.9
Mainland	46.7	5.6	28.8

Source: TDHS, 1991/92.

Maternal Nutritional Status. A measure of maternal nutritional status is the prevalence of low birth weights, or the proportion of infants born with a weight under 2500 grams. High incidence of low birth weight babies was most common among women less than 20 years of age (9.8 percent). Overall, the incidence of low birth weight babies was 6.9 percent (MOH, Nutrition Unit 1993).¹¹

The TDHS obtained information on the anthropometric indicators of mothers. These data showed that 6 percent of Zanzibari mothers were shorter than 145 cm and 12 percent had a mean BMI of less than 18.5 percent, indicating that they were likely to be malnourished.

The underlying causes of undernourishment in Zanzibar and on the mainland are heavy workloads, inadequate food consumption, low levels of education, short intervals of birth spacing, and nutrient depletion due to nurturing.

Breastfeeding. Breastfeeding is almost universal in Zanzibar, with about 99 percent of children under 5 being breastfed at least for a short period. Among last-born children, only 61 percent were breastfed within one hour of birth, and 97 percent were breastfed within one day of birth. The mean duration of breastfeeding is 21.2 months.

Although there is almost universal breastfeeding, infants are rarely exclusively breastfed in Zanzibar. However, the average duration of full breastfeeding is only 0.4 months (TDHS 1991/92). According to one study, the rate of exclusive breastfeeding was only 5 percent of children age 0 to 3 months, and another 38 percent of children in this age group were predominately breastfed (Jansen,

¹¹ The low birth weight figures are not comparable to the mainland birth weight estimates from the TDHS 1991/92.

1992). Another study conducted in North A and Micheweni districts indicated that one-half of infants aged 2 to 3 months were receiving supplementary foods (Khatib, 1994). This is dangerous because receiving these foods at such an early age carries considerable risk of infection, particularly diarrhea. In short, breastfeeding practices in Zanzibar share the same problems as on the mainland. Solid supplements are introduced too early, and supplementary foods are low in energy and inappropriate.

WATER AND SANITATION

Utilization of Improved Water Sources and Sanitation Facilities

Over one-half of households in Zanzibar use an improved source of water (i.e. a private water connection inside their home or yard, or a well with a pump or a public tap). There are large variations by urban and rural areas. The majority (86 percent) of households living in urban areas use an improved source of water, while only 30 percent of households in rural areas do (see Table 9.4). Approximately 9 percent of households living in urban areas of Zanzibar collect water from neighboring households, while only 4 percent collect water from open wells¹². For households living in rural areas, a full 70 percent collect water from open wells. Virtually no households rely on water vendors, tanker trucks, or surface water as their primary source.

Table 9.4: Household Water Source by Residence (%)

Type of Water Source	Urban	Rural	All
Improved Source of Water	86.0	30.3	55.1
Open Well	4.1	69.7	40.5
Neighbor	8.9	0.0	4.0
Water Vendor, Tanker Truck, Surface Water	0.0	0.0	0.0
Total	100	100	100

Source: HRDS, 1993/94.

Table 9.5 shows where households from different expenditure groups obtain their water. As expected, households in the highest expenditure quintile are much more likely to use an improved source of water, while those in the lowest expenditure quintile are more likely to depend on open wells as their primary source.

Table 9.5: Household Water Source, by Expenditure Quintile (%)

Water Source	Lowest 20%	Highest 20%	All
Improved Source of Water	28.0	75.0	55.1
Open Well	69.6	18.1	40.5
Neighbor	2.4	5.3	3.9
Water Vendor, Tanker Truck, Surface Water	0.0	0.0	0.0
Total	100	100	100

Source: HRDS, 1993/94.

Zanzibari households used private connections more than mainland households did in 1993/94 (42 versus 11 percent). Furthermore, approximately 50 percent of mainland households, as compared to about 40 percent of Zanzibari households, relied primarily on unimproved sources of water (open wells and surface water) (HRDS, 1993/94).

¹² Estimates on households collecting water from neighboring households and wells without pumps in urban areas are based on a small number of observations.

Sanitation Facilities.

According to the HRDS, approximately 30 percent of the Zanzibari population (primarily in rural areas) has no sanitation facility. The traditional pit latrine is the most common form of sanitation system in both urban and rural areas. About 61 percent of urban households, and 50 percent of rural households, use a pit latrine. A full 35 percent of urban households use flush toilets, while no households in rural areas do (see Table 9.6). Ninety-two percent of mainland households rely on pit latrines, and only 5.3 percent do not have a sanitation facility.

Table 9.6: Type of Sanitation Facility, by Residence (%)

<i>Sanitation Facility</i>	<i>Urban</i>	<i>Rural</i>	<i>All</i>
Own or Shared Flush Facility	34.8	0.0	15.7
Traditional Pit Latrine	60.8	49.5	54.5
No Facility, Bush, Pan, Bucket	4.4 ^a	50.5	29.8
Total	100	100	100

^a estimate based on very few observations.

Source: HRDS, 93/94.

Water Tariffs

Prior to independence, and for nearly two decades after independence, water charges of Tsh 3 to 4.5 were collected in Zanzibar. Rates charged in the years just following independence were adequate to cover all recurrent costs. In 1980, the Government of Zanzibar abolished domestic charges and took full responsibility for provision of water. The deterioration of water services occurred recently and coincided with the removal of water charges.

If user fees had been charged, the unit price should have been approximately Tsh 200 per cubic meter in 1990 (FINNIDA, 1991). At present, water charges are collected only from private and state-owned enterprises, restaurants, hotels, guest houses, and cafes. Approximately, Tsh 2.5 million was collected per year in 1990, which constitutes 10 percent of the DWD recurrent budget (FINNIDA, 1991). Due to inaccurate recordings in the customer register, the amount of uncollected revenue cannot be determined. However, it is clear that the current level of revenue is not sufficient for any cost recovery-based operation.

Willingness to Pay for Improved Water Supplies. According to one household survey in urban Zanzibar, the majority of people were willing to pay for reliable water supply services (FINNIDA, 1991). Urban residents in Pemba were more willing to pay, and willing to pay more, than those in Zanzibar Town. This is most likely due to greater water supply problems in Pemba. On average, households in Pemba were willing to pay Tsh 76 per month in 1990, while households in Unguja were willing to pay Tsh 87 per month. It is clear that households value improved water service and are willing to contribute substantial amounts of cash to improve the operation and maintenance of the urban water supply.

CONCLUSION

The mainland and Zanzibar share many problems in the social sectors. These include:

- low primary- and secondary-school enrollment rates, and high illiteracy rates;
- high IMR, child mortality, and malnutrition rates;
- low use of modern methods of birth control; and
- little access to, and use of, improved sources of water, and poor sanitation facilities.

Primary- and secondary-school enrollment rates are considerably higher in Zanzibar than on the mainland. Although enrollment rates are higher in Zanzibar, the illiteracy rates in Zanzibar are more than one-third higher than the illiteracy rates on the mainland.

The IMR, child mortality, and under-nutrition rates are also higher in Zanzibar than on the mainland. In addition, almost twice as many Zanzibari reported being ill or injured in the last month than on the mainland.

Although the knowledge of at least one modern method of birth control, and the knowledge of contraceptive sources among reproductive-age women, are both high in Zanzibar and on the mainland, the use of modern methods is quite low. Twice as many reproductive-age women on the mainland use a modern method of birth control as in Zanzibar.

The private sector and NGO facilities do not play as significant of a role in the provision of health and education services in Zanzibar as they do on the mainland. In view of the government's financial situation, they could play an instrumental role in the provision of these services in Zanzibar.

Almost one-half of the households on the mainland and in Zanzibar use unimproved sources of water. The use of unimproved water sources is slightly higher on the mainland than in Zanzibar. The quality of the water supply could be greatly improved in Zanzibar with the restoration of user fees. Studies have shown that households are willing to pay for improved water services. Finally, almost five times as many households in Zanzibar as on the mainland do not have a sanitation facility.

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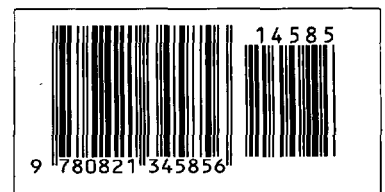
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ISBN 0-8218-4585-0