7 ~ Commersalisation of the Public Service in Zambia

7.1 Introduction

In Africa governments have been advised by multilateral financial institutions to privatise their public services, with this advice linked to policy conditionalities in many cases. While privatisation has proceeded apace in many other regions, in Africa it has progressed slowly. The performance of privatised public services has been mixed, at best. There have been some successes in increasing efficiency, but little evidence of a positive impact on improving equity and reducing poverty. With regard to poverty impact, it appears likely that the access of poor households to public services has worsened. The principal problem in much of Africa, however, is not so much inequitable access but lack of access (a more extreme form of inequity). This is often the case in rural areas, where a majority of the population is likely to live, and most frequently where most of the poor live.

While, privatisation of public services is designed to promote social objectives, they are geared to commercial objectives. A compromise approach followed by many governments in Africa has been to 'commercialise' public services instead of privatise them. This has taken many forms, including the introduction of user fees (such as for health services), linking the delivery of public services to cost recovery criteria (such as raising tariffs to full cost-reflective levels) or setting up independent commercially-run utilities. Sometimes, decentralisation of services has been part of a commercialisation reform package.

Even though tariffs have often been raised, cost recovery is usually only partial. Expecting cost recovery to finance rehabilitation or expansion of infrastructure has proved to be notably unrealistic. Even covering recurrent expenditures, including maintenance, has proved to be difficult. Rarely has commercialisation succeeded in expanding coverage of services. Rural areas remain largely without service. Poorer peri-urban areas or slums also see little improvement in access. Especially for services that rely on grids, such as electricity, new beneficiaries are likely to be urban and non-poor.

Efforts to make tariffs more progressive only affect the households that are connected to services. Such tariffs usually rely on some kind of metering. Most of the

poor are not connected nor metered. Identifying income-poor households is also problematic, especially if poverty is defined by 'inability to pay'. Sometimes the quality of housing is taken as a proxy for income level, and this approach has some practical advantages. But, a household's inability to pay implies that it should be subsidised by the higher tariffs paid by richer households, or by general public revenue.

For some services, such as the supply of water or health services, governments have a basic public responsibility to ensure access. Some consider that access to such services is a human right. For other compelling reasons, if not human rights, governments should guarantee a minimum level of service without cost. Assuming that difficulties in implementing a vertically equitable system of access and cost recovery could be resolved, there is still the fundamental problem of a lack of public financial resources. This is one of major justifications for instituting tariffs and raising them to cost-recovery levels. Not surprisingly, such cost-recovery objectives can run counter to equity objectives. Assuming that poor households do have access to a public service, they could be forced to shoulder a disproportionate burden of tariffs. But, this concern does not address the larger problem, namely, that many, if not most, poor households might have no access at all.

Public investment is necessary to expand infrastructure to provide service to these households, who often live in urban slums, small towns or rural areas. The fixed costs involved in expanding a grid-based service, such as electricity, can be quite high. Perhaps providing alternative forms of energy (such as improving the efficiency in the use of biomass) might be cost-effective for government, though not commercially viable. Decentralisation of services is often advocated by proponents of commercialisation as a means to hold down costs and/or more effectively raise revenue. But the record of such decentralisation has been poor. Due to lack of capacities at the local level, especially in local governments, decentralisation might be more expensive than centrally based provision of services. Supposedly, decentralisation of services should also give consumers greater voice and empower local communities. But, this usually depends on the social groups that control local government. Local elites might have an even stronger hold over local government than national elites do over central government.

Underlying the form of governance is the bedrock problem of the woeful lack of public resources to provide essential public services. This is likely to be a more severe problem at the local level. But it is also indeed a paramount problem at the national level. Methods of cost recovery can contribute to solving this problem but cannot be, by themselves, the full solution. In order to achieve broad and equitable coverage of services, mobilizing general public revenue is necessary. This would enhance the ability of government to provide subsidies to poorer households on the services that they receive and expand the coverage of services to which they have no access.

Official Development Assistance can play an important role, either through grants or concessional lending. In many low-income countries, dramatically up-scaling ODA will be necessary if they are to have a reasonable chance of reaching the internationally agreed MDG targets. Within the context of these general concerns, this chapter examines commercialisation in the water, energy and health sectors in Zambia.

7.2 Water and Sanitation[153]

Introduction

In the late 1980s, Zambia's public provision of water faced mounting problems: accounting and billing systems were inefficient and collection rates were low; late payments and non-payments were widespread; and, maintenance of water supply systems was poor and water quality low.

These issues jeopardised the financial sustainability of public water provision and failed to provide the excess returns with which to fortify and expand services, especially in rural areas, leading the government to consider commercialisation. The danger was that if commercialisation raised tariffs to achieve greater financial sustainability, water and sanitation would become unaffordable for many low-income households. Yet, the central government, strapped for tax revenue because of falling household incomes, thought that it had few other options, and initiated commercialisation in 1989.

The first step was the formation of the Water and Sewerage Company in Lusaka, an independent commercial utility owned by the municipality. The second such utility was formed in Chipata in 1992 and several other municipalities have adopted, since then, the same model. While leasing arrangements and partnerships with private providers were investigated, publicly owned, but commercially run, municipal utilities emerged as the preferred choice.

These municipal commercial utilities were later consolidated into ten regional utilities, called Water and Sanitation Companies (WSCs). These ten utilities nominally covered ninety percent of the population. Local non-commercial utilities covered the remaining ten percent. Previously, the central government had supplied the municipalities with water and sanitation, which they had distributed at subsidised rates. In the Copperbelt, the Zambia Consolidated Copper Mines (ZCCM) was responsible for water supply to the mines and households. Overall, rural areas had negligible access to piped water, so households relied mainly on wells and bore holes.

Efforts at Cost Recovery

After commercialisation, full cost recovery on the supply of water and sanitation became the governing principle. In the first stage, the aim was recovery of the costs for current operations and maintenance and in the second stage recovery of capital costs as well. However, available evidence from the late 1980s (before commercialisation) suggests that the provision of water and sanitation to urban areas could have become financially sustainable, at least on current operations, had the government made progress on billing, collection and water losses. Table 7.1 shows that operation and maintenance costs exceeded revenue ('actual collection') by only about twenty-two percent. However, the financial situation in rural areas, where coverage was very low, was far worse: operation and maintenance costs exceeded revenue by over three hundred percent.

Before commercialisation, the government had not aimed to cover all costs with revenue. All households were provided with water and sanitation at subsidised rates. The system also strove to be equitable: low-cost housing (a proxy for low-income households) received the highest subsidies. As a result of commercialisation, most of the Water and Sanitation Companies raised their tariffs and were able to cover their operational costs. But most have remained far from covering both operational and maintenance costs (OC&M). For example, Lusaka Water and Sewerage Company, which has existed the longest, still could cover only about three-quarters of its OC&M costs in 2002 (Table 7.2).

Several factors caused the financial losses of the Water and Sanitation Companies. A significant factor was water losses. 'Unaccounted-for Water' (UFW) represents about half of available supply, for example. Part of the problem was leakages, due to old infrastructure, missing taps or vandalism. Another part arose from lack of metering, the cost of which was too high for most customers to shoulder. Table 7.3 provides information on factors relevant to financial losses.

Table 7.3 also indicates that a second problem plagued WSCs, lack of revenue collection. This has been partly due to lack of administrative capacity with regard to creating customer databases and instituting

effective payment systems. There were no effective mechanisms to deal with non-payment, particularly by big users, for example, government institutions and privatised mines. But, non-payment by residential customers also occurred. This was most likely due to the rise in tariffs on water usage along with declining income levels. The Living Conditions Monitoring Survey of 1998 reported, for example, that eighty-six percent of low-cost housing residents, forty-one percent of medium-cost housing residents and twenty-five percent of high-cost housing residents were in arrears on water bills. In response, some of the commercial utilities resorted to disconnecting households, a drastic measure that gravely threatens access.

In order to achieve financial sustainability, the commercial utilities backed by government, donors and lenders concentrated on raising tariffs. However, they gave less attention to correcting water losses or improving administrative efficiency. Orthodox microeconomic theory suggests that cost recovery should be based on calculating the long-term marginal cost of providing a service, such as supplying water. In practice, however, this is difficult, particularly in an environment, such as Zambia's, where there is widespread lack of metering. So, the practical alternative is to calculate average cost.

But having to address issues of poverty and equity cannot be avoided. Since water is a necessity, low-income and poor households must be provided with affordable access. One approach is to institute a progressive system of 'rising block tariffs' (RBT), based on raising tariffs as water usage increases. The higher rates on households with high usage of water are used to cross-subsidise the lower rates on low-usage households. A variation on this approach is to provide a minimum block of free consumption of water. But the RBT approach is not practical in Zambia because many households do not have water meters. Hence, as a proxy for this approach, the government has used the cost of housing for determining progressive rates.

Differential flat rates were applied to three grades of housing: low-cost, medium-cost and high-cost. Table 7.4 provides the tariff rates for 1990 (before commercialisation) and 1994 (after) for various categories of water users. Table 7.5 shows similar data for selected WSCs in 2002. Table 7.5 also includes data on three different rates of water consumption: fifteen, twenty-five and fifty cubic meters per month per household. The government regulatory agency for the water sector considered twenty-five cubic meters to be minimally adequate for households. The data in the table show that the Lusaka WSC had the most progressive rate structure for households. A close examination of the data in Table 7.5 compared to that in Table 7.4 also underscores that the flat rates for low-cost housing have increased the most since 1990.

Access to Water and Sanitation

One of the most important barometers of the success of commercialisation is the affordability of access to water. A critical issue is whether low-income households can have continued access. A general rule is that water bills should not constitute more than five to six percent of monthly household income. Based on a six percent benchmark, Table 7.6 demonstrates that fifty-nine percent of households in Lusaka in 1998 would have had problems paying their water bills had they been charged the rates for low-cost housing. If a five percent benchmark were used, seventy-two percent of households could not afford their bills. Alternatively, if we calculate based on the cost of a threshold of twenty-five cubic meters of water consumption per household per month, then forty-one percent of all households would have had difficulty in paying their bills.

Access to water and sanitation was much less prevalent in rural areas than in urban, though rural access improved from 1992 to 1996. For example, the proportion of the

rural population with access to safe drinking water rose from thirty-one percent to forty-two, and the proportion with access to sanitation from forty-six to fifty-seven (Table 7.7). Between 1996 and 2001/2, there was no progress on either water or sanitation. Urban-rural differentials were notable. In urban areas in 2001/2, about ninety percent of the population had access to 'safe drinking water', whereas only slightly over forty percent of the rural population did. Similarly, while ninety-five percent of the urban population had access to sanitation in 2001/2, this was the case for only fifty-seven percent of the rural population. While there have been increases in access in rural areas, access decreased in some urban areas. In 1992, over fifty-five percent of urban households had water piped into their residence, but by 2001-2002 only about forty percent did, a reduction of almost one quarter. These households switched to public taps or wells and boreholes.

Service coverage provided to the urban population by the ten commercial Water and Sanitation Companies remained inadequate. While the WSCs in the Copperbelt provided acceptable levels of provision of water, the others performed decidedly worse. Two of the WSCs provided only thirty percent service coverage for water (Table 7.8). The coverage for sanitation was lower: on average, the WSCs had only thirty-two percent coverage. The Western WSC provided only one percent coverage for sanitation, and the AHC-MMS was the only provider close to three-quarters coverage.

These coverage statistics overstate provision, because services were not provided on a twenty-four hour basis, with the exception of the Chipata WSC. The national average was sixteen hours per day in 2002, with two WSCs operating the service for roughly twelve (Table 7.8). One of the major challenges for the provision of water and sanitation to low-income households is to cover peri-urban areas. In Zambia, about sixty percent of the population lived in shantytowns. Communal taps and boreholes, financed by external donors and NGOs, provided most water in these areas. For sanitation, households relied on septic tanks, pit latrines and similar methods.

Conclusions and Recommendations

The record of commercialisation of the water sector in Zambia has been mixed. There have been some gains in efficiency. But, increases in tariffs had an adverse impact on access, especially in urban areas. Where access increased, as in rural areas, this was due more to financing by donors or government than by commercial utilities. Government regulation of the sector, though improving, remains weak. The government's regulatory body could encourage commercial utilities to expand their coverage in peri-urban areas, but has no enforcement powers to oblige them do so.

The effects of commercialisation on the workforce were deplorable. Many workers were retrenched, and the number of casual workers rose. In most cases of retrenchment, the government did not pay severance packages, which by law it was obligated to do. In general, the impact of commercialisation on public workers was adverse. This problem received little attention, as primary focus was on consumers.

There has been excessive emphasis on 'tariff rationalisation', with less attention to reducing inefficiencies, such as 'unaccounted-for water' and lack of tariff collection. In addition, the tariff structure was not very progressive. After 1992, flat rate tariffs for households in low-cost housing increased most. Given widespread poverty, the government could consider providing a minimum amount of water without charge. Such a service is critical for basic human development and should be an obligation of any government. Above this minimum level, the government could strengthen the progressive structure of tariffs.

Commercialisation did not lead to greater capital investment, but rather a significant decline. As a result, in some municipalities, including Lusaka, infrastruc-

ture badly needed rehabilitation. While commercial utilities could improve revenue collection, more financing for investment will have to come from government and external agencies. Many of the commercial utilities began with liabilities and did not receive new infusions of public capital in order to rehabilitate their infrastructure. The Chipata WSC, which performed well, was an exception. It carried over no debt from previous operations, enjoyed an injection of new public capital, and had all its connections metered.

This example illustrates that if a government chooses commercialisation of service provision, it still has an obligation to provide financing for capital investment. Also, it will still have an obligation to regulate commercial utilities in order to ensure that lower-income households are not deprived of vital services. Government incentives, such as loan guarantees, will still have to be provided to induce commercial utilities to expand coverage to under-served areas and social groups. Given the limits on government capacities in many poor developing countries, it is wiser to maintain government ownership of utilities and oblige them to make their operations more cost-effective by applying commercial criteria of assessment.

7.3 Energy Sector[154]

Zambia's National Energy Policy

In 1994, Zambia developed its first National Energy Policy. The immediate objectives of this policy were to commercialise the public provider, Zambia Electricity Supply Corporation (ZESCO), privatise the distribution function of ZESCO and allow the entry of private providers into the sector. The main emphasis was on instituting energy pricing that would promote an efficient allocation of resources. This invo-lved allocating costs among consumers according to the burden that their use of energy imposed on the delivery system. The guiding principle was to base prices on long-term marginal costs. At the same time, this drive towards commercialisation was mitigated by a stated policy of providing a minimum level of service to persons who were unable to afford the full cost. The contradiction between the two objectives of affordability of tariffs and expansion of service remains an issue today.

Zambia has considerable potential in hydro-electric power. While it has an installed capacity of 1,700 MW, its potential is six thousand. Thus, if financing were available, it could substantially expand its capacity and export electricity to the Southern African Development Community, where electricity shortfalls are projected for 2007 onwards. But, the most pressing needs for electrification are in rural areas. In 2003, legislation was enacted to set up the Rural Electrification Authority in order to develop plans to extend the rural electricity network. Rural electrification projects were already supposed to be funded from a seven percent levy charged on consumer bills but the revenue raised so far has been woefully inadequate. The Poverty Reduction Strategy Paper, adopted in 2002, re-emphasised the importance of rural electrification. In general, it recognised the need to rehabilitate the existing capacity of the energy grid, substantially expand its capacity and implement targeted interventions to improve access.

Despite the adoption of these policy documents, access to electricity in rural areas remains abysmally low. In rural areas in 1998, only one to two percent of the population had access to electricity for cooking or lighting (Table 7.9). By contrast, thirty-nine to forty-eight percent of the urban population had such access. Moreover, while access to electricity had expanded in urban areas from 1991 to 1998, it expanded hardly at all in rural areas.

Statistics for total household electricity consumption confirm the overall increase in access during the 1990s. This has been limited, however, to urban areas. Calculations, based on statistics for aggre-

gate household consumption and average household size, suggest that there were 57,000 new household connections between 1990 and 1995. This translates into a yearly average increase of 11,400. However, this slowed to 3,800 new household connections per year between 1996 and 2000. So, commercialisation of the power sector in Zambia has not led to a more rapid expansion of the electricity network. The lack of progress is most pronounced, however, in rural areas.

Performance of the Energy Sector

In 2004, the Zambia Electricity Supply Corporation had exclusive rights to electricity generation, transmission and distribution, with one exception, the Copperbelt Energy Corporation, which provides electricity to the Zambia Consolidated Copper Mines. ZESCO accounts for over ninety percent of total generating capacity, i.e., 1,638 MW in 2004. However, data on two of its largest hydro plants, at Kafue Gorge and Victoria Falls, illustrate that they typically operate below full capacity (Table 7.10). 'Plant Availability', the period in a year during which full energy capacity is useable, averaged eighty-six percent for Kafue Gorge between 1999 and 2003 while it averaged only about seventy-one percent for Victoria Falls. The industry norms are over ninety percent availability.

Transmission and distribution losses are significant problems in the energy sector in Zambia. For example, distribution losses between 1999 and 2003 were about one fifth higher than in the previous five years despite the efforts at commercialisation and a focus on minimizing such losses. An aging infrastructure is part of the problem. Often, commercial and industrial users have to resort to stand-by diesel generators, which are more expensive, in order to ensure continuous power. Illegal connections and vandalism are also problems that contribute to energy losses.

Lack of operational efficiency was highlighted as ZESCO needed to generate financial surpluses in order to cover maintenance and support the expansion of its network. Either it must improve its level of efficiency, increase tariffs or be subsidised. The broader problem was that many low-income households, particularly in rural areas, do not have access to electricity. Large-scale investment in network expansion is critical. ZESCO has incurred high and rising operating costs. Together with depreciation expenses, this led to negative net operating income. Thus, ZESCO's core activity did not perform well. In 2004, for example, net operating income was a negative 7.5 percent (Table 7.11).

Some point to the share of labour costs in total operating expenses, about sixty percent in 2004, as evidence of ZESCO's inefficiency. But, its labour productivity appears to be relatively high by African standards. One measure of such productivity is energy production per employees and, with the exception of a dip in 2003, this measure rose after 1999. Zambia's performance on this measure was exceeded only by South Africa and Namibia among the countries of the Southern Africa Development Community (SADC).[155] A second measure of labour productivity, the number of customers per employee, exhibited a similar rising trend, increasing steadily from fifty in 2000 to eighty in 2003.

The Tariff Structure

One of the objectives of commercialisation of the power sector in Zambia was to introduce cost-reflective tariffs, as a means to eventually induce private investment in the sector and expand coverage. This cost would have to incorporate the investment necessary to expand the sector's capacity. However, cost reflective tariffs were not likely to be affordable for a significant proportion of the Zambian population. Hence, there was an inherent contradiction between the two objectives, that is, Cost-reflective and affordable tariffs. Resolving this contradiction would involve devising a transparent system of subsidies to ensure

broad access to electricity. It would involve identifying how to mobilise additional public resources, domestically or externally, to finance expanded capacity.

There were two broad categories of consumers, mining and non-mining, for which electricity needed to be provided in Zambia. The copper mining industry consumed over half of the total electricity in the country, but its tariffs were not subject to regulatory oversight. For non-mining consumers, although tariffs rose, they remained below the level necessary for cost recovery. ZESCO regarded this level to be four to five US cents per KWh. Table 7.12 shows the tariff structure for unmetered and metered residential consumers. The average Zambian residential consumer used over 700 kWh and thus would pay three US cents per kWh. Those consumers that used less than this threshold benefited from the tariff structure, paying either 1.3 US cents or 1.8. Unmetered consumers, which were subject to monthly charges, benefit even more.

Outside of the mining sector, commercial consumers of electricity essentially subsidised residential consumers whose average tariff for 2003/2004 was 1.01 US cents per kWh while that for commercial consumers 2.6 US cents. In 2003, while residential customers used sixty-eight percent of total energy (not including energy for mining), they contributed thirty-eight percent of total revenue. Those residential customers in rural areas that received ZESCO electricity benefited from subsidies, but they account for a very small share of total energy consumption, two tenths of a percent. Because they relied on more expensive off-grid diesel generators, these customers paid only fifteen percent of the total cost of supplying them with electricity.

For the mining sector, ZESCO generated electricity for the Copperbelt Energy Corporation (CEC), a private company that then transmitted and distributed it to the mining areas. A fifteen year agreement between ZESCO and CEC, established when the mines were privatised, determined the tariff structure for the latter. While CEC paid ZESCO 2.1 US cents per kWh for the electricity that the latter generated, CEC charged its customers 3.0 US cents. In accordance with the agreement, if ZESCO invested in expanding its generating capacity, none of this expense could be passed on to CEC. The bulk of CEC's business was with the mines. It avoided providing electricity to residential customers because this would be less profitable. Thus, compared to ZESCO's provision of electricity to non-mining customers, the CEC was profitable. For 2002, its net operating income was eighty-four percent, and for 2003 it was seventy-seven percent. By contrast, ZESCO's net operating income was negative 4.6 percent in 2002 and negative 3.6 percent in 2003. In 2003 the total operating income of ZESCO was US$135 million while for CEC it was almost as high, at US$115 million.

Conclusions and Recommendations

The energy sector in Zambia is plagued by several problems. Electricity supplies only about eleven percent of the total energy consumption in the country. The rural population is virtually without access to electricity: only two percent of rural households have access. Yet there were no plans to expand electricity in rural areas, with the Rural Electrification Authority formed only in 2004.

Half of the transmission and distribution of electricity in Zambia was privatised, namely, taken over by the privately owned Copperbelt Energy Corporation. While this privatisation and the associated agreement between CEC and ZESCO guaranteed the supply of electricity to the mines at relatively low and stable tariffs, non-mining customers received little direct benefit. While CEC was a profitable company, ZESCO was not. Moreover, ZESCO was constrained in raising revenue because it could not raise tariffs for half of the energy

consumed in the country. Thus, it had limited ability to use pricing to cover the capital costs of expanding its grid.

Another constraint on raising tariffs is that many of ZESCO's residential customers could not afford higher tariffs. Superficial evidence suggests that commercial customers subsidised residential customers and higher-income residential customers (proxied by their greater electricity consumption) subsidised lower-income ones. It remains that less than half of urban households had access to electricity. While existing tariffs should be made more progressive, expansion of access should take priority over cross-subsidisation of existing customers.

Higher tariffs, however, was not the primary problem facing many potential customers who lived in informal urban settlements or rural areas; it was access. Expanding the grid and providing other cheaper forms of energy are the only solutions to this problem. Over two-thirds of the energy needs of households in Zambia were met by firewood. So, expanding the consumption of renewable energy sources is an option that should command greater attention.

For expansion of the grid, financing for extensive public investment in generation, transmission and distribution is necessary. ZESCO was forced to borrow from international banks in order to rehabilitate its existing capacity. Expanding this capacity would involve even more borrowing. The immediate answer is to seek greater international concessional lending and supportive grant financing for expanding the provision of energy. Such an objective should be incorporated, as an essential component, into Zambia's MDG-based Poverty Reduction Strategy. Energy services are critical to achievement of many of the MDG targets. For the longer term, the public sector will have to raise additional domestic resources to finance public investment in the energy sector. The government will need to use general revenues to cover a significant proportion of energy-related public investment, instead of relying on raising tariffs to levels that can cover both recurrent and capital costs. Such cost-reflective tariffs would run counter to the equity objectives of providing broad-based affordable service.

7.4 Health Sector[156]

Introduction

The government of Zambia initiated significant reforms in the health sector in 1992. It created a new, more decentralised system of health institutions, including a Central Board of Health, District Health Boards and Neighbourhood Health Committees. It also mandated that each health facility, particularly in rural areas, deliver an Essential Health Service Package. It introduced a new financial management system based, in part, on the introduction of 'user fees' (usually designated as 'cost sharing').

Decentralisation of the health system was supposed to increase community participation and make it more effective in delivering services. The Essential Health Service Package was designed to ensure a minimum level of service for the whole population, i.e., primary health care services for sexually transmitted diseases, child health, waterborne diseases, malaria, TB and reproductive health.

User fees have been the most controversial of the changes. They have been designed to raise more revenue within a health care system in which government revenues have been in sharp decline. A portion of these revenues has been earmarked for performance bonuses in order to enhance the motivation and accountability of health workers. Payment for services is also supposed to strengthen the demands of patients for better service.

In order to make the application of user fees more equitable, certain groups of the population have been exempted from them. Criteria have been based on age (e.g.,

children under five years of age and adults over sixty-five years of age), type of disease (e.g., diabetes, tuberculosis, STDs and epidemics, such as cholera) and ability to pay. Usually, fees have to be paid in cash although in-kind payments have sometimes been accepted.

Health Trends and Resources

The health sector changes were introduced in 1992 in order to counteract the deterioration in the population's health that was evident in the 1980s. However, although deterioration in health conditions slowed after 1992, reversing this negative trend has not been common. Where progress has occurred, it has been marginal. The under-five mortality rate has continued to rise, primarily as a result of a rise in mortality among children in rural areas (Table 7.13). Life expectancy has improved marginally in the last ten years but still stands below the level achieved in 1980. Between 1996 and 2000/2001, maternal mortality rose from 649 per one hundred thousand live births to 729. The rate of incidence of malaria increased from twenty-six percent of the population in 1990 to thirty-eight percent in 2000. And the incidence of HIV rose to sixteen percent in 2000/2001, one of the highest in Africa.

While the main provider of health in Zambia is the government, its facilities are disproportionately located in urban areas. The chief providers of health care in rural areas are church-related hospitals and health centres. The private sector has a limited role in health provision in the country; its activities confined to basic or primary health care. Part of the reason for the limited private role is the expenses involved in starting a private facility and their low profits. Thus, these facilities are heavily concentrated in the richer urban areas of the country, e.g., the Copperbelt and Lusaka.

Related to the health sector changes, expenditures on health rose appreciably during the 1990s. As a percentage of GDP, they rose from 3.3 percent in 1990 to 6.9 percent in 1998 (Table 7.14). In per capita terms, they rose from US$ 15.9 to US$ 23.3. But government health expenditures per capita dropped during this period from US$ 5.9 to US$ 2.2 (constant 1995 prices). From 1990 to 2002, government's share of total health spending declined from 45 percent to about 23 percent (Table 7.15). At the same time, the importance of donor funding rose dramatically, from only 6 percent in 1990 to almost 42 percent in 2002.

The share borne by households also rose, from twenty-one percent to 31.5 percenta sharp fifty percent increase (Table 7.15). This was mainly due to rising drug expenditures and greater resort to private health facilities. As a share of total household health expenditures, drugs rose from fifty to over seventy percent during this period. In public health institutions, patients are supposed to receive prescribed drugs free but often they are in short supply. Consequently, the patients have to buy the drugs from private pharmacies. In health facilities in richer urban areas, such as Lusaka and Livingstone, user fees have accounted for a higher share of total revenue. In rural areas and poorer areas, there has been a greater reliance on government grants and donor funds.

Access and Community Participation

One effect of the system of user fees is to motivate health clinics to refer patients to hospitals after they have collected their own fees. In this way, they can pass on the cost of treatment to the hospitals. This is one of the reasons that the health care system has not become more efficient. Hospitals are still involved in primary health care, especially in urban areas and richer areas. A major reason is that they are perceived to provide better quality service. As a result, when patients now skip a primary health care centre and go directly to hospitals for treatment, they are charged a 'bypass fee'. Hence, hospitals have come to rely more heavily on user fees than primary health facilities. Patients are willing to pay such

fees because they avoid the waiting involved in referrals from primary health facilities. So, decentralisation of health care has not appreciably improved the System's effectiveness.

Decentralisation of the health care system in Zambia was also supposed to enhance community participation in decision-making with regard to local health facilities. However, such participation remains weak. For example, in 2000/2001, only five percent of women reported ever having attended a meeting of a Neighbourhood Health Committee (Table 7.16) and less than one percent of men had attended a meeting. Interviews of community members indicate that they remain mistrustful or wary of such initiatives. Not infrequently, their main participation involves providing free labour to health projects.

Attendance at health facilities has dropped after the new health policy, declining by thirty-five percent for health centres and twenty-five for hospitals. Part of the reason was that the burden of the total costs of access to health care, including transport costs and user fees, was regressive. Residents in rural areas and low-income urban areas paid a higher share of their income. One estimate in 2002 suggested that residents in rural areas spent fifteen percent of their monthly income on health care, while residents in low-cost housing in urban areas paid nine percent, and residents of high-cost housing in urban areas only four percent.

Methods for providing exemptions for user fees were problematic. Exemptions based on age worked well as did exemptions based on disease. But exemptions based on inability to pay did not function effectively. Such decisions are left up to the discretion of community health centres. Not only were some people denied access because of their inability to pay, others declined to visit a health centre because they lacked the money to pay for care. A 2001 survey found that about one fifth of all prospective patients, both in rural and urban areas, were denied access to health care (Table 7.17). In urban areas, one third of the population stated that they could not pay for medicines. Accessing health care was a significant problem for women, particularly in rural areas. About seventy-two percent of women in rural areas reported lack of money for treatment or transport to a health facility. Almost sixty percent cited the distance from a facility as a problem in securing access to health care.

Human Resource Problems

Lack of staff in the health care system in Zambia is a formidable problem. Retaining medical staff, especially doctors and nurses, has been difficult, and assigning them to rural areas was even more problematic. Most clinical staff was concentrated in Lusaka and the Copperbelt, the richer areas of the country. In addition, the policy measure to 'de-link' medical staff from the civil service severely aggravated an already difficult staff situation.

The de-linking, which began in 1997, was intended to give greater powers to health districts in bargaining with staff and enforcing discipline. It was also intended to introduce greater labour flexibility; i.e., more flexibility in hiring and firing of staff. When staff was assigned to locally managed employment systems, entitlements to pensions and other Benefits were jeopardised. Related to this problem, the union for medical staff lobbied for severance pay, but the government was unable or unwilling to bear this a financial responsibility.

As a result, the government abandoned the change in labour policy in 2004. But one third of medical staff had been assigned to local health systems. Consequently, the public health care system in 2005 had a dual employment system, with significant disparities in pay and benefits. A voluntary redundancy programme for medical staff, supported by external donors, made matters worse. This resulted in a loss of 1,400 professional health workers. An additional problem undercutting retention of staff was low salaries. Doctors and nurses emigrated

to Botswana, Namibia and South Africa, where salaries were higher. As a consequence, out of the 836 Zambian doctors who graduated between 1992 and 1997, only 239, or less than thirty percent, remained in public service at the end of the period. Expatriate doctors from China and Cuba have been recruited to fill the vacancies. Even though this has not overcome the decline in the number of doctors per one hundred thousand people. While this ratio had been fourteen in 1985, it dropped to seven by 1999.

Conclusions and Recommendations

Decentralisation of the health care system in Zambia, and its accompanying quasi-commercial reliance on cost recovery, has had a mixed record of success. According to many basic indicators, health has continued to decline despite the reforms. The lack of financial and human resources has been a major obstacle to improving the country's health care system. An overriding problem has been the cutback in government resources for healthcare. This has forced health facilities to rely more on donor funding or cost recovery.

De-linking health care workers from the civil service, in the name of promoting greater labour flexibility, compounded the problem of a decline in financing. Clearly, if Zambia is to retain qualified personnel, it needs to provide adequate incentives, such as better salaries and conditions of service. De-linking personnel from the civil service appears to have been a major mistake and has weakened the whole system. Retaining health workers in rural areas is a particularly serious problem. One option is to issue medical licenses to new graduates after they have served for a specified period of time in rural areas. Those regular personnel that serve in rural areas should be provided with assurances that they will be subsequently re-assigned to more attractive locations.

In addition to the deterioration of health care's availability, user fees and distance to facilities adversely affected demand. The policy of charging fees for basic health care should be re-considered. Much of the impact on household incomes appears regressive. The available evidence suggests that the utilisation of health facilities has declined because of user fees. Moreover, the system of granting exemptions from fees because of inability to pay for services has not proved to be effective. Government should re-assume responsibility for providing, free of charge, a minimum level of primary health care for the whole population. Financing this basic level of service must come from general revenue.

The problem that many patients had in traversing long distances to reach a health facility can be addressed only through substantially increasing public investment in more facilities. This would rely on public resources, either through mobilizing more government revenue or accessing more external resources.

Most public health facilities were located in urban areas, and rural areas were served mainly by church-related facilities. Sector reforms had little impact on health conditions in rural areas. The methods used for decentralizing health care should be re-examined, for they do not appear successful in empowering patients or eliciting more community participation. Further, after commercialisation more of the costs of health care fell into administrative expenditures. By some measures, decentralizing the system led to greater inefficiencies.

153 This section is based on the background paper, "Commercialisation of Water Supply in Zambia" by Hulya Dagdeviren, which was written for the UNDP global project "Privatisation and Poverty Reduction".

154 This section is based on the paper "Impact of Power Sector Reforms in Zambia on Performance and Delivery", written by Jorry M. Mwenechanya for the UNDP global project "Privatisation and Poverty Reduction".

155 See Mwenechanya (2005), who used data from Southern African Power Pool Annual Report 2004.

156 This section is based on the paper "An Assessment of the Health Sector Reforms in Zambia", written by Hulya Dagdeviren for the UNDP global project "Privatisation and Poverty Reduction".

Table 7.1. Cost recovery in water and sanitation schemes, 1987

Recovery measures	National	Urban	Rural
Actual billing (% of billable)	71.2	71.0	75.5
Actual collection (% of actual billing)	68.7	68.7	68.9
O + M payment (% of actual collection)	130.7	121.6	327.3

Source: Dagdeviren 2005b, based on Coopers & Lybrand (1988)
Note: O + M is Operation plus maintenance costs

Table 7.2. Cost recovery before and after commercialisation in water and sanitation

Name of commercial utility	2002 Collection as % of OC*	2002 Collection as % of OC**	Collection/ (OC & M)
Lusaka WSC	265.4	138.7	76
Southern ESC	259.1	124.7	68
Western WSC	356.6	155.5	81
Northwestern WSC	189.7	79.5	49
Chipata WSC	372.8	113.6	53
Copperbelt			
AHC-MMS	140.0	100.9	55
Nkana	132.0	94.1	56
Kafubu	125.7	76.1	45
Mulonga	132.9	94.4	50

Source: Dagdeviren 2005b. 1992 numbers are from Department of Water Affairs, Ministry of Energy and Water Development. 2002 figures are estimated by using data from NWASCO (2003).
* excludes salaries, including power, chemicals, transport and others
** includes wages and salaries

Table 7.3. Selected performance indicators on cost recovery, 2002

Water & Sanitation authority	UFW (%)	Revenue collection as (%) of billing	Metering ratio (%)
Lusaka	58	66	32
AHC-MMS	43	75	1
Nkana	50	52	55
Kafubu	59	30	6
Mulonga	52	39	20
Southern	50	48	12
Western	51	73	28
Northwestern	49	108	1
Chipata	27	47	100

Source: Dagdeviren 2005b based on NWASCO, 2003.
UFW: Unaccounted-for water.

Table 7.4. National water tariffs in the 1990s (monthly flat rates)

	Tariffs (Kw)		Tariffs (US$)	
	1990	1994	1990	1994
High cost housing	60	6300	3-1.5	15.4
Medium cost housing	60	3500	3-1.5	8.8
Low cost housing	20	2000	1-0.5	5
Public taps	6	500	0.3-0.1	1.3
Parastatals, industrial, & commercial consumers	400	20000	20-10	50
Reconnection charge	1000	3000	50-100	60
Exchange rate ($/Kw)	-	-	20-40	400

Source: Dagdeviren 2005b, based on Department of Water Affairs, Ministry of Energy and Water Development

Table 7.5. Tariffs of selected water and sanitation authorities, 2002

Amount in Kwacha	Lusaka	Mulonga	Western	AHC-MMS	Southern	Nkana	Chipata
First rate							
Public taps	2500	12000	3000	-	3500	3500	-
Low cost	16960	18000	20500	20900	8000	12000	32000
Medium cost	27160	23000	35500	33600	12000	20000	66600
High cost	95520	35000	35500	44980	21000	36000	66000
Charge for 15M^3	7200	6000	8500	10200	10500	7200	20125
Charge for 25M^3	13920	10000	16900	16730	18000	21600	37375
Charge for 50M^3	29920	26000	14200	22250	27500	43350	89700
Sewerage (% of water bill)		No charge	5000fix	40%		40%	50%
Tariffs in US$ (exchange rate K4500 in 2002)							
Public taps	0.6	2.7	0.7	-	0.8	0.8	-
Low cost	3.8	4.0	4.6	4.6	1.8	2.7	7.1
Medium cost	6.0	5.1	7.9	7.5	2.7	4.4	14.8
High cost	21.2	7.8	7.9	10.0	4.7	8.0	14.7
Charge for 15M^3	1.6	1.3	1.9	2.3	2.3	1.6	4.5
Charge for 25M^3	3.1	2.2	3.8	3.7	4.0	4.8	8.3
Charge for 50M^3	6.6	5.8	3.2	4.9	6.1	9.6	19.9

Source: Dagdeviren 2005b, based on NWASCO

Table 7.6. Approximate rates of affordability of water charges in Lusaka 1998*

Monthly household income	% of HH in each income category	Ratio of low cost water charges to maximum income	Cost of 25M^3 to income (%)
less than 15000	3	103.7	70
15001 - 30000	2	51.9	35
30001 - 750000	9	20.7	14
75001 - 150000	27	10.4	7
150001 - 225000	18	6.9	5
225001 - 300000	12	5.2	4
300000 +	28	-	
Mean income: 417280	na	3.7	2.5

Source: Dagdeviren 2005b, based on estimates using LWSC tariffs for 1998 which were obtained from NWASCO, distribution for 1998, from NWASCO, and distribution of household income from the Living conditions Monitoring Survey 1998.
*Note that these estimates are valid only for water charges. The bill of households connected to the main sewerage network of the town includes a separate sanitation charge that varies from one utility to another. The most common practice is to charge a fixed proportion of the water bill (varying between thirty-five and fifty percent) over and above the charge for water.

Table 7.7. Sources of drinking water and access to sanitation (Percent of population)

	Urban			Rural			Zambia
	1992	1996	2001-2	1992	1996	2001-2	2001-2
Access to safe drinking water*	93	88	90.2	31	42	41.4	51.4
Piped into residence	55.5	46.7	42.1	3.3	1.7	2.4	15.9
Public tap	33.6	33.9	37.2	7.2	5.3	4.2	15.8
Wells & b. Holes	9	15.2	15.8	40.6	66.9	64.2	47.7
River, ponds, lakes etc	1.7	1.3	1.6	48.4	25.5	28.8	19.6
Other	0	2.4	2.3	0.2	0.4	0.4	0.5
Access to Sanitation	96	95	95	46	57	57	65

Source: Dagdeviren 2005b based on Zambia Demographic and Health Surveys, 1992, 1996, 2001-2

*Excludes water from unprotected wells, river, spring and stream, ponds and lakes.

Table 7.8. Service coverage by WSCs in 2002 (percentage of the population in the service area)

	Water	Sanitation	Hours of supply
Lusaka WSC	70	33	15
Copperbelt			
AHC-MMS	96	74	17.4
Nkana	92	54	16.5
Kafubu	84	50	15.3
Mulonga	91	8	16
Southern WSC	54	50	12.1
Western WSC	30	1	19.3
Northwestern WSC	31	2	12
Chipata WSC	71	12	24
Average	73w	32w	16.4s

Source: Dagdeviren 2005b, based on NWASCO

Table 7.9. Households access to electricity (%)

	1991		1996		1998	
	Cooking	Lighting	Cooking	Lighting	Cooking	Lighting
All Zambia	11	18	13	17	15	19
Rural	0	2	1	2	1	2
Urban	26	39	36	45	39	48
Province						
Central	10	17	12	18	16	20
Copperbelt	20	35	29	35	33	14
Eastern	3	5	2	4	1	2
Luapula	2	8	3	5	2	6
Lusaka	33	40	37	44	36	42
Northern	4	10	1	3	4	16
N/Wstern	6	16	3	5	1	3
Southern	6	13	5	8	12	16
Western	4	8	2	4	2	3

Source: Mwenechanya 2005 based on CSO Priority and Living Conditions Survey 19911998

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Table 7.10. Plant availability

	Kafue Gorge	Victoria Falls
2003	82.1	60.0
2002	91.1	62.5
2001	89.1	76.1
2000	83.5	80.5
1999	84.4	78.0

Source: Mwenechanya (2005), from ZESCO annual Reports.

Table 7.11. ZESCO expenses and net operating income

Income and expenses	2001	2002	2003	2004
1. Operating expenses (% of operating income)	77.8	89.1	88.1	94.1
2. Depreciation (% of operating income)	16.4	15.5	15.4	13.4
Net operating income (100%-[1+2])	5.8	-4.6	-3.6	-7.5

Source: Mwenechanya (2005), based on ZESCO annual reports.

Table 7.12: Residential Tariffs for 2003

		Tariff (US$)
1. Unmetered	Charge period	
1.1 Consumption up to 2Amps	Month	0.903
1.2 Consumption between 2 - 15 Amps	Month	3.267
2. Metered (Capacity 15 kVA)		
R1 - Consumption up to 300 kWh	kWh	0.013
R2 - Consumption from 301 - 700 kWh	kWh	0.018
R3 - Consumption above 700 kWh	kWh	0.030
	Fixed monthly	1.075

Source: Mwenechanya 2005 based on Energy Regulation Board

Table 7.13. Child mortality and life expectancy

	Under-five mortality rate (per 100)			Life expectancy at birth (years)		
	1980	1990	2000	1980	1990	2000
Zambia	121	151	162	52	47	50
Rural	132	164	180	50	45	48
Urban	108	128	126	54	51	54

Source: Dagdeviren 2005a based on the 2000 Census.

Table 7.14 Selected indicators of health expenditure

	Total health expenditure (% of GDP)*	Government Health Budget**			Total Per capita health expenditure (US$)*
		Health budget (Million Kw)	Per capita health expenditure (Kw)	Per capita health expenditure (US$)	
1980	-	95,9897	16,936	18.8	-
1985	-	80,599	12,114	13.5	-
1990	3.3	41,755	5,341	5.9	15.9
1991	3.4	61,729	7,643	8.5	14.2
1992	4.2	38,378	4,589	5.1	16.7
1993	4.1	39,931	4,615	5.1	15.7
1994	4.5	57,127	8,293	9.2	17.2
1995	5.2	55,658	5,989	6.7	20.1
1996	5.9	39,068	4,060	3.7	20.8
1997	6.1	36,414	3,654	2.8	25.1
1998	6.9	39,750	3,897	2.2	23.3
1999	-	33,730	3,186	1.5	-

* Figures are from World Development Indicators (WDI) in 1995 constant prices and in US$.
They are consistent with the data of the Ministry of Health in the middle three columns.
** Includes both Recurrent and Development Expenditures
Source: Dagdeviren 2005a based on MoH (2003), MoH (2004), WDI (1999)

Table 7.15. Contribution to total health spending (%)

	1990	2002
Government	45	26.9
Parastatals*	26	-
Donors	6	41.6
Households	21	31.5

Source: Dagdevirren 2005a, based on 2002 data from MoH (2004) and 1990 data from Berman (1995).
* ZCCM accounted for over ninety-five percent of this contribution.

Table 7.16. Awareness of and participation in NHCs

	Percentage of not aware of NHC in their community		Percentage of who ever attended an NHC meeting	
	Women	Men	Women	Men
Rural	51.6	53.4	13	21
Urban	67.4	97.4	5	0.8

Source: Dagdeviren 2005a based on ZDHS, 2001

Table 7.17. Lack of access due to inability to pay for medical care (percent)

	Denied access to a health facility	Did not access because could not afford	Problems for women in accessing health care	
			Lack of money for treatment or transport	Long distance to health facility
Rural	20	17.2	71.6	59.1
Urban	22.1	32.5	58.5	25.2

Source: Dagdeviren 2005a based on ZDHS, 2001