A COUNTRY FRAMEWORK REPORT

Private Solutions for Infrastructure in Lesotho

PUBLIC-PRIVATE
INFRASTRUCTURE
ADVISORY FACILITY

THE WORLD BANK

Contents

Acronyms and Abbreviations

BOT	Build-Operate-Transfer
COWMAN	Committee on Waste Management
DOE	Department of Energy
DRR	Department of Rural Roads
DRW	Department of Rural Water
DRWS	Department of Rural Water Supply
DTT	Department of Traffic and Transportation
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNP	Gross National Product
GOL	Government of Lesotho
ICT	Information and Communication Technologies
IP	Internet Protocol
ISP	Internet Service Provider
LEA	Lesotho Environmental Authority
LEA	Lesotho Electricity Authority
LEC	Lesotho Electricity Corporation
LFBC	Lesotho Freight and Bus Corporation
LFCD	Lesotho Fund for Community Development
LHDA	Lesotho Highlands Development Authority
LHWP	Lesotho Highlands Water Project
LNDC	Lesotho National Development Corporation
LPU	Lesotho Privatization Unit
LTA	Lesotho Telecommunications Authority
LTC	Lesotho Telecommunications Corporation
MCC	Maseru City Council
MCST	Ministry of Communications, Science, and Technology
MIA	Moshoeshoe I International Airport
MNR	Ministry of Natural Resources
MOF	Ministry of Finance
MOPWT	Ministry of Public Works and Transport
MTCE	Ministry of Tourism, Culture, and Environment
NES	National Environmental Secretariat
NGO	Nongovernmental Organization
NREB	National Rural Electrification Board
NREF	National Rural Electrification Fund
OWC	Office of the Water Commissioner
PPI	Private Participation in Infrastructure
PPIAF	Public-Private Infrastructure Advisory Facility
PPP	Public-Private Partnership
PPSU	(Water) Policy, Planning and Strategy Unit
PSPC	Power Sector Policy Committee
RB	Roads Branch
RRMP	Rural Roads Management Program
RSA	Republic of South Africa
SACU	South African Customs Union
SADC	Southern African Development Community
TL	Telecom Lesotho
TRASA	Telecommunications Regulatory Authority of South Africa
UNDP	United Nations Development Programme
VAT	Value-Added Tax
VCL	Vodacom Lesotho (wireless)
VIP	Ventilated Improved Pit Latrines
VOIP	Voice Over Internet Protocol
WASA	Water and Sanitation Authority
WF	Wireless Fidelity
WSIP	Water Sector Improvement Program

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Introduction and Acknowledgments

This Country Framework Report for Lesotho is one of a series of country reviews aimed at improving the environment for private sector involvement in infrastructure. Prepared at the request of the government concerned, Country Framework Reports have three main objectives:

- To describe and assess the current status and performance of key infrastructure sectors;
- To describe and assess the policy, regulatory, and institutional environment for involving the private sector in those sectors; and
- To assist policymakers in framing future reform and development strategies and to assist potential private sector investors in assessing investment opportunities.

This report is being published jointly by the Public-Private Infrastructure Advisory Facility (PPIAF) and the World Bank. PPIAF is a multi-donor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement. For more information on the facility, see the website: www.ppiaf.org.

The design and preparation of this report was led by Toshihiro Toyoshima (Private Sector Development) of the World Bank. The supervisory team within the World Bank included Gilbelto de Barros (Public Private Partnership), Ron Kopicki (Supply Chian), Gylfi Palsson (Transportation), Jane Walker (Water and Sanitation), Andrew Macoun (Water and Sanitation), Tenzin Dolma Norbhu (Telecommunications), and Amarquaye Armar and Shenhua Wang (Electricity). The main counterpart in the Government of Lesotho was the Ministry of Finance and Development Planning.

The report draws on inputs from discussions with the woking group members from the government as well as with representatives of the private sector.

The report was prepared by the consulting team led by Deloitte Touche Tohmatsu Emerging Markets, Ltd. (Deloitte), and comprising Benjamin Darche (Team Leader and Transportation), Andy Dijkerman (Cross-Cutting Issues), Fraser Morrison and Tridib Biswas (Electricity), Peter Nielsen (Telecommunications), Archer Davis (Water and Sanitation and Solid Waste), Lucy Redeby (Rural Electrification), and Cally Henderson (Environmental).

The report preparation process of all Country Framework Reports is intended to facilitate dialogue among key stakeholders on priorities for government reform and the concerns of investors, policymakers, and consumers of infrastructure services. Work in progress for the report was discussed at working group sessions held in October 2002, and January, March, and May 2003 in Maseru, and two broad stakeholder workshops held in the latter months. The Action Plan presented in Chapter 2 and sector recommendations in Chapters 3-7 are a result of this dialogue.

The contents and recommendations of this report are the responsibility of the study team and do not represent the official position of either the Government of Lesotho or the World Bank. PPIAF and the World Bank wish to thank the

Government of Lesotho and private participants attending these workshops for their valuable insights that helped clarify the issues presented in this report and for their guidance and revision to the action plan and recommendations.

1 Executive Summary

Lesotho is a predominantly mountainous, land-locked, poor country with a small population (2.15 million), limited natural resources and a very fragile ecology. It has low gross national income (US$570 per capita, slightly above the Sub-Saharan average of US$491[1]) and a significant poverty level.[2] To ameliorate this condition, the government has embarked on a pro-poor growth strategy that includes public and private investment in infrastructure.

Infrastructure Reform

Infrastructure in Lesotho is relatively undeveloped with poor coverage and low-quality services common to many African countries that have low per capita incomes and government fiscal limitations that constrain infrastructure investment. The Government of Lesotho (GOL) recognizes the need to expand coverage, improve quality, and ensure efficient delivery of infrastructure services and has embarked on a series of reforms in the telecommunications, power, water, and transportation sectors. It appreciates the benefits of private participation as an element of these reforms, albeit with a normal degree of prudence. Nevertheless, the level of private participation at this phase in the evolution of the reforms is considerable, given the country's small size, limited institutional capacity, and lack of public and private investment capital.

Telecommunications has recorded the most significant reform of any of the infrastructure sectors. A private consortium purchased the government-owned telecommunications company and has achieved a sixfold increase in teledensity in a six-year time frame. Direct domestic investment is now evident in the vibrant telebureau segment of the market. The telecommunications sector has a well-developed legal and regulatory framework, and the government is preparing guidelines for a Universal Service Fund to expand coverage in the underserved rural and peri-urban areas. Despite these sectoral gains, Lesotho's telecommunications sector could make even greater progress if reforms were deepened and competition for advanced communications services were expanded.

Other than telecommunications, reforms in other sectors have not significantly advanced. Progress in the electricity, water, and transportation sectors is lagging and reflects the considerable obstacles the government faces to incorporate private participation into the ongoing sector reforms. The sale of the government-owned Lesotho Electricity Corporation (LEC) to private investors has been delayed while the government considers a shift in private participation strategies. Water sector reform has been hampered by the lack of an adequate legal and regulatory framework and institutional conflicts. Private participation in the transporta-

1. World Bank, *African Development Indicators 2003.*

2. *African Development Indicators 2003* lists six measures in its Poverty Index chart (chart 13-2, p. 310). Lesotho only has information for two of these measures, percent of the population living under US$2 per day (1985–99), and the national poverty headcount as percent of population (1984–2000): 43% and 49%, respectively. These levels compare to 38% and 69% for Mozambique and 27% and 42% for Kenya.

tion sector has produced some private contracts for road construction and operation, but additional opportunities for private investment in the small rail and aviation subsectors appear limited.

The government has several challenges ahead to hasten these reforms and expand the use of private participation to help achieve its poverty reduction goals. The most difficult is to accelerate economic growth that reaches the poor and reduces the considerable current income distribution disparity.[3] Although economic growth is healthy, about 6% per year in the 1988-1998 decade,[4] income levels of the poor will continue to restrict the ability to set cost recovery tariffs and will therefore limit private participation projects that are completely financed by the private sector. In the near and medium term, private participation in infrastructure (PPI) projects will mostly entail investment partnerships with the GOL or projects that require government subsidies for private operations. Another critical challenge is to rapidly develop the government's capacity to prepare, evaluate, and monitor private participation projects, and to establish adequate and enforceable regulatory institutions to ensure that the benefits of private participation are realized and that its potential negative consequences are avoided.

Cross-Cutting Themes

There are many themes common to all infrastructure sectors that impact the opportunities for PPI in Lesotho. A review of these cross-cutting issues begins with the macro-economy and includes a variety of financial, legal, regulatory, institutional, and general government policy issues.

The macroeconomic conditions in Lesotho reveal that the country has substantial poverty, fewer jobs, and rising inequality despite a decade of robust economic growth. Consequently, the GOL should move swiftly to finalize a poverty reduction strategy and to adopt a pro-poor growth strategy. The latter should likely involve the following key components: (1) significantly increased investment in infrastructure, (2) policy reforms that ease constraints on private investments, and (3) an aggressive human resource development campaign. Those sectors of the economy that have been identified as potential contributors to future growth include: mining and sandstone quarrying, tourism, and agriculture (including cultivation of high-value horticulture). The retention of industry, particularly the garment industry, and links in the supply chain is also a priority.

Customer tariffs in the water, sanitation, and electricity sectors are woefully low and do not permit the state owned utilities to recover full costs. This has led to a cycle of losses, under-investment, and constrained expansion of these networks despite pent-up demand. Compounding this problem is the fact that government capacity to finance infrastructure is severely constrained. Capital budgets are limited, and current fiscal strategy aims to reduce the role of government in the economy. Consequently, approaches that twin public resources with private investment capital may offer promise in accelerating the expansion of infrastructure in the country.

On the whole, much could be done to make Lesotho's business climate more competitive and receptive to business investment. Limitations exist in the adequacy and availability of basic infrastructure to support industry and in the availability of skilled labor. Administrative hassles are numerous, but Lesotho has already recognized most of these and has conducted extensive preparatory work to identify solutions known to problems, some via legislation (Companies Act, Investment Code, Land Act) and some via institutional development (a one-stop investment shop). The solution is clear: reform measures pertaining to the business climate should be implemented forthwith, thereby giving Lesotho a clear competitive boost relative to other neighbors in the region.

Capacity to implement PPI in Lesotho is limited and must be expanded as a precondition for success. The GOL has clearly embraced the concept of private participation in the economy as a whole and the infrastructure sector in particular, as reflected in its privatization program. Yet, many privatization efforts to date have not realized the full economic benefits expected due to the fact that post-transaction monitoring capacity was insufficient or lacking. Future efforts to introduce PPI must be accompanied by concomitant investments in public sector contracting and monitoring capacity.

Regulation is most developed in the telecommunica-

3. "Inequality in Lesotho is one of the highest in Africa and may have marginally worsened between the mid 1980s and 1990s. The poorest decile spent only 0.27 percent of the total expenditure compared to 52 percent by the richest decile in 1994" (World Bank, "Lesotho Growth and Employment Options Study," draft, April 19, 2003, p. 4).
4. "Lesotho Growth Options Study."

tions sector to date, but the cost of regulation is a matter that deserves greater attention if Lesotho is to introduce affordable regulation for the electricity and water sectors. An approach must be found that does not compromise regulatory independence, integrity, and competence. In addition, light-handed approaches to regulation are recommended with respect to rural infrastructure and measures need to be taken to establish appropriate safety standards and client service standards for this milieu. At the same time, such approaches must take cognizance of environmental issues in areas of concern for biodiversity and where other environmental safeguards are essential. A large void currently exists with respect to environmental regulation, and the GOL should address this gap quickly if private investors are to properly assess the opportunities, costs, and risks of infrastructure investment.

A holistic comparison of all infrastructure sectors in Lesotho at present reveals that the communications sector is the most advanced with respect to overall reforms. This is reflected in the separation of policy, regulation, and operational functions; the establishment of a sector regulator; and the entry of significant private sector participation in the delivery of customer services. As a result, the telecommunications sector provides Lesotho policymakers with a live "laboratory" in which to test out the developmental impact of reform measures and value of structural changes in the marketplace. This report identifies specific lessons learned from this sector and examines their relevance to reform efforts under way in the other sectors.

In summary, this report finds that private participation in infrastructure could offer Lesotho three key advantages: (1) augmenting budget resources in cases where the private sector undertakes to finance projects or services that would not otherwise be funded, (2) improving the quality and efficiency of service delivery, and (3) accelerating investments in infrastructure. By the same token, the report makes clear that PPI carries significant down-side risks that, despite the best of intentions, could lead to negative fiscal impacts, lower than expected service quality, disruptions to service, or more dire consequences. Accordingly, the need to establish PPI implementation and post-transaction oversight capacity is deemed to be of paramount importance if the GOL is to embrace an overall strategy for PPI.

Sectoral Overview

Electricity Sector

As in many developing countries, the electricity sector in Lesotho has been largely dominated by the government. Currently, only the government-owned LEC is authorized to supply electricity to end-users in the country. However, this situation is likely to change with the impending appointment of a new regulatory body, the Lesotho Electricity Authority (LEA), that will be authorized to issue licenses to others.

From a global as well as a Southern African regional perspective, the electricity sector in Lesotho appears to have been trapped in a low-growth condition for a long time, perhaps due to policy inertia and political instability of the past, the impact of which is reflected in the lowest access-to-electricity figure in Southern Africa. The current network of the LEC appears to be reachable by about 70% of the population, but in its 34 years of operation, the LEC has actually managed to connect only about 7% (as of March 2003).

Traditionally, the LEC used to import most of its electricity needs from the Republic of South Africa. When the Muela hydropower plant came into operation in 1993 as part of the Lesotho Highlands Water Project, it started supplying almost 90% of Lesotho's electricity demand. The balance is met by imports and a few off-grid mini-hydro and diesel plants.

During the politically unstable years of the 1990s, there was a significant deterioration in the performance of the LEC. In an effort to reform the company and improve efficiency, the GOL signed in 2001 a 13-month management contract for the LEC with a private sector Interim Management Task Force after an international competitive bidding process. This was the first step in a Lesotho Utility Reform Project that included the creation of a regulatory authority and plans for privatization of the sector. The task force improved LEC performance significantly, and at the end of its contract period, it was asked to remain until alternative arrangements for the LEC are identified.

Supply of electricity does not appear to be a constraining factor in Lesotho, at least for the foreseeable future. Import of electricity from Eskom and the Southern African Power Pool can be increased to a great extent, if necessary. Demand for electricity is clearly present. From the experience of comparable countries, and from the comments of

Lesotho electrical contractors and other stakeholders, it appears that there is a significant level of pent-up demand for electricity in the country, at least in the lowlands where 75% of households are located. With the GOL adopting a strategy for faster economic growth, demand for electricity is likely to grow at a much faster rate.

In the past, a major barrier to customers signing up for connections was the LEC's rigid policy on a "connection fee" whereby almost the full cost of connection, 3,500 Maloti (US$437.50) and higher, was charged up front, which proved prohibitive for many potential customers. Resources from the Lesotho Utility Reform Project loan have enabled the LEC to reduce the up-front charge to 500 Maloti (US$62.50) with the balance to be collected through energy charges for up to a period of seven years. The management contractor holds the view that further reductions in the up-front connection charge will be the most effective means of improving the take-up rate, thereby facilitating the expansion and penetration of electricity service. Such a measure is only possible, however, if an enduring mechanism is found to bridge the financial gap implied by new connections.

Rural areas in Lesotho have been particularly neglected in terms of electricity supply. Only about 1% of potential customers in rural Lesotho are currently served by the LEC. There is evidence of some private generation of power by households and businesses in rural areas, but no official data on the subject are available.

The GOL has of late become concerned about general lack of electricity in rural areas. Studies and research undertaken by the country's Department of Energy (DOE) have confirmed that there is political support for a rural electrification program. DOE is about to undertake a series of pilot projects to try out alternative models of electricity supply in rural areas.

New institutions and financing facilities will likely be launched by the GOL to take on direct roles in the rural electricity sector. A regulator is provided for in the recent LEA Act, and this authority will assume responsibility for licensing, price controls, and standards. A National Rural Electrification Fund (NREF) is also envisaged and provided for in the act, through which subsidy resources can be channeled for rural electrification. Finally, the GOL is contemplating the creation of a National Rural Electrification Board that, if established, will administer the fund. Sources for funding the NREF are likely to include: levies on urban customers, budgetary support from the government, and donor funds.

Electricity tariffs in Lesotho have not been cost-based as reflected by the fact that tariffs have remained unchanged since 1993, resulting in the LEC's operating loss of more than 100 million Maloti (US$12.5 million) over the last three years.

Studies by the Sales Advisory Group of the GOL have consistently recommended outright sale of up to a 70% share of the LEC to a strategic investor. However, the government has steadfastly resisted an outright sale. The GOL has now come to an agreement with the World Bank to grant a time-bound concession for running the LEC to a private sector bidder. For the purpose of this concession, the LEC service territory will be defined to include only the existing interconnected grid of the LEC and 200 meters around it. In other words, off-grid and isolated small hydro and diesel generation facilities, localized networks, and most of the rural areas will not be included in the LEC concession.

Local electricity contractors have demonstrated technical capabilities in installing medium-voltage and low-voltage lines and in connecting customers, but they lack access to the capital market. They are interested in assuming a greater role in the sector. Through an appropriate and innovative mechanism, their participation in the sector could be enhanced.

At a stakeholders' workshop in Maseru, the participants decided, through active discussion and debate, that PPI opportunities do exist in the electricity sector (1) within the proposed LEC territory—through greater participation of electrical contractors and consultants in subcontracting work, and (2) in the unserved areas within the LEC's jurisdiction—through GOL bidding out concessions for new smaller distribution utilities, and (3) in the unserved rural areas—through awarding of licenses to generate and distribute electricity, supported by time-bound and output-based targeted subsidies from the NREF.

The workshop participants also concluded that Basotho participation in all of the above is possible, as certain barriers are gradually removed. These barriers are: lack of necessary capacity in utility management, lack of access to capital, lack of access to information, intimidating bidding documents; and small size of the market.

The participants felt that these barriers could be removed by designing innovative financial mechanisms to

provide easier access to capital/credit, involving plant hiring and leasing; knowledge building through pilot projects; regular government-private sector interaction; focusing more on action and capacity-building efforts than on undertaking more studies; and making bidding documents user-friendly.

Telecommunications

The telecommunications sector is far ahead of other infrastructure sectors in Lesotho, both with respect to market liberalization and the introduction of PPI and also in terms of sector performance. Market structure is now reasonably competitive, albeit that the fixed-line operator has exclusive rights to offer basic international voice and other communications services until February 2006. Participants in the sector now include two wireless operators, the fixed-line operator, one earth-satellite gateway provider of broadband Internet services, three Internet service providers, one calling card resale services provider, plus 770 telebureau operators. Competitive pressure is evident in the sector and is reflected in the diversification of products offered by operators such as text messaging and prepaid subscriptions, thereby making consumption more affordable.

Development within the sector was launched by the adoption of the Lesotho telecommunications policy in February 1999. The passage of the Lesotho Telecommunications Act of 2000 followed thereafter, together with the divestiture of the operating parastatal, the Lesotho Telecommunications Corporation, and the creation of a sector regulator, the Lesotho Telecommunications Authority. Sector policy established a clear vision for private sector entry into the info-communications arena, and though it failed to anticipate some of the technologies driving global telecommunication trends, it set in place the legislative and institutional parameters for sustained progress in the sector.

As a result of these structural market changes and robust foreign direct investment (FDI), teledensity in Lesotho has increased sixfold in six years, from a base of 14,000 subscriptions prior to PPI to 129,000 fixed and mobile subscriptions today, representing a teledensity of 6% nationwide. Rural penetration is still elusive as subscribers are concentrated in the urban and lowland areas of the country where electricity is also easily available. Coverage targets for rural expansion have recently been formulated to strive for a doubling to 12% national teledensity over the next three years on a strictly commercial basis without recourse to subsidies. Only after rural market demand and willingness to pay have been tested on commercial terms will sector subsidies be introduced through the Universal Service Fund to be administered by the regulator.

The opening of the market has created a number of challenges for the sector regulator, notably with respect to changes in the technological arena which are forcing greater precision on the definition of "basic" versus "advanced" info-communications services. Because the fixed-line operator has an exclusive license to offer basic services, the boundaries of this definition are critical to its financial performance. At the same time, the regulator is keen to ensure that the introduction of advanced technologies into the Lesotho's marketplace is not severely retarded by this exclusivity since this will affect the affordability of telecommunications services to the population at large. This issue will be resolved through recourse to the judicial system within Lesotho.

Two key issues remain pertinent to the future evolution of Lesotho's telecommunications sector. The first is that the sector policymaker, the Ministry of Communications, Science, and Technology, must develop the capacity to keep pace with the regulator and remain engaged when key policy matters are debated with respect to rural penetration goals and possible approaches to subsidized expansion. Secondly, social expansion goals appear to have taken top priority in Lesotho without sufficient cognizance of the need for improved service infrastructure capable, for instance, of satisfying the demand by hotels and the garment industry for broadband Internet. Redress of this oversight is strongly recommended, perhaps in an amendment of the fixed-line operator's performance targets under the license or via the licensing of new entrants into the market.

Future opportunities for PPI in the sector include a public-private partnership (PPP) in the medium term to develop a GOL information and communications technologies (ICT) network. This could be structured in a manner to permit private bidders to satisfy latent private sector demand for ICT infrastructure on a simultaneous basis, thereby providing tangible demonstration to government of how a PPP can spread fixed costs among more than one customer set, thereby extending the purchasing power of limited public finance. Immediate PPI opportunities involve pilot approaches to the expansion of rural access to info-communications services. These could involve direct domestic investment and the channeling of output-based aid through

telebureau operators as well as targeted subsidies coupled with FDI via existing sector licensees. One specific pilot would be to introduce ultra-low cost e-mail access into public access venues such as rural post offices or telebureaus using any technology an operator might choose. Another would seek to combine the delivery of telecommunications services with other utility services in demand (e.g., electricity), thereby reducing the total costs of service delivery. This initiative could be piggybacked onto the rural electrification pilots currently under preparation by the Lesotho Privatization Unit and its collaborating agencies.

Transportation

The transportation sector in land-locked Lesotho is dominated by the 7,500-8,000 km road network, which has tripled in size since 1982. The other important subsectors are rail and truck freight and public transportation.

In the road subsector, the GOL has instituted a number of reforms, including contracting out construction and maintenance services to the private sector with subsequent reduction in force account activities. In rural roads, the Department of Rural Roads has trained local contractors to maintain earth and gravel roads, and the Roads Branch uses the private sector for new construction and rehabilitation of its paved arterial network. The Ministry of Public Works and Transport (MOPWT) may consider expanding these activities with PPI-related, long-term output performance contracts.

Another recent reform pertains to financing of road construction and maintenance. The GOL established a Road Fund with a governing Board of Directors to finance routine and periodic maintenance and road rehabilitation works. However, tax and fee collections dedicated to the Road Fund are insufficient to maintain and rehabilitate the entire network and the GOL must rely on additional budget resources to keep pace with maintenance and construction costs. Actual Road Fund and GOL recurrent budget allocations remain inadequate to build new roads and maintain the existing network. Therefore, the GOL should concentrate on maintaining its core network prior to construction of additional paved roads. PPI-type long-term output performance contracts may be an effective way to improve maintenance efficiencies, but only if the MOPWT can adequately measure the performance of the private contractors. This is still an issue, as the MOPWT does not have a reliable network database to adequately measure baseline indicators for road conditions, coverage, quality, and maintenance efficiency, or the personnel to accurately monitor contractor compliance with these indicators.

In addition to contracting and financing reforms, the GOL is considering a major institutional reform to consolidate the many government agencies that provide road policy, construction and maintenance services, and funding into a single unit, the Road Agency. However, it must be alert to potential conflicts of interest within this "super agency" due to its broad mandate and control of road financing in addition to policy and service activities.

In the rail subsector, Spoornet, the Republic of South Africa (RSA) parastatal, carries rail cargo over a 2-km branch line between Marseille, RSA, and Maseru. This limited service handles 33% of Lesotho's imports and exports, with the trucking industry hauling the remaining 66% and air cargo less than 1%. In the aviation subsector, South Africa Airlink, a division of South African Airlines, operates a single route between Maseru and Johannesburg.

The key issues in the freight subsector are maintenance of the Marseille-Maseru rail service and how to ensure adequate competition between rail and truck freight costs. The agreement between Lesotho and RSA for rail service has expired, and a new agreement is not in place. This jeopardizes rail container service, which is the low-cost alternative for textile industry imports of raw materials and product exports. Truck cargo transportation costs suffer from an oligopoly arrangement between the largest RSA trucking companies and Lesotho carriers due to financial and logistical arrangements associated with shipping and handling. To help ensure competition between truck and rail cargo hauling, the GOL first has to reach an agreement with the RSA regarding continued Marseille-Maseru rail service. It should also consider creating a dry port at the Mascon rail terminal with a PPI agreement with shipping line companies to operate the dry port. However, it might be difficult to attract a dry port operator unless the GOL is willing to make some improvements to the facility and to properly maintain the Marseille-Maseru branch line to reduce the potential of rail freight accidents and shipping delays.

The GOL attempted to reform the aviation sector through the sale of the national airlines to a private carrier, but this effort was unsuccessful. South African Airlines took

over air service between Maseru and Johannesburg and currently operates three daily round trips between these locations carrying about 25,000 passengers annually. The GOL continues to operate the Moshoshoe I International Airport (MIA), which requires government budget subsidies. The low level of activity at MIA is not attractive to private operators, and the GOL will most likely continue to subsidize operations unless it can reduce its payroll costs, the major component of MIA operating expenditures. Domestic air travel was discontinued with the sale of the national airline, and the runways of the 28 rural aerodromes continue to deteriorate due to lack of maintenance budget. A potential PPI option to reverse this situation is to combine income-generating tourist activities with on-demand air service at selected rural aerodromes.

Water and Sanitation

The water supply and sanitation sector in Lesotho is undergoing considerable institutional, legal, and regulatory reform. Although progress has been made, in the short term, institutional arrangements remain complex and overlapping, yet with some gaps. Feasibility of any form of private sector participation will depend, among other factors, on the success of these reforms.

Given the small size of the country and the difficult terrain, Lesotho is making good progress in providing potable water to the rural and urban population. The coverage statistics presented in Chapter 2 show that Lesotho compares well with other Southern African countries. However, there is a net shortage of potable water in the urban areas due to inadequate networks and production capacity. This already results in occasional rationing of supply, but this will become worse due to the rapid rate of urbanization and industrial growth. Nonpotable water reclamation for industrial use could provide some relief by enabling diversion of limited supplies to potable water consumption. Furthermore, raw water is also in short supply, particularly during winter months and especially in Maseru. This issue will worsen until the proposed Metolong Dam is constructed during the next decade.

Lesotho also provides a reasonable level of sewage coverage so this does not represent a health problem at this time. Services are primarily delivered through conservancy tanks and pit latrines. Treatment of industrial wastewater will play an important role in protecting the environment from industrial pollution; this is required by the European Union and other countries that provide preferential tariffs to Lesotho's garment industry.

Below cost recovery tariffs are a key obstacle to improving sector performance. The Water and Sanitation Authority (WASA) and the Department of Rural Water Supply are unable to finance all required investments in water abstraction, treatment, and distribution, as well as wastewater collection and treatment. Also, consumers—in particular industrial—receive signals that water supply and wastewater collection and treatment are low-value services and therefore have no incentives to conserve water or pretreat their wastewater effluents.

Some of the institutional and regulatory changes taking place in Lesotho are being driven through the World Bank's Water Sector Improvement Program. An important aspect of this is the proposed Performance Agreement between WASA and the Ministry of Finance. For several years, WASA has been the subject of intensive organizational improvement initiatives by the GOL including technical assistance from a U.K. water company and other consultancy support.

WASA is under the jurisdiction of the Ministry of Natural Resources, the umbrella organization for several other water-related departments and utilities. Of note are the Office of the Water Commissioner and its Policy, Planning, and Strategy Unit, the Department of Water Affairs, the Department of Rural Water Supply, the Lesotho Highlands Development Authority, and WASA.

The Ministry of Tourism, Culture, and Environment also plays an important role in the sector. It oversees the National Environmental Secretariat, whose role is to develop environmental policy which has an extensive impact on the sector. A framework law—the Environmental Act—has been promulgated, and other items of legislation or policy are in process.

The GOL, through the auspices of the Ministry of Local Government, is also in the process of implementing a decentralization process to shift service responsibilities from the central government to local governments, including water supply and distribution. There is great potential for overlap and jurisdictional disputes among different levels of government and their departments regarding authority and control of these services. Careful attention to the implementation of the decentralization policy is paramount to avoid interruptions and inefficiencies in water and other public services.

The rural water supply component of the Sector is fairly well evolved due to strong donor and nongovernmental organization support, which is led by a specialized Department of Rural Water Supply. However, sustainability will become a problem without increasing capital injections or setting a proper pricing policy, as cash to fund maintenance is collected on an ad hoc basis.

Legal and regulatory reforms are also under way to deal with the fragmentation of existing laws. It is critical that the proposed reforms are further complemented, enacted, and implemented. Understanding that cost recovery tariffs and targeted subsidies are a prerequisite to the sustainability of the sector, the Performance Agreement between WASA and the Ministry of Finance incorporates clauses that will adjust tariffs to reduce subsidies; however, it is unclear what, how, and when other tariff adjustments will take place. A Water and Sanitation Reform Bill has been introduced that pertains primarily to privatization, but it lacks a comprehensive approach to water resource and service delivery regulation in the sector. The Office of the Water Commissioner will guide policy formulation and regulation until comprehensive legislation for the sector is in place, but will need some degree of training or capacity building to fulfill this role. The GOL has recognized the need for a sector regulator, but the GOL is experiencing regulatory capacity constraints for experienced, knowledgeable regulatory staff. One of the ways to address the capacity issue is to create a multisector regulator.

The current low level of investment, resources, infrastructure, and skills is a fertile environment for the introduction of PPI. However, the conditions for a full-scale PPI in water and sanitation are not present—i.e., a solid and reliable institutional, policy and regulatory framework accompanied by cost recovery tariffs. Good first steps towards a possible wider use of PPI in the medium to long term are being taken. These include the proposed reforms, and particularly the Performance Agreement between WASA and the Ministry of Finance. In the nearer term, the most likely candidate for some form of PPI is the industrial wastewater treatment and reclamation of nonpotable water. By increasing industrial water and wastewater tariffs to cost recovery levels, industries will self-select water reuse solutions—individually or collectively. These solutions would be financed, developed, owned, and operated by private industries. The GOL has also considered the development of the Metolong Dam as a candidate for PPI, but the feasibility of such an initiative depends on the ability of WASA to raise tariffs to cover the large costs associated with a privately financed, developed, and operated project of this magnitude.

Solid Waste

The solid waste sector is very rudimentary in terms of institutional structure, laws, regulations, and services provision. Investment in this sector has been insignificant, and, taken together with the lack of legislation and institutions, there are significant obstacles and delays to improving this sector's performance. However, as problems in the sector become more visible, there are signs of renewed efforts from the GOL to create a new legislative and institutional environment. If this continues to the extent that resources are also mobilized, some progress will be possible.

The National Environmental Secretariat is responsible for solid waste legislation and policy, and for overseeing activity in the sector. However a steering committee called Committee on Waste Management is active in facilitating progress.

The Ministry of Local Government has line responsibility for service delivery through the local government structures. Only the Maseru City Council (MCC) has operational capacity for solid waste collection and disposal and there is little evidence of success in its activities, in spite of the limited coverage it provides: less than a third of the population has garbage collection services. All the collection equipment is in serious disrepair, and no funds exist for repairs or for purchasing new vehicles. Littering and illegal dumping are also common. There are no landfill sites anywhere in Lesotho that have been developed to any recognized engineering standard, and no tipping fees are collected at the two sites that do exist.

The Environment Act of 2001 contributes to the legal framework for solid waste, but there are no regulations available yet, nor is there significant institutional capacity to enable enforcement of this law. Currently, there are no laws to govern private participation in the sector nor is there any institutional capacity or evidence of any intention to regulate activity.

There are significant opportunities for PPI in this sector in both the collection of refuse from sources of generation and for disposal to landfill. But these opportunities can only be realized if the legal structure is developed and clarified, if

the regulatory capacity of government is created, and if realistic tariffs are charged. This will require major attitudinal and behavior changes that can be instituted by the Ministry of Local Government as part of its decentralization effort.

Private Participation Opportunities

Table 1 is a summary of the PPI opportunities identified during the Country Framework Report preparation and workshops.

Table 1 shows that a wide variety of PPI opportunities exist. These are explored in more detail in the sector chapters. The most immediate PPI opportunity is the concession of the LEC assets to the private sector. The GOL shifted the divestiture of the LEC to a multi-year concession that will include private investment and operations. Private investment is expected to expand coverage in the LEC service area to those customers that have the willingness and ability to pay through cost recovery tariffs. In those areas where users

Table 1. Potential Private Participation in Infrastructure Projects

Sector	Project	Form of Contract	Duration	GOL Financial Participation	Revenue Sources	Subsidy	Investment or Operation	Domestic PPI Potential
Electricity	LEC Privatization	Concession	>19 years	Soft Loan?	Users	No	Both	Low
Electricity	Rural Electrification	Outsourcing within LEC Territory	< 5 years	Possible	NREF	Yes	Operation	High
Electricity	Rural Electrification	Concession in unserved LEC Areas	>10 years	Possible	NREF	Yes	Both	High
Electricity	Rural Electrification	Output-based Aid and License	Variable	Possible	NREF	Yes	Both	High
Multi-Utility	Telecommunications & Rural Electricity	Rural Elec. Pilot Projects	TBD	Possible	NREF, Universal Service Fund	Yes	Both	High-Medium
Telecommunications	Low cost E-mail Access	Mutiple Contract	TBD	Possible	Budget/Universal Service Fund + Private Revenue	Possible	Both	High-Medium
Telecommunications	ICT Network Develop	Mutiple Contract	TBD	Budget	Budget + Private Revenue	No	Both	Medium
Transport	Paved Road Maintenance	Performance-Based Contract	7 years	Annual Budget Allocation	Road Fund + GOL Budget	None	Operation	High
Transport	Mascon Railhead	Concession	20 years	Yes	GOL Budget	No	Operation, Potential Investment	Low
Transport	Public Transport Leasing Program	Lease Finance	5 years	Yes	GOL Budget or Soft Loan	No	Both	High
Transport	LBFC Leasing	Concession or License	5 years	Yes	Budget	Diminishing	Both	High
Solid Waste	MCC Garbage	Operation Lease	5 years	None	MCC Tariffs	Reduce Subsidy over Time	Invest Vehicles Operations	High
Solid Waste	Maseru Landfill	Concession	20 years	Possible	Tipping Fee Tariffs	Reduce Subsidy over Time	Both	Low
Sewage	Ratjomose Plant	Build-Operate-Transfer	20 years	None	Industry Water Sales and WASA Charges	Reduce Subsidy over Time	Both	Low

are not able to pay, the GOL will encourage private firms to bid on expansion and service goals, but with possible financing contributions from the NREF. The GOL anticipates that Basotho companies will bid on these sub-concessions. Important elements of the GOL's PPI strategy are providing access for private Basotho companies to partner with foreign companies and to expand infrastructure for the poor.

The second immediate opportunity is the refurbishing and expansion of the Ratjomose Wastewater Treatment Plant in Maseru to allow for recycling wastewater to industrial users. This build-operate-transfer-type project might attract all of its investment financing from the private sector. The project will help WASA improve the efficiency of the existing plant and recycle scarce water in the under-supplied capital for industrial purposes.

The solid waste sector can also benefit from a PPI project that shifts garbage collection in Maseru to Basotho entrepreneurs, but a substantial amount of institutional and regulatory reform is necessary prior to offering such a project to the private sector. This medium-term project will also require substantial financial and technical support from the GOL. The government should consider a lease financing pilot project for garbage collection vehicles.

In the transport sector, PPI projects include, among others, expanding the current private contracts for road maintenance and rehabilitation to longer term output performance-based contracts. Although the GOL will finance the contracts with budget and Road Fund revenue sources, the longer term contracts should improve operating efficiencies and, in the long run, eliminate force account budget expenditures.

Finally, the GOL is preparing policies to support a rural telephony program. There is significant potential for a public-private program to expand ICT and network coverage using both private and government investment. However, a substantial amount of work is necessary to prepare the policies and guidelines of the Universal Service Fund (the source of government funding) in conjunction with the regulatory policies governing a rural telephony program that involves the private sector. The Lesetho Telecommunications Authority, the regulator, has not prepared these guidelines and regulations which are crucial to maintain the nascent competition that has emerged since its privatization and are also important to encourage the entry of Basotho entrepreneurs into the sector.

Action Plan

This report presents an action plan with three primary elements: (1) the creation of a PPI Facilitation Unit to assist line ministries in implementing PPI projects; (2) specific priorities pertinent to each respective infrastructure sector; and (3) cross-cutting reform measures addressing policy, regulatory, and legal actions needed to provide an enabling framework and facilitating environment for PPI projects.

PPI Facilitation Unit

The purpose of this unit is to assist line ministries in the preparation, evaluation, and monitoring of PPI projects. Its most important function is to assess the GOL's financial exposure to PPI projects to ensure that the PPI project does not have a negative impact on the GOL budget. The unit should be housed within the Ministries of Finance and Development Planning, but staffed by GOL personnel who have the analytical training and experience appropriate for evaluating and monitoring PPI projects. The unit would also rely on external consulting assistance on an "as-needed" basis.

The unit must approve PPI projects submitted by the line ministries based on the following criteria:

- *Project affordability* or impact on the GOL recurrent and capital budgets.
- *Project value for money*—to ensure that the GOL receives the highest return for its financial support.
- *Risk transfer*—to ensure the appropriate level of risk transfer to the private sector.

Specific Priorities for Action by Sector

Electricity: The biggest priority is to proceed without delay in setting up the sector regulator and executing the privatization of the LEC via concession contract.

Water and Sewerage: It is important for the GOL to recognize that there is a conflict between current industrial policy (whereby locators in industrial estates effectively benefit from subsidized utility services) and the goal of financial viability for utility service providers, notably

WASA. It is recommended that this issue be elevated to a level in government where the relative trade-offs of competing goals can be assessed and where all various stakeholder perspectives and alternative remedies can be taken into account. A resolution to this impasse is needed before the water sector can make effective progress on tariff reform, thereby opening the door to possible PPI in water infrastructure projects.

Transport: Two initiatives deserve rapid government attention. The first is to take measures to make it possible to introduce long-term road maintenance contracts through dedicated use of Road Fund resources. The second is to explore the feasibility of establishing the Maseru railhead as a dry port recognized by both Lesotho and South Africa, thereby improving the competitive conditions for freight traffic serving Lesotho's garment industry and opening the door to eventual PPI in the upgrading of the Mascon facility.

Telecommunications: Government is encouraged to stand by the initiatives of the sector regulator with respect to the roll-out of rural expansion targets to all sector operators and the opening up of competition for advanced communications services.

Cross-Cutting Actions

To advance PPI in Lesotho, the GOL should continue to support policy, legal, institutional, and other reforms to further the PPI-enabling environment and also help reduce the potential risks to the government associated with PPI projects. Below is a list of some of these key supporting actions, more fully described in Chapter 2.

- Adopt cost recovery tariffs for utility services, remaining cognizant of affordability.
- Identify affordable and sustainable approaches to subsidies.
- Adopt measures to improve the climate for business investment.
- Embrace competition as a contributor to development.
- Address the need for affordable regulation.
- Address the need for improved budgeting and management information systems.
- Create a forum for regular interaction between the public and private sectors.
- Move swiftly to fill the present void in environmental legislation.

In addition to this general list that cuts across the infrastructure sectors, each sector chapter provides specific supporting recommendations to advance PPI projects.

2 Cross-Cutting Themes, Sector Comparisons, and an Action Plan to Frame PPI in Lesotho

This chapter begins with an examination of Lesotho's current macroeconomic condition and future economic development strategies. This situates the central roles of infrastructure expansion and private-sector led growth within a pro-poor development path for the nation. It continues with a review of issues that are instrumental to reducing the risks to private sector participants in expanded delivery of infrastructure services in Lesotho. It then conducts an analysis of Lesotho's infrastructure sectors at the present stage in time, both in comparison to each other and with other countries in Africa and the region. The chapter then explores the interaction between various sectors and the resulting priorities that should be integrated into a pro-poor growth strategy for the country. The report then examines the potential gains that Lesotho could realize from greater private participation in infrastructure (PPI) together with the preconditions and consequences thereof. It then posits a strategy by which private participation could be expanded in Lesotho's infrastructure sectors, taking into account an appropriate role for the Government of Lesotho (GOL). The chapter concludes with a cross-cutting action plan that can set the framework for successful PPI within the country.

Macroeconomic Policies and Economic Development Strategies

Lesotho is a small, poor country ranked 13th out of 24 African countries in terms of competitiveness,[5] and 127th out of 174 countries on the United Nations Development Programme's (UNDP's) Human Development Index.[6] With a population of 2.15 million, and a gross national income of US$570 per capita, Lesotho is a predominantly mountainous, land-locked country with limited natural resources and a very fragile ecology.[7] Only about 10% of the land area is cultivable, and 80% of that is in lowland areas where most of the population resides. Because of Lesotho's limited endowment, the country needs to compete increasingly on the basis of manmade competitive advantages such as investment climate, a skilled labor force, and infrastructure.

Although the country enjoyed strong growth over the past two decades, the outcome was more poverty, higher unemployment, and increasing inequality. This was largely due to the decline in mining employment for Basotho in South Africa, together with the enclave nature of the Lesotho Highlands Water Project (LHWP) and the foreign direct

5. World Economic Forum, *The Africa Competitiveness Report, 2001/2002.*
6. Kingdom of Lesotho, Maseru, "Interim Poverty Reduction Strategy Paper," 2000.
7. *African Development Indicators 2003.*

investment- (FDI-) driven garment industry, neither of which generated substantial backward linkages into the economy. In terms of poverty, the 1998 UNDP *National Human Development Report for Lesotho* found that 45% of total national income flowed to the richest 10% of the population, while less than 1% flowed to the bottom 10%, resulting in a Gini-index of 57 for Lesotho at that point in time.[8] (The Gini-index takes a value of zero as perfect equality and a value of 100 as perfect inequality.) More than half of the Basotho population can be characterized as trapped in poverty and this is more pronounced in rural and remote areas of the country. This situation is exacerbated at a macro level by the scourge of HIV/AIDS. Lesotho has an estimated 33% average infection rate that may reach 42% in urban areas. The cost of the epidemic is borne by households and can be expected to severely impact Lesotho's future prospects for economic growth.

Compounding these problems is the relatively greater lack of infrastructure and utility services in rural areas to support income-generating activities, as well as that target population's lesser ability to pay user fees.

Given this heritage, Lesotho has embarked on the preparation of a poverty reduction plan that will embrace pro-poor growth strategies enlisting public and private sector investment. Future economic growth must be achieved in a sustainable manner with an eye to increasing equity among Basotho citizens. Macroeconomic modeling of Lesotho's economy suggests that increases in private investment must be largely financed by foreign resources in the medium term due to the paucity of savings.[9] Concurrently, increases in FDI are contingent on provision of an adequate platform of utility services and basic infrastructure as well as a sufficient supply of skilled labor.

Consequently, an appropriate pro-poor growth strategy for Lesotho'should involve the following components: (1) significantly increased investment in infrastructure, (2) policy reforms that ease the constraints to private investment, and (3) an aggressive human resource development campaign. Assuming that these preconditions can be met, various sectors of the economy have been identified as potential contributors to future equitable growth, including: mining and sandstone quarrying, tourism, and agriculture. Each of these sectors has reasonable potential to provide income to the rural poor and include them in the nation's development path. The retention of manufacturing, particularly the garment industry and related links in that supply chain, is also a priority, since these businesses generate employment at wages that are above the poverty line. PPI has a vital role to play in this developmental context.

Political Environment

Lesotho is a constitutional monarchy that, despite a history of instability, is making significant strides towards representative democracy and more professional government institutions. After independence from British colonial rule in 1966, Lesotho experienced 25 years of political turmoil, with alternating tensions between the king, the Basotho National Party, the Basotho Congress Party, and the military. For example, in 1970 the general elections were cancelled, the constitution suspended, the National Assembly abolished, and the king and opposition leaders sent into exile. Thereafter, the nation continued to experience periods of upheaval punctuated by coups, periods of military rule, disputed elections, and riots. Lesotho finally amended its "first past the post" electoral system after the failed elections of 1998 and embraced a system of proportional representation in Parliament. With this new platform for democracy, Lesotho held successful, peaceful elections in May 2002, and the sixth Parliament now includes representation by 10 out of 19 political parties registered in the country. The opposition now has influence, and the avenues for internal cooperation are much more secure. As a result, Lesotho has now gained a high degree of political maturity, and the risks of instability to FDI have decreased.

Capacity for Public Sector Financing of Infrastructure

Lesotho's pro-poor growth strategy recognizes that economic growth prospects are greatest if the financing for infrastructure can be expanded.[10] Improvements in basic infrastructure and utility services are essential if growth is to be realized in niche segments of agriculture, tourism, min-

8. "Interim Poverty Reduction Strategy Paper."
9. "Lesotho Growth and Employment Options Study."
10. Ibid.

ing, and industry. Yet, there are serious constraints on the availability of public sector finance. The current fiscal envelope is limited, and government's future fiscal strategy seeks to avoid increasing the level of public debt. The budget ceiling for capital expenditure in FY 2003/04 reflects zero nominal growth, and, of the amount budgeted, the first priority will be to fund ongoing projects (including counterpart contributions required to match donor financing). Only if these demands can be fully met will any residual funds be made available for new projects. In appraising new proposals, priority will also be given to projects aimed at rehabilitating the existing asset base.[11]

Fiscal projections for the coming years imply a substantial and deliberate reduction of the role of government in the economy. At the same time, fiscal strategy seeks to introduce public-private partnerships (PPPs) to finance infrastructure. To that end, the Minister of Finance has commissioned a legal review of the measures needed to put such a program into place. While a reduction of government's role in the economy is a welcome development from some perspectives, hard ceilings on capital spending may provide a dilemma that retards the adoption of PPI to expand infrastructure. While use of PPPs can speed up the delivery of infrastructure, they cannot substitute for government spending on infrastructure in its entirety.

An analysis of the GOL's 2002/03 budget in **Table 2** below reveals that 64% of the nation's capital budget emanated from donor sources (grants and loans in 60/40 proportion), and the bulk of that was directed to the education and health sectors included within "all other sectors." While that is a valid allocation priority (given the importance of human capital development to the economy), it reveals that capital for electricity and water infrastructure was paltry and woefully inadequate to address needed network expansion. While modestly higher sums were made available for the transport sector, the rate of expansion of the road network currently outpaces the availability of finance for recurrent road maintenance, thus undermining the long-term sustainability of such investments. No resources were allocated to the communications sector, reflecting the new prominent role of private investment in that sector, yet it may soon become imperative for the GOL to allocate capital to a government systems network if the country is to embrace information and communications technology to improve management information systems and government operating efficiency.

On the revenue side, the country depends heavily upon sources over which it has little control. Forward projections of South African Customs Unit customs revenues (constituting nearly 50% of current revenues) are highly uncertain but are expected to decrease due to the scheduled completion of the LHWP in 2007. On the expenditure side, there is also little room to maneuver. Recurrent expenditures are as high as revenues—30 to 32% of gross national product (GNP)—leaving little room for the capital budget. The government payroll is about 12% of GNP, and is difficult to reduce in the face of high (25%) current unemployment.

Looking forward, it is apparent that limited government capital budgets may constrain new infrastructure investment warranted by a pro-poor growth strategy. Creative remedies such as recourse to PPI are therefore needed to leverage and extend the reach of government finance. While Lesotho has introduced multi-year planning for its public investment program, the country will need to adopt additional measures to permit the commitment of long-term payment streams under some PPI financial models. Where designated funds have

Table 2. GOL 2002/03 Capital Expenditure Budget, US$

	GOL	Grant	Loan	Share (%)	Total
Communications	0	0	0	0	0
Public Works & Transport	6,801,250	12,800,100	2,625,000	23	22,226,350
Natural Resources (Water & Electricity)	1,875,000	217,500	0	2	2,092,500
All Other Sectors	26,653,324	25,644,207	21,726,517	75	74,024,047
Total	35,329,574	38,661,807	24,351,517	100	98,342,897

Note: US$1.00 = 8 Maloti. **Source:** Ministry of Finance and Development Planning.

11. Lesotho Ministry of Finance, "Finance Circular Notice No. 14 of 2002."

been created by the GOL, as with the Road Fund, for instance, measures must be taken to make them inviolate and insulate them from general expropriation to meet pressing of government cash needs. If this can be achieved, there is greater promise that the private sector will embrace the risk of entering into long-term contracts backed by public funds.

Business Environment and Investment Regime

Lesotho has a dualistic private sector. On the one hand, the country enjoys a high degree of FDI, remaining above 3% of GNP since the late 1980s. On the other, the domestic private sector is severely under-developed and there has been little spill-over from FDI to growth and innovation in the indigenous business sector. The business climate appears to present some attractive features favoring FDI, but far fewer that are attractive to the domestic private sector. This is principally because domestic businesses are concentrated outside the manufacturing sector and are therefore not advantaged by the industry-orientated tax regime. Attractive features of Lesotho's investment regime include:

- A liberal economic regime which places no restrictions on activities open to investors (except for small-scale industries with fewer than 10 employees which are reserved for Basotho citizens).
- Low flat tax rates (15%) on profits in manufacturing companies whether local or foreign.
- No withholding taxes on dividend remittances and ease of access to foreign exchange.
- Facilitation services for foreign investors managed by the Lesotho National Development Corporation (LNDC), a government parastatal.
- Respect for international intellectual property laws and the domestic rule of law.
- No limitations on ownership shares and no history of expropriation.
- A cheap and disciplined labor force.
- Proximity to the South African market.

These features, added to the trade preferences enjoyed by Lesotho under the Multi-Fiber Agreement and the Africa Growth and Opportunities Act, largely explain the country's high degree of success in attracting FDI. Leaving aside FDI attributable to the LHWP, most FDI has gone into the export-oriented clothing sector (38 out of an estimated 55 companies). However, deficiencies in the business environment do exist, and, unless addressed, they may impede future flows of FDI and the emergence of a domestic private sector. These can be divided into three main groups as described below: (1) the underdeveloped status of basic infrastructure, (2) human capital deficiencies, and (3) administrative barriers to the efficient conduct of business.[12]

Underdeveloped Status of Basic Infrastructure

- High transportation costs due to Lesotho's land-locked position are exacerbated by the inadequacy of Maseru's railhead, a shortage of handling equipment, and the effective oligopoly of the trucking industry.
- Electricity supply is frequently disrupted, and its cost is higher than in South Africa.
- Water in Maseru is in short supply, and this has become a major impediment to further industrial expansion. Moreover, the garment industry discharges large volumes of untreated industrial water into the watercourses, contributing to pollution and making imperative a water treatment plant for the industrial sector.
- Insufficient capacity for broadband Internet and related info-communications technology.
- Factory shells suited for manufacturing industries have traditionally been leased only through the LNDC; thus, industrial expansion has been constrained to the LNDC's capacity to meet demand. LNDC shortcomings (which are ultimately a reflection of the limited availability of government resources for capital investment) are viewed by some as limitations to FDI, while viewed by the domestic business sector as unfavorable to domestic private investment.

Human Capital Deficiencies

- While Lesotho's literacy rate is among the highest in Sub-Saharan Africa and levels of secondary enrollment are impressive, the productivity of labor is judged by investors to be quite low (50% of the level in Asian countries), and managerial and technical jobs are almost exclusively awarded to expatriates. The lack of exposure of Basotho to such leadership positions has contributed to the nondevelopment of backward linkages into the econo-

12. Government of Lesotho, "Lesotho Integrated Framework Diagnostic Trade Integration Study, Volume 1: Barriers to Integration into World Trading Environment." Unpublished draft of a study initiated by the GOL and coordinated by UNDP and the World Bank.

my and the virtual absence of locally owned larger firms.
- Whether a cause or an effect of current practices, it is clear that entrepreneurial skills among Basotho are in short supply. Pro-growth development strategies of the future must embrace the challenge of fostering business skills among the domestic population. This topic is addressed further in the discussion of Basotho contractors below.

Administrative and Legislative Barriers to Business

- Outdated legislation, such as the Licensing Act of 1969 and the Companies Act of 1967, still shape the industrial climate despite a movement away from import-substitution industrial policy (Kumar 2002). The Companies Act of 1967 stipulates unduly complex procedures for registration and licensing to establish a firm in Lesotho.
- Although the LNDC is available to assist foreign investors address registration requirements, there is no "one-stop" shop per se, and it requires an excessive amount of time and patience to establish a new business in the country. The same complaint is registered by domestic business-people. The Foreign Investment Advisory Service of the World Bank suggested a proposal for a one-stop shop in 1997, but this initiative has faded.
- A draft of a new company law simplifying registration processes and procedures was prepared and debated in 1998, but to date it has not been enacted.[13] There is no formal investment code, nor an identified strategy vis-à-vis the targeting of investors.
- Land legislation is another significant deterrent to foreign private investment. Under the Land Act of 1979, land cannot be held by an individual of foreign or non-Basotho origin. As a result, the LNDC has been designated as the title-holder of all industrial land in the country, and it has been its responsibility to allocate land through subleases to private industry. This practice has entrenched the role of a parastatal in the FDI investment chain rather than alternative approaches that could, perhaps, empower partnerships between domestic and foreign private businesses.
- The term of industrial land leases is currently limited to 30 years. This short time period does not match the recovery period needed to make a return on heavy infrastructure and it encourages "footloose" investment. It is a significant disincentive to investments of a more permanent nature and impedes the use of land as a collateral asset for commercial borrowing. Land issues are discussed further under environmental matters below.
- While the tax regime favors the manufacturing sector, the services sector is discriminated against by a 35% tax rate on profits, which amounts to a serious impediment to direct domestic investment.
- Basotho businesses carry a heavy cash burden related to value-added taxes (VAT) on imported goods from South Africa. Business-people departing from the Republic of South Africa (RSA) with South African goods claim back their 14% VAT from the RSA Revenue Authority. It takes weeks to months before the applicable cash is remitted, and only then after RSA withholds a 2.5% deduction as a service charge. Yet, upon entry into Lesotho, importers need to immediately lay out an additional 10% for domestic VAT before the goods can be brought into Lesotho. Basotho-owned businesses believe their cash flow is being used to finance both South African and Lesotho fiscal operations.

These constraints in the business climate have been identified through numerous official studies as well as by the private sector. Many remedies have been suggested in the way of policy, legislative, or institutional change, and the imperative now is to move ahead with implementation. Complementing this, there is a need to establish a forum for regular interaction between the public and private sectors, and Lesotho policymakers would do well to harness the energy of their emerging business class in this regard.

Reform Initiatives and Privatization Policies

After independence, industrial policy was initially based on a strategy of import-substitution, and this led to a mushrooming of the parastatal sector. It likely had the added detrimental effect of inhibiting growth of the domestic private sector. Embedded within the import-substitution strategy was a related effort to reduce Lesotho's dependence upon infrastructure and utility services sourced from South Africa. In short, Lesotho actively sought economic inde-

13. "Lesotho Growth and Employment Options Study."

pendence rather than interdependence. To that end, for example, Lesotho'set up the Lesotho Electricity Corporation (LEC) to handle transmission and distribution of electricity supplied by Eskom, the South African electricity parastatal. As soon as feasible, the nation installed its own generating capacity in the context of the LHWP to free itself from dependency on South African generation alone.

However, the parastatal sector grew to become an obvious fiscal burden on government, providing little contribution to economic growth and employment generation. As a result, the GOL embraced a program of structural reform in 1995 to disengage the public sector from the commercial arena. The legal foundations for privatization were established in the highly flexible 1995 Privatization Act, which, given adequate political will, can facilitate almost any kind of public-private transaction, including future models of PPI in infrastructure. The act established the Lesotho Privatization Unit (LPU) as a corporate entity, vesting it with the power to enter into contracts, acquire, hold, and dispose of any property as well as sue or be sued. It further instructed the LPU to plan, manage, implement, and control the privatization process in Lesotho'subject to the direction of the Finance Minister. In practice, the Finance Minister seeks Cabinet endorsement of the terms for each transaction. Experience to date shows that unless the Cabinet enthusiastically supports the privatization plan, significant delays and failed transactions can ensue.

There have been positive and negative aspects to Lesotho's privatization program. On the positive side are the proceeds generated (250.3 million Maloti [US$31.29 million] to date), the de-monopolization of grain trading and flour milling, the introduction of significant private investment and competition within the communications sector, and the creation of transaction capacity within the LPU. On the negative side is the resistance to change mounted by incumbent parastatals (reflected in massive delays to progress), an apparent reticence to embrace FDI from the region, a failure to gain direct Basotho participation in privatized entities, and inadequate monitoring of public-private contracts which endure after a transaction has been closed.

In several cases, the economic benefits of transferring an activity from public to private hands did not materialize to the extent desired. For example, the divestiture of Lesotho Bank redressed a major problem of insolvency in that public institution, but because no complementary measures were taken to license other private entrants into the market or foster micro-finance institutions, it contributed to the decline of competitive forces within the banking sector. With the privatization of government's vehicle pool, total consumption costs went from being largely hidden (where rampant fraud and misuse were the norm before privatization) to being transparent but high. Control measures and incentives to contain the costs of private motor service provision were inadequate, and citizens now question whether private participation in service delivery has been an improvement or not. These examples serve to highlight the possible negative consequences of PPI where post-transaction monitoring capacity is insufficient to safeguard government financial resources and ensure outcomes in the public interest.

The lesson to be drawn is not that privatization is a failure, but that Lesotho must expand and deepen its capacity to implement PPI and undertake post-transaction monitoring, particularly where there are enduring contracts between public and private sectors. Without such capacity, the fiscal and economic gains of privatization or PPI may not be realized. The need to create and strengthen PPI implementation capacity cuts across all of the infrastructure sectors reviewed and must be addressed if the GOL is to embark upon a successful program of PPI.

Competitive and Transparent Procurement Procedures for PPI

Private investors want assurance that public procurement procedures reflect a level playing field, regardless of whether these are implemented in the context of privatization or divestiture transactions or in the context of government-sponsored procurements for goods and services. Lesotho has encountered some difficulty with this topic in the past, not in the privatization program where World Bank procurement policies have been the norm, but in the LHWP, where corrupt practices on the part of domestic and foreign companies were discovered. The good side of this development is that Lesotho has acted vigorously to root out corruption in the LHWP scheme and has made use of the court system to punish domestic perpetrators and go after international companies alleged to have participated. This has sent a clear message to domestic and foreign companies alike that corrupt procurement practices will not be tolerated in Lesotho.

Recently, the government convened a task force to revis-

it the procedures of the Central Tender Board to make it more responsive to calls for timeliness and transparency. This reform initiative is still under way. One dimension that merits added consideration is measures to shore up affirmative procurement approaches to enhance the participation and empowerment of Basotho contractors. This issue is discussed further under domestic contracting capability below. Yet, Lesotho encounters a difficulty with respect to the standardization of procurement procedures insofar as 64% of the capital budget is contributed by donors via loans and grants. Inasmuch, Lesotho is bound to honor the respective procurement policies of its donor partners in a majority of instances. This is not unusual for countries that rely heavily on donor aid, but it does point to the need for government's own core policies to embrace the competitive principles of the international community. This will be particularly important if donors are to contribute to output-based aid schemes in support of rural infrastructure expansion. It is recommended that, if government eventually erects a PPI unit within government, that it establish a formal link with the Central Tender Board, through resource sharing or secondment, and that the latter participate in the elaboration of transparent competition rules pertaining to PPI.

Financing Environment for PPI

Domestic finance for PPI is constrained, and foreign investors may need to look to regional sources of finance (which are in reasonably abundant supply) or international sources of debt or equity capital. Lesotho's own financial system has recently undergone radical change. The government-owned commercial banking system was transformed into private commercial banks as part of Lesotho's privatization effort that began in 1995. There are now three commercial banks in Lesotho: Lesotho Bank Ltd., 70% owned by Standard Chartered Bank of South Africa; and branches of the major South African banks, Nedbank and Standard Bank. According to the Central Bank of Lesotho, the Standard Bank and Nedbank duopoly owns 80% of the total financial sector assets in Lesotho. Ownership concentration in the banking sector has led to significant spreads between lending and deposit rates, making domestic financing for PPI costly if domestic bank sources are to be used.

The two commercial banks operating in Lesotho are taking advantage of the relative lack of competition to engage in what appears to be de facto cartel-like pricing, with deposit interest rates consistently below those in South Africa and lending rates consistently higher. The prime rate hovers around 17%; and lending rates can be as high as 27% depending on risk. Ninety-day treasury bills recently paid 13%, while few deposit interest rates exceed 5%.[14]

Most of the Lesotho bank deposits fund South African loans due to the limited market for Lesotho consumer loans. The banks typically do not lend to Basotho business due to high risks associated therewith, a history of nonpayment of bank loans under the government-owned banking system, and the perceived high risks of small and medium-size businesses in general.[15]

In addition to substantial spreads between deposits and lending rates, another obstacle to domestic finance for PPI projects is the limited yield curve in the domestic financial market. The yield curve, set by GOL borrowing, is short, with government borrowing usually less than one year, but on occasion in the 10-year range.

The government banking system has shrunk to include the Central Bank that supervises the financial system, and two development finance institutions, the LNDC and the Basotho Enterprise Development Corporation. The LNDC provides investment support primarily to downtown redevelopment projects after the 1998 social unrest and improvements related to industrial parks. The Basotho Enterprise Development Corporation is dedicated to capacity building for Basotho small businesses and provides some degree of financing for their business activities. These institutions have limited financial capacity to expand beyond their traditional roles, although the LNDC could encourage greater private involvement in some of the infrastructure improvements needed for the industrial estates.

In the rural sector, formal banking is almost nonexistent, except for micro-finance institutions such as credit cooperatives. Savings facilities are inadequate, as about two-thirds of total bank branches are located in main cities. Closure of the Lesotho Agricultural Development Bank in 2000 and its

14. World Bank, *Lesotho's Financial Sector Review: Key Issues and Recommendations*, 2003.

15. Part of the reason for the past high loan default rate is the legal framework, which is biased toward debtors. Loan recovery is very difficult and involves a protracted, lengthy court process.

large branch network made the situation worse. This lack of access to saving, credit, and payment services hampers the ability of domestic private sector firms to undertake productive investments. Poor households also cannot accumulate assets and engage in economic activity for daily survival and income generation.[16]

In spite of these constraints, the informal sector has a tradition of savings societies, which is currently under study by the Central Bank for application to a rural credit scheme. The rural credit scheme is an attempt to marry the social structure of traditional savings societies with the credit requirements of commercial banks. The basic idea is for commercial banks to provide commercial rate loans to groups of villagers for income-producing activities. The Central Bank may provide a loan guarantee of up to 50% of the loan. The commercial bank assumes a 30% risk, and the community provides collateral for the remaining 20%. Loan applications submitted by the group for their income-generating business are evaluated with standard commercial bank credit criteria. The government is also considering reopening the rural postal savings banks as an element of the rural credit scheme, but a clear business plan has not emerged at this time.

Nonetheless, the wider Southern African Development Community region surrounding Lesotho offers a wide array of financing sources from both commercial lending institutions as well as development and industrial banks. Therefore, financing obstacles to PPI in Lesotho are related more to the risks associated with an infrastructure investment and the credit condition of the sponsoring company than they are to funding supply constraints. The more significant project risks are linked with the factors that generate the income to repay loans. This observation lends weight to the imperative that Lesotho revisit its tariff levels with respect to grid-based utility services and move swiftly to embrace policies favoring full cost recovery and the financial sustainability of utility companies. There are several other indirect risks that impact revenue generation such as legal, regulatory, and political risks for PPI projects.

Environment, Land Use, Urban Planning, and Biodiversity Issues

All land in Lesotho is held in the custody of the king on behalf of the nation; thus, only leasehold and servitude rights in land are possible. The Land Act of 1979, and the Town and Country Planning Act and Survey Act of 1980, among others, provide the laws that govern the relationship between the king and land users. However, the laws are not clear on many issues that can influence private investment decisions. There are, for example, no transparent mechanisms to deal with land disputes, the transfer of leasehold rights between parties, the government process of land expropriation and compensation, the responsibilities for provision of infrastructure services on developed land, regulations that govern zoning modifications, and other land development issues that have a significant bearing upon private investment.

Of particular significance to PPI in urban settings are the lack of land use planning and a workable process for the decentralization of service responsibilities from central to local governments. The Environment Act of 2001 makes provision for integrated land use planning at the national, district, and local levels. A study was conducted on how this might be accomplished, but there is presently no clarity on whether this process contradicts or supports other planning legislation and the impact of the integrated land use planning process on infrastructure planning and development. Any proposed development will presumably also need to contain a structured plan provided for in the Town and Country Planning Act of 1980. The lack of an integrated approach to planning and permit approvals contributes to the confusion. Confounding this situation is the current process of decentralization to transfer the provision of infrastructure services from the central government to local governments.

Another major impediment to foreign investment is the law governing foreign leasehold rights. Foreigners may obtain leasehold title only if they are in a 50% equity partnership with a Basotho individual or company. Yet, the shortage of domestic capital can act as a barrier to the formation of such ventures. Current policy does include rules enabling foreign investor rights in land and security of tenure, though it falls short of allowing full freehold title.

Experience with these problems has led the government to reexamine land policies and laws. A draft land policy is currently under review by the Cabinet, but it conflicts with some of the clauses in existing land-related laws and does not resolve the difficult political issue of freehold versus leasehold land rights. Consequently, before the GOL can

16. World Bank, Financial Sector Memo, 2002.

implement the revised land policy, a new land bill will have to be compiled and passed by Parliament. The schedule for passage of the new law is not known, but it should constitute an important priority for the GOL.

The Lesotho Environment Act of 2001 creates a framework for environmental impact assessments (EIAs) related to infrastructure and other projects. The act requires EIAs for virtually all new infrastructure sector installations. The National Environmental Secretariat (NES) has been established to review and monitor this process. However, the intent of this legislation can only properly be applied after the promulgation of detailed regulations. The regulations have been in draft form for three years, and it is not clear when they will be completed. This creates significant uncertainty regarding environmental requirements for private projects and is thus an impediment to PPI and the expansion of infrastructure.

In addition to filing an EIA, the NES has added a public consultation process and additional technical requirements to the process. These are applied without distinction to small and large projects in both highly degraded and 'pristine' landscapes. This suggests a "one size fits all" approach to environmental regulation, which could have the result of deterring private investors. The consultation process may duplicate full EIA requirements, and the time and expense required for public consultation may be out of proportion to the potential environmental safeguards that would result. Apparently this approach is contentious within the NES itself, and proposals have been made to refine the guidelines to distinguish among different sizes/types of project. This is the type of adjustment that would take account of a "light-handed" approach to regulation where appropriate, and GOL attention to this distinction is highly recommended.

Another area of risk for private investors is the lack of regulation for pollution emissions. The Act includes control over all forms of pollution, but regulations regarding standards have not been promulgated. Until the regulations are completed for the Environment Act, project sponsors face significant uncertainty about environmental impacts associated with their projects and the interpretation of the Environment Act by the NES. This is especially important for potential PPI projects associated with wastewater treatment plants in the industrial areas.

The Water Resources Act of 1979 makes it obligatory to obtain a water permit from the Department of Water Affairs (DWA) for any proposed water use, be it abstraction or wastewater disposal. Conditions are attached to the permit, such as effluent discharge standards, limits on abstraction, etc. Although the Environment Act will take precedence over all other legislation once its regulations have been promulgated, it is expected that the DWA will continue to be the regulating authority for matters pertaining to the use and disposal of water. There is a potential conflict between the NES and DWA regarding authority over water use regulation and permit control. This will increase regulatory risks for potential PPI investments in wastewater treatment plants associated with business investment of industrial sites.

Box 2.1: Protecting Lesotho's Diverse Environment

Lesotho has many physically and biologically sensitive areas that are subject to environmental degradation. Sensitivity of infrastructure projects, including PPI, to these areas is crucial to sustain the social and economic benefits of this diverse landscape.

The highlands region is a regarded as a center of endemism (a biodiversity 'hotspot') of continental and global significance. Very little of it is formally protected, and there are fears that infrastructure extension may have direct negative effects on biodiversity (species and habitat destruction). Indirectly, by improving access into the previously isolated regions, it will also allow for further exploitation and intensification of poor land use practices, leading to further land degradation and biodiversity loss.

Lesotho has compiled a Biodiversity Conservation Strategy, but lack of resources and political will continue to compromise its potential effectiveness. There is, in effect, a low risk of sanctions being applied for biodiversity destruction; it remains largely a responsible governance/ethical issue. New developments, including infrastructure, should nonetheless consider its provisions.

The highland wetlands are critical habitats for the regulation of river flow and water quality, as high-quality water is one of Lesotho's most valuable natural resources. The location and design of infrastructure in the highlands must take account of these sensitive habitats and minimize any negative impacts to their sustainability.

Water supply developments in rural areas frequently involve the capturing of springs, a procedure which frequently leads to the diversion of the water from the surrounding wetlands, leading to their desiccation. This has disastrous consequences for such ecological processes as flood attenuation, and leads to a cycle of erosion, land degradation, and declining water quality of overland flows.

Capability Assessment of Local Contractors

The development of Basotho contractors involved in construction and infrastructure services began in the late 1980s stimulated by the LHWP, and it has gained momentum under recent public procurement initiatives in the roads, electricity, and water sectors. Under LHWP, Basotho workers learned

various electrical, civil works, carpentry, plumbing, and other crafts working with foreign contractors building the Katse Dam and ancillary facilities. Some of the workers on these projects formed their own companies and were able to subcontract to the larger construction firms on the LHWP's second phase. Some smaller contractors remained in the highlands and worked with the Department of Rural Water Supply to install and maintain village water systems.

A second impetus for the development of private contractors was the Road Rehabilitation and Management Program funded by the World Bank to rehabilitate and maintain Lesotho's road network. The larger Maseru-based private contracting companies that had taken root under the LHWP were able to bid on some of the larger Road Branch rehabilitation contracts for the road network's paved arterials. The Ministry of Public Works and Transport's Department of Rural Roads has since trained numerous local contractors to upgrade and maintain the gravel and earth road network. As of 2002, approximately 56 Basotho received contractor certificates and are registered with the Department of Rural Roads to perform small-scale road maintenance and construction work.

The development of local contractors has also been stimulated by the office, retail, and factory shell building boom funded by the GOL capital budget in recent years. The Department of Building Services of the Ministry of Public Works and Transport uses local contractors in the C and D classification categories (below 350,000 Maloti [US$43,750] contracts) in this new construction. Local contractors cannot comply with the qualification criteria for contracts over 350,000 Maloti (US$43,750); these are usually awarded to RSA firms or their local subsidiaries.

Privatization of the Lesotho Telecommunications Company and the reform of the LEC have also contributed to the development of local contractors, both as installers of connections and as operators of small telebureau businesses. In the Interim Management Task Force contract for operation of LEC by a private consortium, the GOL obliged the operator to use 60% domestic contractors to execute 8,000 additional connections. Though the task force trained local contractors to connect households to the grid, they were not able to fully comply with the requirement due to a lack of local contracting capacity. In the end, only 6 of a planned 67 contractors were hired. Nevertheless, the LEC has had some success in developing local contractors for general installations. Most electrical contractors are former LEC employees who can undertake installation of up to 11 kilovolt lines exceeding 3.5 kilometers. High-end installations involving the erection of substations, transmission lines, and the like are still beyond the capability of local contractors.

In spite of this considerable amount of construction activity and participation of local contractors in the GOL-funded projects, Basotho contractors still suffer from the following challenges:

1. Insufficient capital and financial strength to compete with RSA firms for large contracts.
2. The lure of employment in South Africa to trained Basotho craftsmen.
3. The relatively weaker project management and proposal preparation skills of Basotho contractors as compared to their RSA competitors.

These observations emphasize the need for the GOL to continue building Basotho contracting measures into future contracts of a PPI nature in order to maintain momentum in building domestic contracting capacity and the creation of a domestic class of entrepreneurs.

Comparison of Infrastructure Coverage in Lesotho and the Region

This section begins with a synopsis of the current status of infrastructure coverage in each key sector within Lesotho and then expands the comparison to the benchmarks achieved in other countries from the region and beyond in **Table 3**. As such, this analysis offers a comparative snapshot of relative progress achieved in each sector to date, the details of which are further explored in the respective sector chapters of this report.

Electricity Sector

Only 7% of Lesotho's population currently has access to grid-based electricity since expansion by the state-owned LEC has been stymied by a decade of tariffs set below cost and a consequent lack of internally generated investment capital. The encouraging outlook is that the country is now preparing the privatization of the LEC, and this should accelerate electricity connections beyond the current level. However, expansion of the current distribution grid is most viable in the peri-urban and urban areas, and poverty will present constraints to further commercial expansion. Rural electrification is a major GOL priority, and pilot initiatives

will embrace innovative generation technologies and seek to test alternative financing and subsidy techniques, along with the involvement of the private sector.

Water Sector

Lesotho has relatively good access to water and sewer services in relation to other African nations. However, the coverage indicator in Table 3 (91% water coverage) includes access to safe water through both formal and informal sources. Access through formal sources (house connections and public standpipes served by the Water and Sanitation Authority [WASA]) in urban areas is only around 30%.[17] There is a shortfall of formal water supply for new business and residential uses in the capital, implying high investment requirements for water production and extension of the reticulated network to the urban periphery. One of the main short-term policy challenges is to transition towards cost recovery tariffs (especially for industrial users) and to set targeted subsidies for the poor. Although significant progress has been made, a second challenge is to complete and implement the much-needed institutional reforms, including the establishment of a regulatory body. Opportunities for private participation in the water and sanitation sector exist, but government is taking a cautious approach towards PPI. The GOL will begin by concluding a performance contract with the state-owned WASA before moving toward greater private participation in grid-based water supply, distribution, and sanitation services. In the rural areas, private participation will most likely take the form of private maintenance contracts and connection services but will require government support in the form of line item budget transfers or connection subsidies. To foster further private participation, the government should establish coverage, service quality, efficiency, and cost baseline indicators in a contractor's service area to measure the impact of private participation on sector outputs and assess the value the government receives for any grants or subsidies.

Telecommunications Sector

Telecommunications sector reforms are relatively more advanced than other sector reforms in Lesotho, but, with fixed and mobile teledensity reaching only 6% in total, the country is still only on par or behind many Sub-Saharan countries in this area. Fixed-line telephone connections are low, but wireless subscriptions outnumber fixed lines 2.6 to 1 in line with regional trends, and there is an increasing diversity of advanced communication services now entering the market. Penetration into rural areas is still lacking, and Internet access and quality are, generally speaking, poor. Nonetheless, the sixfold expansion in telephone subscriptions achieved since the beginning of reforms provides testimony to the value of sector reform and how private operation of regulated utilities can effect a turnaround in utility performance and sector expansion.

Transportation Sector

In the transportation sector, Lesotho has a higher proportion of paved road network than most countries with a lower GNP, but it is substantially behind South Africa and Botswana. Survey respondents indicated that road conditions in Lesotho were not good, and the country faces a significant challenge to catch up to South Africa and Botswana in this regard. A critical issue for the country is to maintain the existing paved road network that links to the South African highway system in order to maintain the competitiveness of Lesotho's garment industry. Since Lesotho is land-locked, improved highways should help maintain lower truck cargo costs.[18] Greater efficiencies and private participation in road maintenance may also help lower such costs, but as with the water and sanitation sector, government must first establish baseline conditions and then define specific output performance indicators to measure private contractor compliance. The rail and air transportation subsectors are very limited in Lesotho; indicators associated with these subsectors are provided in Chapter 5.

Table 3 (next page) assembles key indicators of Lesotho's present infrastructure endowment. These data benchmark Lesotho's infrastructure against that of other Sub-Saharan African countries, arranged in descending order of per capita GNP. Ten comparison countries were chosen, encompassing a broad range of per capita GNP, thereby illustrating Lesotho's infrastructure position relative to Sub-Saharan countries that are poorer, at about the same level of development, or more advanced. Lesotho's poverty and historic orientation towards public sector delivery of util-

17. World Health Organization, *Africa 2000—Initiative for Water Supply and Sanitation Sector Assessment,* 2000, p. 151.

18. There are many other factors that influence trucking costs, especially competitive pressures exerted by the rail sector. See Chapter 5 for a discussion of rail-truck cargo competition.

Table 3. Comparative Infrastructure Benchmarks for Lesotho and Selected Countries in Sub-Saharan Africa

	GNP, Per capita (1998) US$	African Competitiveness Ranking	Fixed Phone Lines Per Capita	Phone price (1)	Internet Access (2)	Electricity Consumption Per Capita (kWH) (3)	Paved Roads (as a % of total roads)	Quality of Road Infrast. (4)	Air transport Cost (5)	% of Pop. with access to safe water (6)	% Urban pop. with access to sanitation
Mauritius	3,700	2	0.024	2.57	1.95	1,007	97	NA	NA	100	99
Botswana	3,600	3	0.058	2.79	2.06	912	23.5	2.05	2.92	100	NA
So. Africa	2,880	7	0.107	2.96	1.83	3,745	41.5	2.41	2.72	86	86
Namibia	1,940	4	0.056	2.60	1.62	490	8.3	1.85	2.77	77	41
Swaziland	1,400	10	0.320	3.32	2.50	803	NA	2.64	3.41	NA	NA
Zimbabwe	610	23	0.017	3.62	3.02	845	47.4	3.42	4.13	85	68
Lesotho	**570**	**13**	**0.010**	**3.30**	**2.83**	**50**	**17.9**	**3.52**	**3.53**	**91**	**92**
Zambia	330	12	0.008	3.65	2.49	556	18	3.45	3.94	64	78
Uganda	310	17	0.002	2.91	2.76	53	8	3.36	3.20	50	75
Tanzania	210	14	0.003	3.13	2.17	894	4.2	3.52	3.42	54	90
Mozambique	210	18	0.003	3.93	2.92	52	18.7	3.97	4.22	60	43

Notes:
(1) Based on survey data: 1= very good, 6= very poor.
(2) Based on survey data: 1= very good, 6= very poor.
(3) Source: African Development Indicators, yr. 2003, for Zambia, Tanzania, Mozambique, and Zimbabwe; all others The World Energy Council and CIA *World Factbook*. African Competitiveness only provides survey data on company use of individual diesel generators if the respondent feels that utility enterprise electricity supply is unreliable or fluctuating.
(4) Based on survey data: 1= very good, 6= very poor.
(5) Based on survey data: 1= very good, 6= very poor.
(6) African Development Indicators, year 2003. Botswana is urban only, all other is Total of urban and rural population.

ity services is reflected in the mediocre coverage statistics, but reasonable competitiveness of its infrastructure as compared to its peer group. This is the case with the exception of access to water, but the latter data require some interpretation. Indeed, Lesotho enjoys a natural endowment in water resources, and is therefore able to provide access to the bulk of its population through simple rural water supply schemes. Yet, statistics on the reach of the urban water utility presented above reveal that the urban reticulated network is relatively underdeveloped.

While it would be desirable to also compare sector-wide indicators reflecting service quality and efficiency, these have not been included, principally because Lesotho does not collect, track, and report such data on a regular basis. Efforts should be made to redress these data gaps in the future since baseline performance data are critical to the successful introduction of PPI. Thus, the benchmarks presented include only those indicators that are available for Lesotho and all the other comparison countries selected.[19]

On the whole, Lesotho's infrastructure is about in the middle of the pack, except with respect to energy consumption where it is sorely behind. Lesotho's sector rankings are consistent with the country's overall Competitiveness Ranking, at 13 out of a total of 24 countries included in the Africa Global Competitiveness Index. Lesotho's very low energy consumption relative to its per capita GNP stands out as a significant constraint to further economic development.

Sector Reform Status and Cross-Cutting Challenges

As the sector reviews in this report will make evident, Lesotho has embarked upon sector reform and has embraced PPI to different degrees and with varying records of success in its key infrastructure sectors. A comparison of progress by sector including policy, legal, regulatory, and institutional dimensions of reform is summarized in **Table 4.**

This comparison of Lesotho's infrastructure sectors sup-

19. The World Economic Forum's "Global Competitiveness Index" is used to illustrate infrastructure benchmarks for 10 Sub-Saharan countries, including Lesotho. This index evaluates the global competitiveness of 24 African countries. The Global Competitiveness Index is designed to predict medium- to long-run growth potential over a long time horizon. It combines existing quantitative data for a large number of variables that affect economic growth, including infrastructure coverage, cost, and quality data; and qualitative data about institution performance and the business investment environment, gathered on a survey basis. Whenever a benchmark was not available for a country in the *Africa Competitiveness Report,* we used *African Development Indicators 2003* or other sources, as indicated.

Table 4. Summary Comparison of Sector Reforms within Lesotho

	TELECOMMUNICATION	ELECTRICITY	WATER/WASTE WATER	TRANSPORT (ROAD)	OTHERS
Stage of Sector Reform	**Advanced:** Policy, regulation and operation have been separated. Parastatal privatized. Competition among private operators in fixed-line, wireless and Internet services.	**In Transition:** Parastatal currently under management contract. LEC privatization via concession under preparation with potential competition in supply territory. Developing a program for rural electrification.	**Slow:** • Legislative reform in preparation. • WASA plans to sign a performance agreement with the Ministry of Finance and Development Planning, but tariff reform must first reconcile industrial policy to attract wet industries on basis of competitive utility services and infrastructure offered below full cost.	**Limited:** Road sector is fragmented among many public institutions with serious overlap of functions. Many of them have their own planning, policy functions while maintaining force account activities.	Freight transport: No reform planned, though competition is needed to bring down freight costs and improve competitiveness of Lesotho as a manufacturing location.
Legislation	Recent: Lesotho Telecommunications Act of 2000.	Recent: Lesotho Electricity Act of 2002.	A Water & Sanitation Reform Bill introduced into legislature, but it lacks a comprehensive approach.	No recent reform legislation, but consolidation of road institutions into super agency will require it.	Recent: Environment Act of 2000.
Policy Bodies	• MOCST's role defined in LTA Act as policy formulation, monitoring, and facilitation. • Policy function needs to be strengthened and MOCST needs to remain engaged with the regulator, LTS. • MOCST expected to facilitate government information strategy.	PSPC sets policy with MONR and Ministry of Finance and Development Planning. Implementation is fragmented (DOE, LEC, LHDA, LEA, ATS, etc.)	• PPSU sets policy with DWA, DRWS, LHDA, WASA. Coordination is weak. • Comprehensive legislation needs to be developed. • Further confusion could arise from the decentralization process.	GOL plans to create Road Agency, a super agency that will subsume all road functions (policy, construction, fund raising, resource allocation) controlled by a Board. Approach has potential conflicts of interest.	• Freight Transport: Traffic and Transportation Department (only for truck freight) • NES is in the process of developing environmental policy
Regulation	• LTA Act established Lesotho Telecommunications Authority in 2000. Administrative rules and procedures have been published. • Rapidly accumulating experience in the sector regulation • LTA has degree of policy responsibility (e.g., universal access)	LEA Act will give rise to Lesotho Electricity Authority during 2003. Regulations undergoing revision to reflect concession approach to privatization.	• No sector regulator exists, though GOL recognizes the need for one. • Environmental regulation in the realm of the Environmental Secretariat, but no regulations have been issued.	• No independent body exists to assess the policy or implementation performance. • Road Agency may have a regulatory role in the future.	• Freight transport: No tariff regulation. No regulation for the rail services. • Aviation: Department of Civil Aviation
Operators	• Operation is all private. • TL, VCL, Ezi-Cell, 3 Internet Service Providers, 1 Calling card, 1 data service, 770 telebureaus • Substantial investment capital is pouring into the sector sourced through private operators.	LEC, parastatal under mgm't contract, buys power from domestic/ regional generators & distributes it. To be privatized via concession. Private generation on very small scale.	• WASA, a parastatal underserving the urban area. DRWS, LHDA, NGOs in the rural area. • Private vendors resell urban water at extremely high prices.	Major construction and maintenance services are still provided through force account activities in various government institutions.	• Freight transport: Spoornet (SA) operating under expired concession. • Aviation: Department of Civil Aviation operating international and regional aerodromes.
Tariff/ Operational Sustainability	Fixed-line tariff is set at full cost recovery with a price cap. Wireless tariffs are competitively set by the operators but monitored by LTA. No government transfer involved.	Tariff has not been revised in the past 10 years. For operating income of around 100 million Maloti, LEC is losing over 30 million Maloti annually.	WASA tariffs set below operating costs in wastewater, sewerage, and some potable water bands. Must increase if WASA to be sustainable. Rural water supply has no tariff and has been heavily dependent on donor contribution.	Road fund needs to be focussed to keep up with Increasing maintenance demand.	Freight Transport: No tariff regulation. Trucking industry is oligopoly. Solid waste: Tariff is far below cost recovery level (2%).
Local Participation	Local private sector already participating actively as telecenter operators, vendors, and contractors.	Local electricity contractors are capable of MV/LV line installation but lack capacity to procure materials and equipment.	DRWS has a program to use small informal contractors. WASA's program to outsource collection from conservancy tanks is not performing well.	RB and DRR have begun to implement private sector contracting mainly in routine maintenance.	Aviation: Revenue of the international airport is less than 20% of its operation cost. No budget to maintain regional aerodromes.

	TELECOMMUNICATION	ELECTRICITY	WATER/WASTE WATER	TRANSPORT (ROAD)	OTHERS
Sector-Specific Issues	• Lack of bandwidth and high-speed Internet service is a major impediment to private sector development. • Low fixed-line tele-density, especially in rural areas. • High cost of regulation.	• Frequent supply cuts/power surges hamper the development of industries that require continuous manufacturing processes. • Low service coverage in rural areas.	• Demand in urban peripheries exceeds the supply. If wet industries were to treat and recycle their wastewater, existing supply could be better rationalized among competing users. Full cost-recovering tariffs would send correct incentives to industry, but might compromise Lesotho industrial competitiveness. Water quality standards important for Lesotho to retain trading status with garment importers. • Inadequate sewerage and wastewater treatment. Affordable regulation needed for reticulated water supply and a light-handed approach needed for rural PPI.	• Overlap of government agencies responsible for road design, construction, and maintenance. • Lack of reliable database. • Pace of new road construction exceeds the financial capacity for recurrent maintenance. • Force account is displacing the local private contracting opportunities.	Freight transport: Rail branch concession has expired, and Spoornet is not strongly motivated to maintain its operation, hence Maseru railhead is at risk of becoming a noncompetitive spoke in the supply chain.
Cross-Cutting Issues	High de facto cost of regulation per capita.	• Need for regulation: both for grid-based supply and light-handed regulation to encourage PPI in rural electrification. • Absence of environemental regulations creates uncertainty. • Blanket subsidies & below cost recovery tariffs obstructs expansion and investment, and accumulates nonpayment to the LHDA.	• Need for regulation in potable water distribution systems: both for reticulated supply and light-handed approaches for rural supply. • Absence of environmental regulations creates uncertainty. • Blanket subsidies and below-cost recovery tariffs in some urban potable water bands (WASA) and in urban wastewater disposal. • Low or no tariffs applied in rural schemes undermines international sustainability. Absence of environmental regulations creates uncertainty.	Absence of environmental regulations creates uncertainty.	Absence of environmental regulations creates uncertainty.

ports the conclusion that domestic infrastructure expansion has been greatest in the communications sector where an ambitious reform program was implemented and where preconditions were achieved to attract substantial private sector investment. While there are limitations in rolling out the success of the communications sector to water and electricity sectors where the potential for open competition is more constrained, the value of private investment in infrastructure has nonetheless been clearly demonstrated. Meanwhile, the comparison sheds light on three cross-cutting issues that must be addressed if reform is to be extended to the electricity and water sectors in particular. These include:

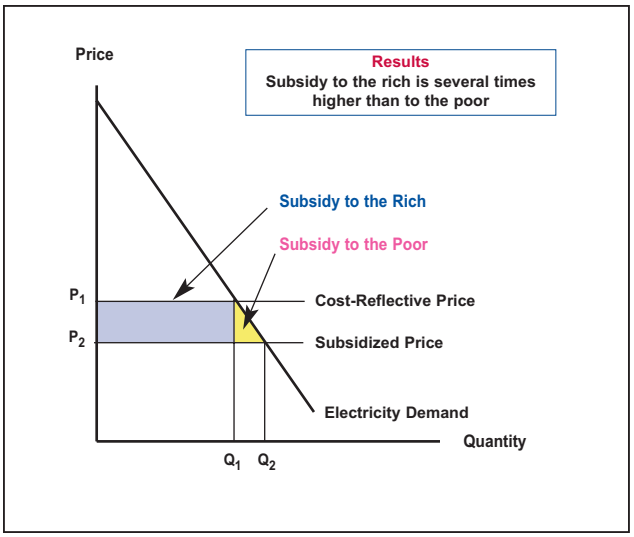
1. The imperative of establishing cost recovering tariffs that can support the long-term sustainability of utility services, whether rendered by public or private operators.
2. The need for regulatory capacity to be expanded at an affordable cost.
3. The importance of adopting light-handed regulations that will not pose a barrier to private investment in rural infrastructure.

With respect to cost recovering tariffs, Lesotho policymakers have demonstrated an entrenched reluctance to pass the full costs of utility services on to consumers, and this is particularly manifest in urban water and electricity grids. This reluctance may be partially fueled by perceptions that the utilities are not entirely efficient and that customers should not be charged inefficiency costs (such as the high level of water losses within WASA). Yet, this cycle of logic is ultimately self-defeating. Unless utilities can recover sufficient funds above operating costs to make capital repairs to

their networks and invest in expansion, they can never attain efficiency in service delivery. This condition would apply equally to public and private operators of a utility with one major difference. There will never be any private finance invested by private operators into a loss-making utility unless pricing remedies are implemented (comfort that tariffs will be moved towards and maintained at full cost recovering levels) or unless subsidies are provided (and this is unreliable given Lesotho's current fiscal condition). Hence, the need for rapid and comprehensive tariff reform in Lesotho's formal water and electricity grids is of paramount importance.

Moreover, particularly given the poverty and affordability problems in the country, there is a need to rebalance tariff regimes in a manner that removes the current regressive impact upon the poor. Many developing countries, like Lesotho, resort to providing a blanket subsidy to utility customers, thinking that a majority of the consumers cannot afford to pay a cost-reflective price. This is illustrated in **Figure 1**, which provides an example from the electricity sector. By charging a subsidized price (P_2) much below the cost-reflective price (P_1) to all the customers, the utility may end up giving a subsidy to the rich (blue rectangle) several times higher than that to the poor (yellow triangle). It is important that the GOL realize that low tariffs applied to all consumers regardless of income category are actually disguised subsidies to wealthier households, and are therefore contradictory to a pro-poor growth strategy.

Figure 1. Shortcoming of a Blanket Subsidy in Utility Tariffs



With respect to regulatory capacity, **Table 4** highlights the fact that institutional development and regulatory content is most advanced in Lesotho's communications sector, while there is a recognition by GOL of the need for regulation in the electricity and water sectors as well. Yet, the cost of telecommunications regulation alone in Lesotho is currently estimated at 7 Maloti per capita. While this appears modest, it can be ill afforded by a poor country, particularly if it were to be multiplied by three to accommodate new regulators for water and electricity sectors, respectively. Though regulatory capacity will be needed for these sectors if private investment is to be attracted, a trebling of regulatory costs would constitute almost 1% of per capita income. This presents a dilemma, and the GOL should give some consideration to the overall cost of regulation and how this might be confined without compromising regulatory integrity.

Cost savings should not be achieved by paying regulatory staff lower salaries, nor by keeping them on short-term contracts, as these measures would simply undermine the value of a skill-intensive function. In this light, there is value in exploring the economies that could result from a multisector approach to regulation that seeks to eliminate duplicate costs in such areas as administrative services, corporate affairs, public relations, and legal functions. **Table 5** presents data from a number of countries where a multisector regulatory approach has been adopted. One clear message is that there is not, nor can there be, a linear correlation between the number of employees at a regulatory institution and the population level in a country. The reason for this is that any given regulatory function must have a certain fixed base of expertise in order to dispense its functions with competence, regardless of the size of the population that it ultimately serves. Hence, the Bahamas has approximately the same number of regulatory staff as does the Lesotho Telecommunications Authority, despite having one-seventh of Lesotho's population.

Yet, it is clear that the various jurisdictions reflected in the table have achieved economies of scale and scope as a result of adopting multisector regulatory institutions. One solution is to fully embrace a multisector institutional model. Another might be to adopt a model halfway between a multisectoral model and a monosectoral model wherein common functions to all regulators were set up so as to be shared

Table 5. Comparison of Multi-Utility Regulatory Institutions in Various Locations

Country	Name of Authority	Regulated Sectors	# of Employees	Population
Lesotho	Lesotho Telecommunications Authority	Telecommunications and Broadcasting	27	2,160,000
Australia	Australia Competition and Consumer Commission	Electricity, Gas, Telecommunications, Aviation and Ports, Trains	70	19,357,594
Bahamas	Public Utilities Commission	Electricity, Water, Telecommunications	30	297,852
Bolivia	Sistema de Regulacion Sectorial	Electricity, Hydrocarbons, Telecommunications, Transport, Water & Sanitation	70	8,300,463
Costa Rica	Autoridad reguladora de los Servicios Publicos	Electricity, Hydrocarbons, Telecommunications, Transport, Water, Sanitation, Irrigation	167	3,773,057
Mongolia	Government Regulatory Agency for Infrastructure	Electricity, Gas, Telecommunications, Aviation, Ports, Trains, Roads	48	2,654,999
Illinois, USA	Illinois Commerce Commission	Electricity, Gas, Trains, Telecommunication, Water	310	12,419,293
Idaho, USA	Idaho Public Utilities Commission	Electricity, Gas, Trains, Water, Telecommunications	55	1,293,953

Source: Deloitte Touche Tohmatsu in association with LeBoeuf, Lamb, Greene and MacRae and National Economics Research Associates, "Consultancy to Establish Two Multisectoral Regulatory Agencies."

resources. Regardless of what specific institutional model is chosen for Lesotho, it is important that the country examine ways of reducing the total cost of regulation while maintaining regulator competence or independence.

Concurrently, it is recommended that Lesotho take a light-handed approach to utility service regulation in off-grid or rural areas of the country, without which it will be difficult to encourage private sector entry into this arena. While regulation is needed to encourage PPI in grid-based utilities, caution should be exercised to prevent situations of over-regulation. For example, electricity safety standards are needed throughout the country, but the degree of protection should likely be tailored appropriately to the type of electricity being generated. Similarly, standards for rural telephony should be tailored to affordability levels of the target population despite the fact that all telephony is inherently grid-based in any case. An example would be that there could be a higher tolerance for call completion rates in rural areas and/or greater waiting times and lesser speed for Internet and e-mail services in rural public access facilities.

Finally, **Table 4** identifies the complete absence of regulations in the environmental arena despite the existence of enabling legislation. This gap contributes uncertainty to potential investors that cuts across all sectors of infrastructure, and this gap should be addressed as a matter of priority.

Sector Interaction, Priorities for Expansion, and the Role of the GOL in Promoting a Pro-Poor Growth Strategy

Clearly, the GOL has several challenges ahead to hasten reforms and expand the use of private participation to help achieve its poverty reduction goals. Perhaps the most difficult of these is to accelerate economic growth in a manner that reaches the poor and reduces the considerable current income disparity. How can this best be done? Which sectors or infrastructure projects should receive relatively greater priority? What is the role of the GOL in fostering a pro-poor growth strategy that involves the private sector?

This section begins with a brief look at the interdependence among infrastructure sectors themselves and the extent to which they constrain each other's potential to expand. It looks at this question first from the perspective of the rural economy and then from the view of the industrial economy. It simultaneously explores potential growth poles known to exist in the real economy as a whole and suggests holistic priorities to guide future infrastructure expansion. In this context, the report turns to a discussion of an appropriate role

for the GOL in supporting the expansion of infrastructure and private participation therein.

The virtual absence of electrification in the rural highlands and interior heartland is a key constraint to introducing changes and opportunities in the present way of life in rural Lesotho and is a key determinant of the current low level of telephone penetration into rural areas. Although the electricity transmission network does reach the interior, distribution along the line is extremely thin, and the 7% of the population connected to the grid is highly concentrated in urban areas. Isolated mini-grids do very little to alleviate this condition. This anemic power backbone can be viewed as a root problem that reinforces entrenched poverty in rural areas of the country. Residents remain locked into present modes of subsistence agriculture and an attitude of dependence upon supplemental income from remittances. Were electricity distribution to be more widely available, it could give a vital boost to various forms of rural industry, including irrigated agriculture, mining and sandstone quarrying, and tourism development. Development of this type could then create wage-earning employment opportunities in the rural areas, thereby fostering a larger customer base capable of consuming other utility services such as communications or water supply. Therefore, the lack of rural power, much more than the lack of rural telephony or water, presents the biggest constraint to growth in the rural areas.

Concurrently, rural residents in Lesotho express a priority wish for an expanded network of rural roads, as this expands the local opportunities for income generation through trade. While this is a valid concern, the nation has made significant strides in expanding its roads network (45% in 15 years) to the point where budget resources must adjust and permit maintenance of the existing network. Simultaneously, there is a nostalgia favoring maintenance and upkeep of rural aerodromes, but these are much less necessary with the explansion of rural road networks. Placed in perspective, then, an expansion of rural electricity would likely be the priority starting point for unleashing greater growth in the rural hinterlands and interior, accompanied by continued maintenance of the stock of roads that the nation has worked so hard in the past decade to install.

The industrial sector (which is dominated by "wet" garment manufacturing processes) would likely rank the shortage of raw water supply as the biggest factor constraining its further development, followed thereafter by the twin frustrations of high-cost and low-quality communications and transportation infrastructure. In particular, manufacturing and tourism companies both lament the lack of bandwidth and high-speed Internet service which would, if available, keep them better connected to markets and their respective supply chains. Yet, the lack of choice and competition in multi-modal transport options open to industrial exporters is probably of greater overall concern, particularly as this places a greater damper on Lesotho's competitiveness as a manufacturing location. In particular, Lesotho exporters suffer from an effective oligopoly in trucking and an unreliable alternative in rail freight. This problem, while exacerbated by the fact that South Africa recognizes only a limited number of qualified bonded carriers that it trusts to carry freight into the Lesotho tax zone, could be mitigated if the Governments of Lesotho and South Africa were to agree on the designation of the Maseru railhead as a dry port. Were this to be institutionalized by way of a treaty, Lesotho could reintroduce competition in freight transport service from ocean carriers via multi-modal bills of lading, thereby reducing the costs of trade and providing its manufacturing companies with an impetus for growth. The reliability of the power supply must also be noted as a concern to the manufacturing sector and the completion of new LNDC industrial estates assumes an ability of the LEC to invest in power infrastructure that is by no means certain. In summary then, growth within Lesotho's industrial sector would likely be enhanced by changes in the following order of priority: (1) an expansion of raw water supply to urban areas, (2) an expansion of competitive options (thereby reducing costs) in the freight transport sector, (3) upgrading of bandwidth and quality of supply of communications infrastructure, followed by (4) improvements in the reliability and quality of power supply.

The above analysis has relied upon background data, common sense, and simple interviews with user groups to develop a prioritization of expansion priorities by infrastructure sector. The findings depend upon whether one is seeking growth in the rural or urban milieu, as the respective priorities are clearly not the same. This discussion does not purport to reflect an actual "demand study" for infrastructure by user groups, nor does it suggest that users would be willing to bear the real costs of identified expansion priorities. More demand-side work is definitely needed to permit such conclusions, and, indeed, the GOL and its development partners

are encouraged to carry this out as they move forward.

In the meantime, however, this discussion enables one to appreciate the difficulty of finding a single infrastructure expansion strategy that can provide the foundation for future equitable economic growth. This might be simple if it were clear that export-led growth would trickle down within the economy, or if the Basotho people shared the belief that FDI-led growth would trigger indigenous growth in the rural economy. But the last decades of domestic economic growth have proven this reasoning to be flawed. Instead, what this discussion drives home is the fundamental reality that Lesotho is a resource-poor nation, hampered by shortages in human, physical, and financial capital. Inasmuch, there is no single magic "growth bullet" for Lesotho, and therefore no single infrastructure expansion plan that can be proven to be superior to all others.

On the contrary, Lesotho must multi-task. Lesotho must tap to the fullest the growth potential inherent in every niche and resource angle of its economy, and that means developing infrastructure to support growth poles wherever they present themselves, in both the rural sector and in the developed segment of the economy. For that reason, one cannot prioritize the development of urban infrastructure to the exclusion of rural infrastructure, nor should one promote the reverse. Instead, Lesotho must embrace a multi-pronged strategy that fosters infrastructure expansion in both rural and urban areas and enlists both FDI and domestic involvement in meeting basic infrastructure requirements for growth.

What does this imply, then, as the appropriate role for the GOL in moving forward? Is the solution for the GOL to devote its scarce resources to tackling identified infrastructure bottlenecks? Should the GOL identify an investment pipeline for priority projects and set about seeking private sector participation? Must the GOL begin earmarking and setting aside public funds for priority projects? The solution lies not in an answer to these specific questions, but in how it embarks upon an overall program of change.

Perhaps the most constructive change that the GOL could make in leading the nation forward with a pro-poor private-sector led, infrastructure-reliant growth strategy is to *stop viewing itself as the dispenser of resources and to begin viewing itself, instead, as an enabler of change.* With this paradigm, let us revisit the infrastructure priorities for the rural and industrial sectors identified earlier.

One clear impetus to rural growth will come from deepening electricity distribution along the existing power grid. This initiative has the potential to take effect more quickly and with much greater reach than any complementary program of rural electrification; therefore, it should gain the highest attention of government. Rapid privatization of the LEC (through concession or other means) will be the quickest way possible to achieve quantum infusions of private investment capital enabling expansion of the distribution network. What does this imply for the role of government? The GOL must work energetically to make the opportunity of bidding on the LEC concession attractive to the private sector. This implies that the GOL must move swiftly to move tariffs to full cost recovery; otherwise the turnout of private interest will fail. If cost-reflective tariffs were not achievable in one immediate shift, then the GOL would make best use of its public resources to entice private sector entry anyway through declining subsidies to the operator, thereby enabling a gradual transition to long-term sustainability. In this example, the GOL might indeed need to dip into its resource pool for a time-bound period. In exchange, it will have enabled the grid power sector to be launched on a self-sustaining growth path into the future. While this example does envisage the GOL making use of public finances, it does so for only a temporary period.

Extending the analogy, it is probably important for the GOL to begin devoting less of its capital budget to rural road expansion and more to routine maintenance and upkeep. In shifting its role from dispenser of resources to enabler of development, there are two clearly complementary measures that the GOL could take: (1) introduce measures to better safeguard monies in the Road Fund for their intended use within the sector; and, (2) package longer term maintenance contracts on the basis of reliable Road Fund receipts, thereby expanding the capacity of domestic private contractors to bid on such opportunities.

Recall that infrastructure expansion priorities identified for the industrial sector include the expansion of raw water supply for urban areas, expansion of competition in freight transport options, upgrading of bandwidth and quality of communications infrastructure, and improvements in the reliability and quality of power supply. Of these, only the first needs to involve the GOL in the direct role of dispenser of resources, as the latter three can all be tackled through the enabling route. A change in the competitive structure of

freight transport would come about if the Maseru railhead facility were to be designated as a dry port by agreement between Lesotho and South Africa. If indeed the GOL were to achieve this policy breakthrough with its neighboring country, conditions would then be ripe for the private sector to invest in the improvement of the Mascon facility, thereby relieving the public sector of the burden to do so. In supervising Telecom Lesotho's exclusive rights as the nation's only fixed-line telephone operator, the Lesotho Telecommunications Authority has some latitude in trading off investments in rural telephony versus other priorities, and the need for improved bandwidth for industry can be kept in mind in such an instance. The privatization of the LEC should bring with it an improvement in power reliability and quality; if not, it will come under the watchful eye of the forthcoming regulator for that sector in any case.

Finally, even the solution to the water supply problem could be partially addressed through government's enabling role. In particular, wet industries currently discharge high volumes of "gray water" into Maseru's watercourses at tariffs set way below what it costs WASA to treat and recycle the latter. From the perspective of the water sector, discharge tariffs set at cost recovery levels would provide market signals to encourage industry to treat and recycle its own wastewater. This would relieve the pressure on potable water supply to urban consumers. From the perspective of the LNDC and private industry, the prospect of fully cost-reflective wastewater treatment tariffs might alter the competitive position of Lesotho as an investment location. The challenge for the GOL in such an instance is to recognize that there is a standing conflict between its own goals—for industrial growth on the one hand, and for promoting viable utilities and clean industry on the other. The appropriate role of government in such an instance is to embrace the problem and seek a resolution. To do this, government must inform itself of the potential costs and impacts of various remedies on alternative stakeholders, and, armed with this information, decide how it can best channel its resources to promote a solution that is self-sustaining in the long term.

This discussion has illustrated a fundamental perspective that the appropriate role for the GOL is to become a more effective enabler of private sector-led infrastructure development in the future in preference to being a direct investor therein. The underpinnings of a specific action plan to promote infrastructure development in Lesotho derive from the background analyses explored above and are summarized again in the concluding section of this chapter. Before turning to the action plan, however, there is a need to explore the possible benefits of private sector participation in infrastructure and an appropriate strategy for its adoption in Lesotho.

The Promise of PPI

Private sector participation in infrastructure offers Lesotho three key advantages: (1) augmenting budget resources in cases where the private sector undertakes to finance projects or services that would not otherwise be funded, (2) improvements in the quality and efficiency of service delivery, and (3) an acceleration of investment in infrastructure. This section identifies the principal models whereby these benefits could accrue to the Lesotho economy if PPI is managed successfully. However, it must be recognized that PPI also carries significant downside risks that can increase government costs, expand public liabilities, and bring about a deterioration of service levels. To mitigate against such risks, certain capacity preconditions must be met, and these are further explored below.

There are two basic PPI financial models that can expand and improve the delivery of infrastructure services: private finance of private operations, and public finance of private operations. These distinct financial models can take a multitude of contractual forms ranging from divestitures, licensing, build-operate-transfer (BOT) contracts, and concessions (which are more associated with the former) to leases, management, and service contracts (which are more associated with the latter).

In private financing of private operations, investors mobilize the financial resources needed to implement a project from beginning to end, including all capital costs. They also take responsibility for operation and maintenance requirements either forever (divestiture) or for a specified period of time. Under BOT contracts, ownership may ultimately transfer to the public sector after the defined operating period has expired. Such models generally rely upon revenues emanating from private consumers to reimburse the sponsor's operating costs, investment capital, and a risk-adjusted return. As noted, this financing model can include divestitures such as that of the Lesotho Telecommunications Corporation where the purchaser was obliged to meet certain investment requirements as a condi-

tion of the sale and the operating license. Yet they are often cast as new construction projects that require large capital investments, long investment recovery periods, and full cost recovery tariffs. Even though ownership may revert to the public domain at the end of a defined period (as with BOT and concession contracts), the financial risks for these projects lie primarily with the private sponsor and its creditors. The primary objective of government in this approach is to attract as much private capital as possible within the constraints of a project's financial feasibility, thereby effectively stretching the purchasing power of a government's budget and accelerating the pace at which infrastructure expansion is realized.[20] A secondary, but certainly important, objective in this approach is to maximize operating efficiencies and service quality as a result of privately managed operations while keeping user fees as low as possible.

In public finance for private operations models, public resources are used to compensate the private operator for running the operations or providing the given services. The use of Imperial Car Rental to manage the GOL vehicle fleet is an example of this model. Other such projects range from outsourcing specific functions to the private sector, such as meter installation or cable connections, to contracting the private operation of an entire utility as under the IMTF contract with the LEC. These contractual modes do not require the private sponsor to provide capital to construct or expand an existing utility. The private operator receives periodic scheduled payments for the services delivered, and the government provides capital for network expansion or investment in new facilities.

When future streams of public sector finance can be securely predicted and made available, the model can be extended much further to embrace green-field infrastructure where the private sector manages both the construction and operations phase of a project. These include classic public-private partnership (PPP) investment projects where the public sector enlists the private sector in building and operating most any kind of infrastructure, including hospitals, police stations, prisons, and the like. Under this model, the private sector project sponsor likely mobilizes and manages the finance for a project by banking on the strength of its own balance sheet and by contractually securing a future revenue stream from the public sector and, likely, supplementing this with government-sourced payment guarantees. Like private finance for private operations, this approach to PPI can augment government budget resources and accelerate the pace of infrastructure development. It is, however, the most complex type of PPI contract and carries tremendous downside risk if not handled carefully. For example, South Africa recently concluded a PPP transaction of this kind, thereby launching the construction of Inkosi Alfred Luthuli Hospital.

The Kwa-Zulu-Natal provincial government would not have been able to sponsor this project in the same time frame or at the same risk-adjusted cost had it been undertaken directly by its Department of Health. This project involves a stream of unitary payments to the private sector consortium that have a net present value of 4.5 billion Rand. Government has not shifted this investment burden to the private sector; it has merely deferred and smoothed out the timing of its own payment stream for this project.

There are also mixed projects that combine public and private investment with private operations. This is typical of a situation wherein government makes use of subsidies to expand infrastructure. It may choose to subsidize a connection fee for sewer reticulation to a household, for example, but the private sector remains responsible for financing and recovering operating costs from customers. It might also choose to subsidize the capital costs associated with building a facility, such as a wastewater treatment plant, for example. Government's objective in the mixed project financing approach is to leverage as much private capital as possible while also achieving efficiency gains in service delivery. Subsidy policy is discussed further below.

The promise of PPI, therefore, is to attract risk capital from the private sector to speed the expansion, efficiency, and quality of infrastructure and utility services. The quantum of capital that the private sector is willing to invest will depend on the risks associated with the returns expected on the investment.

20. The financial feasibility constraints are, among other factors, the maximum user fee that is politically acceptable to generate revenues sufficient for operations, debt service, and the investor's financial return rate of return compared to other alternative investments. Depending on the risks associated with the project, before tax rates of return required by investors can be up to 25% for PPI projects.

The Responsibility and Potential Consequences of PPI

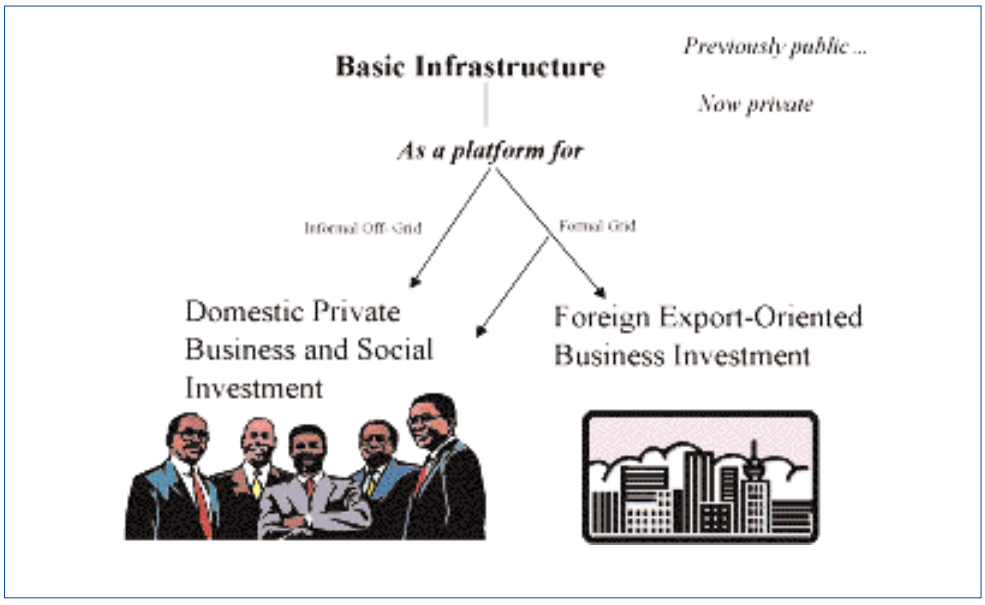
It is important to realize that PPI also carries downside risks which, despite the best of intentions, could materialize with serious adverse consequences to the country. For example, the inability of government to keep pace with contracted payments to private suppliers or utility operators could result in a disruption of service, bringing on severe economic consequences to the productive sector. Inadequate monitoring could result in government paying more for service than would be the case under a public mode of delivery; in extreme cases, the quality of service provided might even be lower. More serious consequences arise in cases, for example, of government reneging on policy commitments such as cost-based tariff increases or other circumstances that cause hardship to a private concessionaire or utility owner. Such breaches can instigate damage claims against government and give rise to significant liabilities and calls upon public capital. To safeguard against these risks, government must proceed carefully with the conclusion of PPI contracts by investing in the capacity to implement and monitor such deals. Moreover, government must establish baseline indicators to enable the monitoring of subsequent performance, and it must introduce multi-year budgeting processes to knowingly assess the fiscal impacts of a given project and be in a position to honor contractual commitments.

A Proposed Strategy for PPI in Lesotho

Most PPI projects in Lesotho will lean towards the public financing of private operations model, especially those with a social investment dimension that seek to expand access to the poor through recourse to subsidies. Projects that are oriented towards business investment will likely attract more private capital, though government may still need to contribute capital or share significant financial risk associated with the project. Risk sharing can come in the form of an equity contribution, a grant, or government guarantees for a private sponsor's commercial bank loan. This section presents a brief strategy for PPI in Lesotho together with a specific action plan to create PPI management capacity in the heart of government.

Figure 2 reflects the premise that basic infrastructure is a necessary precondition for both domestic and foreign business investment as well as for social investment that can improve equity among Basotho citizens. It would be desirable to mobilize two streams of private investment into basic Lesotho infrastructure in the future: both domestic and foreign direct investment. Domestic investors are more likely to

Figure 2. A Pro-Poor PPI Strategy for Infrastructure



make investments in the rural arena where subsidy financing will be a component. Foreign investors are more likely to be attracted to infrastructure opportunities associated with payment streams emanating from the private industrial sector. Foreign export-oriented business investment refers to FDI in employment-generating activities, such as the garment factories in Lesotho, or the minerals, tourism, and agricultural sectors. Wherever quality infrastructure is needed to support growth in the latter segments of the economy, it can best be enticed to enter the Lesotho market under the private financing for private operations type of PPI model. A major poverty issue to address in FDI-led growth, however, is to ensure that benefits accrue as much as possible to Lesotho-based workers, professionals, suppliers, and providers of ancillary services. To the extent that incremental investment in infrastructure facilitates backward and forward linkages, Lesotho will realize economic development dividends through infrastructure investment.

Social investment pertains to improvements in the quality of life associated with basic needs such as access to water and sanitation, electricity, telecommunications, and transport. Expanding the availability of such basic infrastructure in rural growth poles will also permit domestic small and medium-sized enterprises to begin expanding in less developed areas where income inequality is greatest.

The PPI financing approach most closely associated with social investment is the public financing/private operations model and this can be channeled through output-based aid (OBA) or other types of multi-year performance contracts. OBA involves the use of performance contracts between governments and private contractors to deliver public services, especially in rural and peri-urban areas.[21] When contract payments are triggered by output performance, (such as connections established or road miles surfaced), the contracts promote efficiency, quality, and timeliness in the delivery of service. There is growing evidence that OBA has improved service delivery outcomes and welfare even in countries with weak institutions.

Local private contracting for the delivery of infrastructure services has already begun in Lesotho. For example, the Department of Rural Roads has a local contractor training program that makes use of private contractors to upgrade rural roads and maintain gravel roads. The Department of Rural Water Supply uses local contractors to maintain rural water systems. The LEC has realized impressive gains by using local contractors to install electricity connections. At present, these are simple outsourcing or services contracts. Yet these are typical activities that could lend themselves to OBA types of contracts if the functions were packaged into longer term contracts, risks transferred, and revenues set to flow as a function of particular output levels. Under such approaches, Basotho entrepreneurs could achieve greater success in mobilizing domestic finance, thereby converting themselves from sole proprietorships into small businesses.

An Action Plan to Realize the Potential of PPI in Lesotho

This chapter has explored background issues and cross-cutting themes that have a material bearing on the environment for infrastructure investment in Lesotho. The following background observations have emerged, and these must inform government's action plan in going forward:

- Economic growth on its own merits is an inadequate and insufficient development strategy for Lesotho. The nation requires a pro-poor growth strategy that seeks sustainable and equitable growth capable of raising incomes in both rural and urban segments of society. Such a strategy must embrace policy reform, infrastructure expansion, and human capital development.
- Public sector financing for infrastructure is in short supply. Therefore, the introduction of cost-recovering tariffs is needed to improve the feasibility of raising private finance for utility operations. Concurrently, creative means should be found to leverage public monies, and recourse to PPI financing and contracting models are appropriate in these contexts.
- PPI projects require substantial capacity both in their developmental stages and in terms of monitoring once transactions have been closed. Lesotho's privatization experience emphasizes the importance of tapping and expanding project identification, appraisal, and management capacity as a precursor to successful PPI and also reinforces the need for affordable regulation to accompany provision of utility services.

As noted previously, the GOL would be well advised to pursue infrastructure priorities in a manner that will address

21. See Penelope Brook and Murray Petrie, "Output Based Aid: Precedents, Promises and Challenges", PPIAF website.

both the needs of the rural economy and that of the manufacturing sector. Thus, the GOL is encouraged to consider its key role as one of a proactive enabler of policy change. To that end, the elements of a three-tier action plan are identified below. The first tier addresses the need to establish PPI implementation capacity in the heart of government. The second tier identifies specific priorities for action by the infrastructure sector. The third tier identifies cross-cutting actions that are needed to reduce the risks to private investment in infrastructure.

Tier 1: Create PPI Oversight Capacity within the Public Sector

The public sector will need to evaluate potential investment projects, develop standardized PPI contracts, ensure transparent bidding, and use financial management information to assess and monitor project performance. To that end, it is recommended that the GOL establish a PPI facilitation unit. The purpose of the unit would be to assist line ministries in the preparation, evaluation, and monitoring of PPI projects. Its most important function would, however, be to assess the GOL's financial exposure to PPI projects to ensure that the PPI project does not have a negative impact on the GOL budget. Because this exposure assessment is the unit's primary responsibility, we recommend that the unit be situated within the Ministry of Finance and Development Planning. It can and should draw upon existing analytical capacity within the ministry and from any other public service unit that the GOL deems appropriate. For instance, the traditional project appraisal and evaluation unit within the Ministry of Finance and Development Planning might assign or share resources with the PPI unit, and the same would apply for the Central Tender Board. In addition, to make sure that capacity is built within line ministries to monitor PPI contracts once transactions have been closed, arrangements should be made to assign or second sector personnel to the PPI unit. This in-house capacity should then be strengthened by additional training and supplemented with outside PPI expertise on an as-needed basis. Complete details of the unit's composition, responsibilities, relationships to line ministries, and other organizational details should be fleshed out with the GOL as a follow-up activity to this report.

The unit must evaluate PPI projects based on the following three primary criteria:[22]

1. **Affordability:** The PPI unit assesses the project's impact on the GOL recurrent and capital budgets. It prepares a manual with a financial feasibility methodology, including a standard format cash flow analysis, to assist the line ministries that sponsor the project to calculate its impact on the GOL budget.
2. **Value for money:** Does the project generate sufficient benefits to the user population at a reasonable cost? ("Reasonable" might be deemed to be any risk-adjusted cost that is lower than the costs associated with service delivery by the government.) The manual should also provide a methodology to calculate the cost effectiveness, or value for money, of the project to ensure that the GOL receives the highest benefit for its scarce budget resources.
3. **Transfer of risk to the private sector:** Does the project transfer appropriate risks to the private sector? What are the residual government risks, and what is the potential impact on the GOL budget if these risks are realized?

Tier 2: Priority Actions by Infrastructure Sector

As noted in the sector chapters and in **Table 1** of the Executive Summary, a large number of potential PPI projects have been identified for Lesotho. If and when a PPI facilitation unit is established, the relative merits and financial viability of these various projects should be further explored and developed. In the meantime, however, this report has identified a short list of priorities for each sector that merit initiation or continued action by the appropriate units of government.

Electricity: The biggest priority is to proceed without delay in setting up the sector regulator and executing the privatization of the LEC via concession contract.

Water and sewerage: It is important for the GOL to recognize that there is a conflict between current industrial policy (whereby locators in industrial estates effectively benefit from subsidized utility services) and the goal of financial viability for utility service providers, notably WASA. It is recommended that this issue be elevated to a level in government where the relative trade-offs of competing goals can be assessed and where all the various stakeholder perspectives and alternative remedies can be taken into account. A

22. South Africa's PPI Unit already uses these three criteria to evaluate PPI projects.

resolution to this impasse is needed before the water sector can make effective progress on tariff reform, thereby opening the door to possible PPI in water infrastructure projects.

Transport: Two initiatives deserve rapid government attention. The first is to take measures to make it possible to introduce long-term road maintenance contracts through dedicated use of Road Fund resources. The second is to explore the feasibility of establishing the Maseru railhead as a dry port recognized by both Lesotho and South Africa, thereby improving the competitive conditions for freight traffic serving Lesotho's garment industry and opening the door to eventual PPI in the upgrading of the Mascon facility.

Telecommunications: Government is encouraged to stand by the initiatives of the sector regulator with respect to the roll-out of rural expansion targets to all sector operators and the opening up of competition for advanced communications services.

Tier 3: Cross-Cutting Enabling Measures

The present chapter has identified a number of themes that cut across all of the infrastructure sectors and which affect the climate for private investment. If the GOL were to take robust action on the specific measures identified below, it would have a highly beneficial impact on the prospects for PPI in Lesotho.

Adopt Cost-Recovering Tariffs for Utility Services, Remaining Cognizant of Affordability: The telecommunications sector provides a specific example of how private sector investment can bring benefit to the economy, by expanding coverage and efficiency in service delivery and also by reducing government's fiscal burden. Inasmuch, the licenses in the communications sector are examples of the private finance/private operations model of PPI. An intrinsic aspect of this model is the premise that users pay for most or all of the company's full costs (including a return on capital) recovered through user fees or service tariffs. In situations where tariffs for utility services are set below cost, there is little chance of enticing private entry and investment into the sector. This is particularly relevant to the electricity sector, where tariffs have been capped at the same level for a decade, and also in the water sector where de facto tariff levels do not reflect the declared policy of permitting full cost recovery.

The question arises, then, of how the domestic population will afford tariffs that are much higher than current levels. There are many remedies to this problem. The first is to reduce inefficiencies, thereby eliminating costs that consumers should not bear. This is better done by engaging the private sector in operations than by striving for productivity improvements within the public sector. The second is to expand the customer base, thereby permitting the recovery of fixed costs over a larger base. This is clearly happening in the communications sector where customer numbers have increased sixfold. A third is to realize that some customers may indeed have a willingness to pay higher fees for the service than is presently the case, particularly if blanket subsidies have been the norm in the past. This too has been clearly demonstrated in the telecommunications sector where, despite the fact that the cost of fixed-line local calls has increased almost 570% since privatization, the backlog in demand is not yet fully satisfied. But there is a limit to these remedies, and the reality is, in a country with the poverty profile of Lesotho, there will eventually be a need for subsidies as well.

Identify Appropriate and Sustainable Approaches to Subsidies: Subsidy schemes are often problematic, as experience shows they rarely ever decline and go away. Instead, consumers tend to become dependent upon subsidized consumption, politicians are reluctant to wean their constituencies, and economies lose touch with the real scarcity value of goods and services. Yet, without subsidies, the expansion of infrastructure into Lesotho's poor rural interior will not occur, and the reluctance of private investors to enter this arena (whether domestic or foreign) will be a foregone conclusion. Given these observations, it is best for a nation to adopt a specific set of subsidy policies in advance of embracing PPI so as to make conscious decisions about when to make use of subsidies, how to design them, and when to phase them out.

There are a multitude of approaches to subsidy design including blanket subsidies, cross-subsidies between customer segments, and targeted subsidies. In Lesotho, it is recommended that all blanket subsidies be abandoned, particularly given the relative inequality in income levels and the capacity of wealthier consumers to afford the true costs of consumption. Cross-subsidies between consumers are the type contemplated in the Universal Service Fund for telecommunications and the National Rural Electrification Fund for rural electricity. When, for example, the USF

begins levying the authorized 2% tax on telecommunications operators' turnover, this cost will effectively be borne by wealthier customers and will generate a source of finance that can be directed to poorer segments. The regulator's decision to defer implementation of the USF until 2006 when it expects demand by commercially capable customers to have been largely satisfied is a good one as it will result in expanding the base of customers able to contribute cross-subsidy financing. Yet, once the USF is implemented, it is recommended that subsidies be prioritized to relieve customers of lumpy capital costs, such as connection fees. To the maximum extent possible, operating tariffs should be left at fully cost-reflective levels, as this will permit the long-term sustainability of private operators. Only when the latter approach has mopped up demand corresponding to the affordability level of a poorer tier of the population should the GOL contemplate targeted subsidies for specific households or geographic zones.

Output-based aid has recently been developed and introduced in many countries as a mechanism through which subsidies can be channeled. In particular, when channeled through the private sector, OBA leaves incentives in place for operator efficiency and attention to service quality.

Adopt Measures to Improve the Climate for Business Investment: On the whole, much could be done to make Lesotho's climate more receptive to business, whether domestic or foreign direct investment. With respect to limitations in basic infrastructure for business, public capital could stretch further if channeled through PPI projects to expand infrastructure, provided the GOL invests in the capacity to manage such contracts properly. As regards human capital development, aside from outright spending in the educational sector (which currently does enjoy a high allocation of government funds), government policies could be amended to embrace greater empowerment of Basotho partners in business transactions, and FDI investors could be expected to roll out monitorable internal management training programs in exchange for the privilege of importing large numbers of expatriate managers. Finally, the discussion of administrative hassles makes clear that Lesotho has already recognized most of the impediments to business within the country. Extensive preparatory work has been conducted to redress known problems, whether via legislation (Companies Act, Investment Code, Land Act) or institutional development (a one-stop investment shop). The solution is clear: these initiatives should be taken off the shelf and implemented, thereby giving Lesotho a clear boost in competitiveness relative to other neighbors in the region.

Embrace Competition as a Contributor to Development: Many infrastructure and utility services were once considered to be natural monopolies, thereby precluding recourse to competition in such arenas. Changes in economic thinking and advances in technology have proven that competition is feasible in a multitude of infrastructure sectors and that it can bring substantial economic benefit to consumers. This is demonstrated by the direct competition currently applicable among operators in the communications sector, and it underlines the value that enhanced competition between rail and truck modes of transport could bring to the manufacturing industry if the costs of exporting cargo were to remain competitive. The extension of this logic is that Lesotho would enjoy better success if it were to embrace competition as a core policy objective behind most or all forms of PPI. Lesotho currently has no specific competition legislation, nor any pinnacle institution such as a competition commission. To create the latter would probably bring more cost than benefit. Nonetheless, this circumstance reveals how important it is for regulators to act as stewards of fair competition and for ministries to utilize transparent and competitive procurement processes when contracting for PPI.

Address the Need for Appropriate and Affordable Regulation: This and the following chapters identify numerous benefits arising from independent sector regulation and the comfort offered by such regulation to prospective private investors. Yet, the content of regulation should be carefully considered and tailored appropriately to the developmental circumstances of a sector. There is such a thing as overregulation, and, when this occurs, private entry can be discouraged by complex and burdensome reporting obligations, excessive service standards, and the like. In Lesotho, there should be a major distinction in the regulatory standards applied to grid-based utility service delivery as compared to services provided off-grid or in the rural areas. Such a policy will foster greater private investment into the rural sector, whether from domestic or foreign sources.

Address the Need for Improved Budgeting and Management Information Systems (Geographic Information System): The earlier discussion of infrastructure benchmarks in Lesotho revealed that the country lacks

substantial baseline data on the current status of infrastructure and service delivery within the country. In particular, service quality and productivity indicators are almost nonexistent, except for the communications sector where the regulator has set service quality reporting requirements. Unless relevant baseline information is captured and then monitored, the public sector (whether the sponsoring line ministry or the PPI unit) will not have the information required to measure contractor compliance with PPI contracts, and some benefits of PPI may not be realized. Government must equip itself with the capacity to collect the baseline measures, to track changes from that baseline, and to report on contractor compliance and improvements achieved. For planning purposes, baseline data of the infrastructure need to be gathered with the accurate locational information. This implies a need to invest in government management information systems (including Geographic Information Systems), without which the public sector risks paying too much for privately-provided services, and public expenditure could increase rather than decrease.

Another critical element for a successful PPI program is a government financial and accounting system that can forecast recurrent and capital budgets over a longer term, thereby enabling the commitment of public resources for much longer durations of time. The public finance laws may also require amendment in this regard. Without this, PPP types of contracts will never be able to be implemented in Lesotho. Prior to entering into a PPI contract, the GOL must ensure that it has sufficient resources to pay the private contractor for the contract duration. In the case of a project requiring a government capital contribution, the capital budget should be sufficient to match private contributions during the construction period. If these funds are not forthcoming, the project may be delayed and result in higher costs to the government.

Promote Domestic Participation in Private Infrastructure through Appropriate Channels: During the process of developing a pro-poor growth strategy, government consulted with the private sector, including foreign investors and domestic business people and entrepreneurs. This was a fruitful engagement and should be extended. It is recommended that the GOL consider establishing a regular forum for the exchange of ideas between public and private sectors. In addition, government units should build capacity-building programs for local entrepreneurs into all public works projects and spending programs, with a view to enabling small businesses to grow into larger enterprises that can compete with regional companies.

Take Measures to Reduce the Uncertainties Caused by the Void in Environmental Regulation: The report identifies that laws are in place vis-à-vis environmental protection, but these are not yet fleshed out and backed up by specific regulation. The requirements for environmental impact studies and public consultation processes need to be developed and tailored appropriately in order to preserve the environment, yet not discourage private investment. Elimination of the uncertainty as to what constitutes compliance with legislation is an important first step in this regard.

This action plan is more illustrative than exhaustive. No doubt the GOL and its partners will identify other enabling policy measures and supporting actions that can create a conducive environment for private participation in infrastructure, and the parties are encouraged to think openly about these in finalizing a strategy for the future.

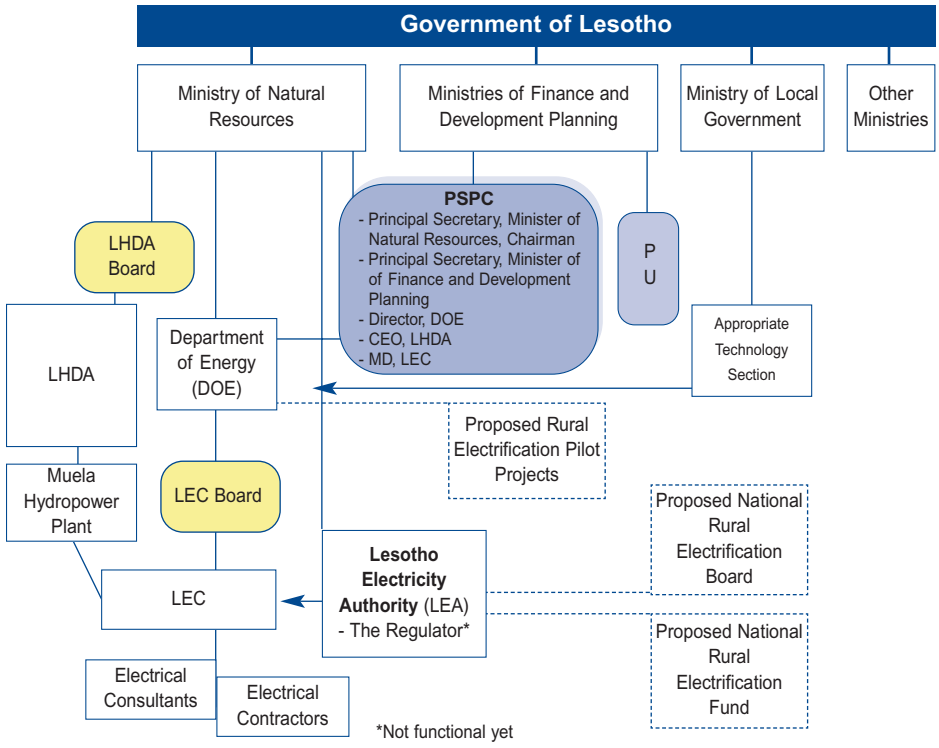
3 Electricity

Institutional and Market Structure

As in many developing countries, the electricity sector in Lesotho has been largely dominated by the government. Currently, only the government-owned Lesotho Electricity Corporation (LEC) is authorized to supply electricity to end users in the country. With the impending appointment of a new regulatory body, the Lesotho Electricity Authority (LEA), this situation will change because the LEA will be authorized to issue licenses to others beside the LEC to supply electricity to end users in designated jurisdictions.

Figure 3 presents in a capsule the institutional structure of the Lesotho electricity sector. The Power Sector Policy Committee (PSPC) is the apex policymaking body for the electricity sector, with senior representations from Ministries of Natural Resources, Finance, and Development

Figure 3. Institutional Structure of the Lesotho Electricity Sector



Planning; the Department of Energy (DOE); and two high-profile government-owned entities, the LEC and Lesotho Highlands Development Authority (LHDA), represented by their chief executives. The DOE is the policy-implementing body for the energy sector. The LHDA is the administrative authority of the binational Lesotho Highlands Water Project (LHWP), between the Kingdom of Lesotho and the Republic of South Africa (RSA), aimed at harnessing the water resources of the highlands of Lesotho to the mutual advantage of the two nations (water supply for South Africa and hydroelectricity for Lesotho).

However, for a nation of a little over 2 million people, the electricity sector appears to be over-governed. Figure 3 illustrates this point to an extent. It also illustrates the somewhat complex decisionmaking structure that governs the sector.

An Institutional Barrier?

Overlapping mandates and responsibilities of government departments can dilute accountability and consequently affect sector performance. This perhaps explains why the parastatal monopoly, LEC, has not been able to provide the number of connections demanded by the market over a long period of time. The performance records of parastatals in many comparable countries have been better, probably because of their simpler organizational structures and clearer mandates. Several new organizations (National Rural Electrification Board, National Rural Electrification Fund) or programs (rural pilot projects) that are in the pipeline now may add further complexity to the situation, if not structured properly.

Sector Policies and Regulation

Responsibilities for policy and regulation should ideally lie with separate groups, as appears to be the case in Lesotho (see **Figure 3**) where the PSPC, the top policymaking body, was established in 1997 with overall responsibility for "formulation and implementation of policy related to electricity production, distribution, and use, and to promote cooperation and coordination of power sector activities."[23] However, policy implementation responsibility lies with several government bodies (DOE, LEC, LHDA, LEA, etc.).

Box 3.1: Electricity Policy Tenets

The Government of Lesotho (GOL) will:

- Implement appropriate institutional and structural reforms, as well as reforms relating to ownership of the electricity industry.
- Attract private sector investment and participation into the electricity sector, through introducing appropriate reform measures into the LEC.
- Specifically consider the vertical desegregation and introduction of competition in the electricity industry.
- Ensure that electricity tariff structures and prices are based on sound economic principles and, wherever possible, reflect the long-run marginal cost of supply in the service area.
- Introduce regulatory and policymaking functions to monitor and regulate electricity price developments.
- Ensure increased access to electricity for both urban and rural households.
- Ensure that the burden on utilities implementing electrification initiatives does not preclude them from operating on a commercial basis.
- Ensure involvement of local communities in the design, planning, and implementation stages of electrification programs.
- Promote energy efficiency and the safe use of electricity, in close cooperation with stakeholders.

Since the PSPC is not an operating entity but an inter-ministerial advisory body, responsibility for policy decisions and subsequent implementation gets somewhat diffused, and consequently, accountability is diluted. The DOE in the Ministry of Natural Resources has the mandate to establish medium- and long-term national energy plans, determine feasible energy strategies, promote new and renewable sources of energy, and monitor energy sector activities. According to the Energy Policy Framework of GOL, "a number of Government ministries participate in energy sector issues, but primary responsibility for the sector lies with the DOE." Since the DOE is explicitly expected to operate in collaboration with other ministries and agencies in the implementation of energy strategies and serve as the secretariat to various committees,[24] its primary mandate gets sidetracked. This is evidenced by the lack of adequate manpower in the DOE.

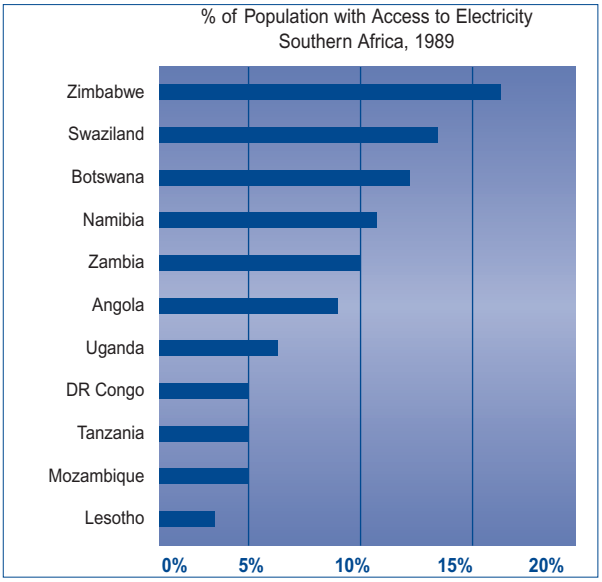
The New Regulatory Commission

Under the Lesotho Electricity Authority Act of 2002, a new regulatory body is now on the horizon.

23. "Energy Policy Framework for the Kingdom of Lesotho," 2002, p. 26.

24. Ibid.

Figure 4. Access to Electricity



Box 3.2: Independence of the Regulator

According to the LEA Act of 2000, the authority will be independent in the performance of its functions and duties under the act and will not be subject to the direction and control of the government or any person, corporation, or authority. It is important that the LEA is perceived to be independent by all stakeholders, most of all by potential investors.

Box 3.3: An unenviable track record at the LEC

The current network of the LEC, the government-owned monopoly, appears to be reachable by about 70% of the population (i.e., they are located within 50 meters of the existing distribution network or within 200 meters of the transmission network), but in its 34 years of operation, the LEC has actually managed to serve only about 7.5% (as of March 2003) of the total population. There are 9,673 localities (towns and villages) in Lesotho, of which only 153 are connected to the electricity grid.

Although Lesotho's population is only 2.2 million, its population density of over 70 per square kilometers is among the highest in Southern Africa, and exactly double that of its immediate neighbor, South Africa. It should imply that per capita cost of connecting a customer should be lower in Lesotho than in many other countries, although the mountainous terrain may offset that to an extent.

The LEA must be given time and appropriate support for capacity building within the organization. One of the LEA's early objectives should be to have a rational cost-based tariff-setting policy and mechanism in place. Since the LEC currently has only a minimal role in rural Lesotho, serving just about 1% of the population, an appropriate role for the LEA in the rural areas has to be defined.

Sector Performance

From a global as well as a Southern African regional perspective, the electricity sector in Lesotho appears to have been trapped in a low-growth condition for a long time, perhaps due to policy inertia and political influence of the past as discussed in detail in the next section. **Figure 4, Table 6**, and **Box 3.3** illustrate the impact of these factors.

With the same gross domestic product (GDP) per capita on a purchasing power parity basis,[25] **Table 6** shows that Lesotho and Zimbabwe occupy the two extreme positions among the countries listed in terms of percentage of population with access to electricity. Moreover, per capita consumption of electricity in Zimbabwe is almost 18 times that of Lesotho. Swaziland

Table 6. Comparison with Neighbors

Country	% of Population with Access to Electricity, 1999	Electricity Consumption Per Capita (KwH), 2001	GDP Per Capita Purchsing Power Parity-US$(2001)	Population Density /Sq.km
Lesotho	3	50	2,450	70
Mozambique	5	53	900	22
Tanzania	5	74	610	37
DR Congo	5	32	590	22
Uganda	6	53	1,200	103
Angola	9	34	1.300	10
Zambia	10	540	370	13
Namibia	11	490	4,500	2
Botswana	13	912	7,300	3
Swaziland	14	303	4,200	64
Zimbabwe	17	394	2,450	31

Sources: World Energy Council; The World Bank; and U.S. Central Intelligence Agency *World Factbook*.

25. That is, when GDP is converted to U.S. dollars by using an exchange rate that reflects the purchasing power of the currencies involved rather than the market exchange rate.

also stands in stark contrast to Lesotho in this regard, particularly considering its comparable population density of 64 per square kilometer. Equally striking are the results of Namibia and Botswana with four times higher access to electricity compared to Lesotho, but with population densities of only 2 and 3 per square kilometer, respectively.

Supply Situation

Traditionally, the LEC used to import most of its electricity needs from the RSA. When the Muela hydropower plant came into operation in 1998 as part of the LHWP, it started supplying, under a power purchase agreement between the LHDA and LEC, almost 90% of Lesotho's electricity needs. The balance is met by imports and a few off-grid mini-hydro and diesel plants.

Figure 5 depicts the current electricity market and supply situation in the country. It may be noted that LEC can, in the foreseeable future, obtain from Eskom and the Southern African Power Pool all the electricity it may need. Therefore, there is effectively no supply constraint for grid power in the country.

During the politically unstable years of the 1990s, there was a significant deterioration in the LEC's performance. In an effort to reform the company and improve efficiency, the GOL signed in 2001 a 13-month management contract for the LEC with a private sector management contractor through an international competitive bidding process. This was the first step in a Lesotho Utility Reform Project that included the creation of a regulatory authority and plans for a sale of the LEC to an investor-owned company.

The management contractor improved LEC performance significantly, and, at the end of its contract period, it was asked to remain until an alternative arrangement for

Figure 5. Current Situation in the Lesotho Electricity Sector

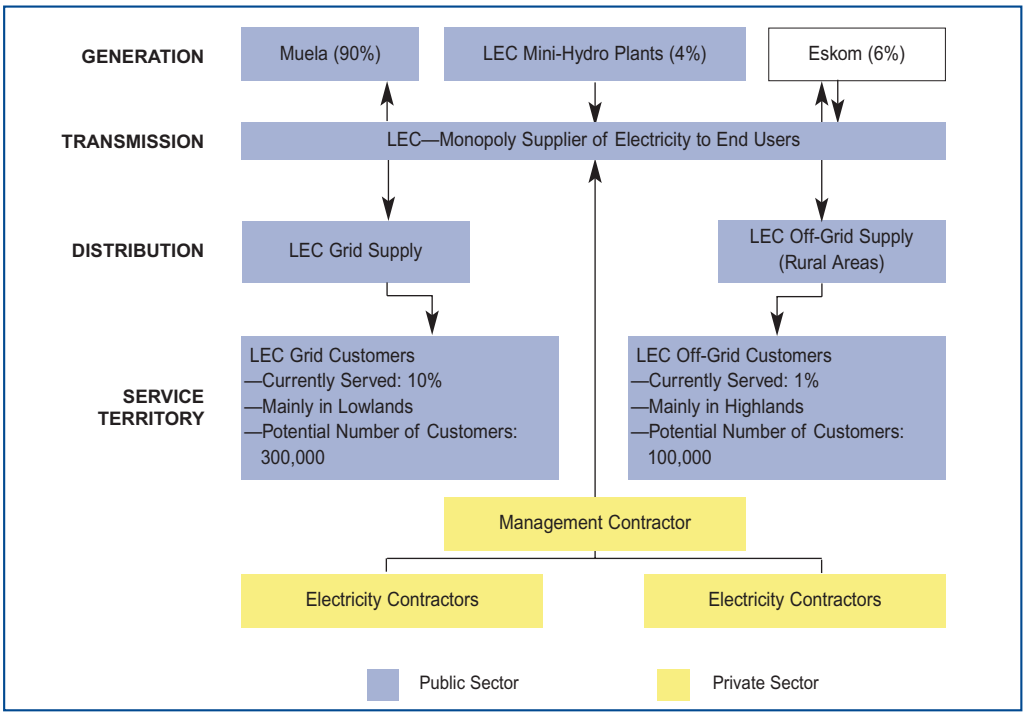


Table 7. LEC Performance at a Glance

Year	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01
Max. Demand (MW)	42	44	43	47	50	64	66	71	76	73	74	71	76	35	39
Total Energy (GWh)	160	174	135	195	206	250	239	313	330	237	313	239	359	300	335

Note: System load factor: 50% approximately on an average
Source: LEC.

LEC is put in place. **Table 7** provides data on LEC performance over the last 15 years. **Table 8** presents a summary of the LEC's financial results for recent years. The unstable situation between 1995 and 1999 is quite clear from **Table 7**. **Box 3.4** summarizes the rather impressive performance of the private operator at the LEC.

Under a revised scheme now under consideration, the LEC or its successor will own the transmission lines up to Muela's doorstep, and it will be required to buy all the available power from Muela. If at any time, Muela's power supply exceeds the LEC's needs, the LEC will be free to export the excess power. For this purpose, the National Control Center will be managed by the LEC, although ownership of the center will be retained by the GOL.

The tariff for Muela has been an important issue in the country. Many think that it is too high. Some have argued that since the LHWP was built primarily to supply water to the RSA under a specific treaty, an incremental costing principle should have been used to price electricity generated by plant. Moreover, the treaty also provided for equal sharing of perceived benefits that resulted from the RSA not choosing a specific alternative site within its own territory for developing water supply. The LHWP is supposed to be completed in four phases by 2020, but the second phase has already been postponed because forecast demand for water has not materialized in the RSA.

An analysis of data collected in **Table 8** indirectly indicates that there must be a significant level of stand-alone generation in the country, although no data on that were available.[26]

In the final analysis, supply of electricity is not a constraining factor in Lesotho, at least for the foreseeable future. Import of electricity from Eskom and the Southern African Power Pool can be increased to a great extent, if necessary.

Box 3.4: Management Contractor's Performance Record at LEC

In two years, management contractor:

- Reduced system losses from 25% to 19%, of which 10% is non-technical loss by:
  - Recreating the customer database through a house-to-house search.
  - Preparing detailed maps of the LEC's network, and a new meter database (based on survey and GIS use).
  - Installing prepaid meters for all domestic consumers (this may be a record among developing countries) currently numbering about 25,00.
  - Improving collections from less than 50% to about 85%.
- Improved productivity by almost two-thirds; increasing consumers per employee from 35 to 58 by:
  - Reducing staff by 30%.
  - Encouraging many technical workers to take voluntary retirement, and then allowing the able ones among them to bid for installation and connection contracts.
- Increased electricity sales by almost a third from 470 to 610 MWh/year by:
  - Adding 5,014 new connections since April 2001 and August 2002 (8,000 expected).
  - Adding an additional 6,089 connections under the August 2002 extension to the management contract (for a total of 11,103 new connections under the management contractor).
- Completed a service territory study to determine the optimal service area of privatized LEC.
- Completed an access to electricity study to identify future potential customers within and outside the privatized LEC's service area.

Table 8. Summary of LEC's Financial Results: 1993-2002 (Million Maloti)

Category	1993	1999	2000	2001	2002
Revenue	100.35	105.37	76.53	76.62	113.37
Operating Costs	55.75	60.65	66.50	66.71	33.36
Overheads	45.27	41.07	43.64	47.11	61.31
Profit Before Tax	-0.16	4.15	-33.61	-37.21	-31.30
Fixed Assets	179.16	194.24	203.61	337.32	433.73
Current Assets	43.49	70.51	73.14	43.77	32.41
Current Liabilities	33.33	63.47	49.49	51.50	29.46
Total Capital Employed	133.33	201.28	232.31	334.56	491.67

Source: LEC audited financial statements.

26. Lesotho official data do not include any stand-alone generation. But the general link between GDP per capita and energy use indicates that actual energy use in Lesotho must be much higher. People familiar with the rural situation also confirm this.

In the long run, in a more liberalized energy environment, the future phases of the LHWP are also likely to come on stream, which will not only provide water to the RSA but will allow both Lesotho and the RSA to share cheaper and environment-friendly hydroelectricity.

Unreliable power can be very costly for some customers, particularly for any industrial customers that need power for continuous processing. No historical data are available on the reliability and quality of the LEC's power supply. Recent data made available by the LEC for year 2000 onwards indicate unplanned or forced outages from anywhere between 5% and 23% of hours of supply, which is extremely high.

Demand Side

From the experience of comparable countries presented in **Table 6**, and from the comments of Lesotho electrical contractors and other stakeholders, it appears that there is a significant level of pent-up demand for electricity in the country, at least in the lowlands, where 75% of households are located.

In the past, a major barrier to customers signing up for connections was the LEC's rigid policy on connection fee whereby almost the full cost of connection, 3,500 Maloti (US$437.50) and higher, was charged upfront, which proved prohibitive for many potential customers. Resources from the Lesotho Utility Reform Project loan have enabled the LEC to reduce the upfront charge to 500 Maloti (US$62.50) with the balance to be collected through energy charges for up to a period of seven years. The management contractor holds the view that further reductions in the up-front connection charge will be the most effective means of improving the take-up rate, thereby facilitating the expansion and penetration of electricity service. Such a measure is only possible, however, if an enduring mechanism is found to bridge the financial gap implied by new connections. Thus, the major remaining factor constraining demand is the LEC's current financial inability to connect all those wanting electricity who are located within the feasible distance from the LEC's network (i.e., within 200 meters of the existing network).

With the GOL's adoption of a strategy for faster economic growth, demand for electricity is likely to grow at a much faster rate. **Figure 6** presents two alternative paths for projected demand. If connection could be provided at a faster rate, actual demand may exceed both of these estimates. The proposed energy sector framework study under the DOE (currently under development) is likely to lead to an action program that should boost demand for electricity considerably, particularly in rural areas.

The Issue of Electricity Tariff

Current electricity tariff policy in Lesotho is a good example of how unwieldy decisionmaking can lead to inconsistency between policy objectives and actual actions. Two key GOL policy objectives are to:

- Increase the efficiency of the electricity sector, thereby releasing public resources for key social and economic programs.
- Increase access to electricity to at least 13% of all households by 2010.

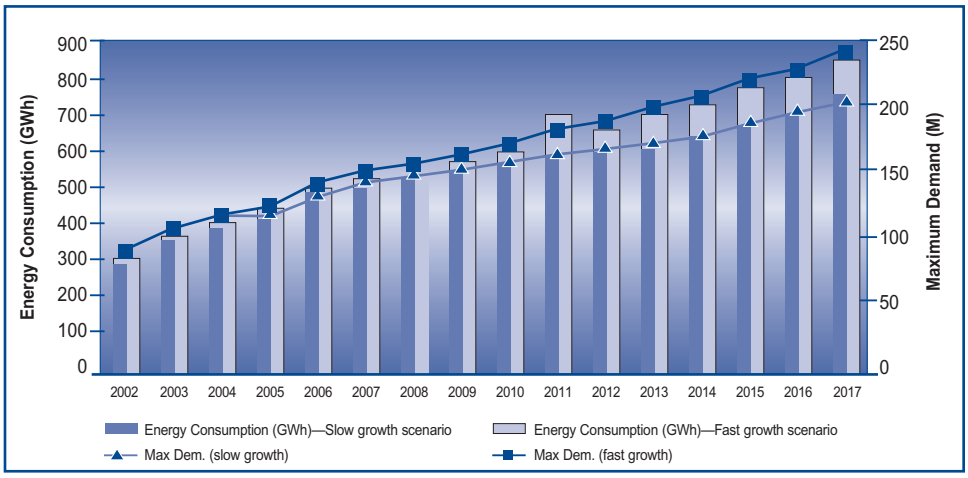
Current electricity tariffs (unchanged since 1993), however, may do exactly the opposite, as illustrated earlier by **Figure 1** in Chapter 2, and evidenced by the LEC's operat-

Box 3.5: Desired Reforms in Utility Tariffs

The regulator should ensure adherence to the following generally accepted principles for utility tariffs:

- Tariffs should be based on full recovery of costs to enable financial sustainability and allow the regulated companies to raise capital for investment, subject to demonstration that they are operating in accordance with industry norms.
- The tariff structure should reflect both the fixed and variable cost structure of the utility service and the time of consumption.
- Tariff for a specific service should be based on the cost of providing that service. Thus, the regulators should ensure that appropriate cost-of-service studies are conducted before tariffs are designed.
- Any subsidies deemed necessary should be provided directly to the service provider or the consumer rather than through the tariff structure.
- Procedures should be in place to allow for regular adjustment of tariffs to reflect changes in uncontrollable costs, such as an automatic annual adjustment program. This needs to be designed in an appropriate manner.

Figure 6. Forecast Demand for Electricity under Alternative Scenarios

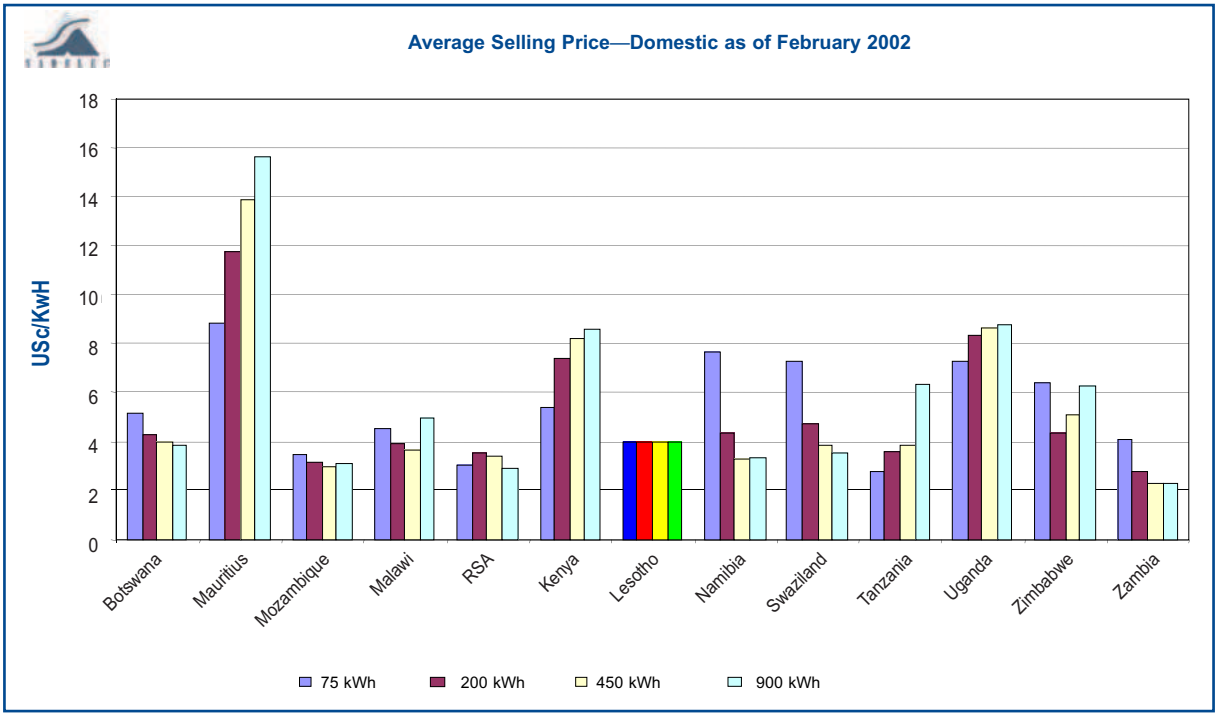


Source: Sales Advisory Group, "Market and Sector Structure Report—2002."

ing loss of more than 100 Maloti (US$12.5) over the last three years (see **Table 8**).

Figure 7 shows that Lesotho is the only country in the group where all categories of domestic customers (lifeline to luxury consumers) pay the same rate, which itself is below the LEC's unit cost, confirming the presence of a blanket subsidy as illustrated in **Figure 6**. Of the 13 countries listed in **Figure 7**, nine appear to have average tariffs higher than the LEC's (an exact comparison would require a consumer-weighted-average calculation), dispelling a widely held belief that LEC tariffs are high. The LEC tariffs cannot cover unit costs, even though these have been substantially

Figure 7. Comparison of Electricity Tariffs in Southern Africa



Source: LEC, "Tariff Increase Proposal for Lesotho Electricity Corporation," 2002

reduced by the management contractor during the last two years.

Rural Electrification

Rural areas in Lesotho have traditionally been extremely neglected in terms of electricity supply. Only about 1% of potential customers in rural Lesotho are currently served by the LEC. There is ample evidence of some private generation of power by households and businesses in rural areas, but no official data on the subject are available.

The GOL has of late become concerned about the general lack of electricity in rural areas. Studies and research have been undertaken by the DOE to establish a plan of action with regard to rural electrification, as well as increased distribution of electricity within the urban and semi-urban areas. These studies have confirmed that there is clear-cut political support for a rural electrification program.

The responsibility for implementing the rural electrification plan lies with the DOE. The government has agreed with the World Bank that feasibility of a multi-utility concept that brings a development package (i.e., electricity, sanitary services, water, roads, and postal services) should be investigated under the Lesotho Utility Reform Project. With this purpose, field trips were undertaken, in late November 2002, to nine pilot areas selected by the GOL out of the initial 29 high-priority villages that were identified in the earlier "Access to Electricity Study" report. These trips were undertaken by representatives of the DOE; Ministry of Local Government; Lesotho Privitization Unit; Ministry of Communications, Science, and Technology; and the Lesotho Telecommunications Authority; a local consultant; and a consultant from Ghana. The involvement of a Ghanaian consultant follows a study tour by a GOL delegation to Ghana, in March 2002, to identify critical success factors in rural electrification projects that also focus on productive uses of electricity and income-generating activities.

The purpose of the field trips was to determine the feasibility of implementing electricity and telecommunications pilot projects employing the multi-utility concept. The pilot areas were selected as being areas having potential for further development, i.e., they have basic infrastructure such as roads, piped water, telephones, and government offices already in place. These locations are listed in **Table 9**.

The GOL is focusing its attention on the link between (1) the infrastructure sectors; (2) quality of life, especially for the poor; and (3) private sector development and employment creation. People from all of these areas have more urgent needs in terms of jobs, food, seed, fertilizers, and bridges. These are followed by electricity and telephones. Awareness of rural electrification, and its linkages to faster growth, is yet to emerge.

For example, one of the most-needed resources in the pilot areas is mini-irrigation schemes. The Ministry of Agriculture could install pipe systems to promote productive use of electricity. The "Access to Electricity Study" established that an average household with a monthly income of 312 Maloti (US$37) spends 118 Maloti (US$14) on energy out of a monthly expenditure of 299 Maloti (US$35). It was established that households in the selected areas are on the

Table 9. The Pilot Areas

Pilot Area	Population	No. of Households (H/H)	Proposed Technology	Services Available		Paid Deposits	Local Government Committees Met
				Water	Telephone		
Dili-Dili	200	45	Cross-border connection	Yes	No	Yes	Yes
Ha Sekake	517	110	Diesel mini-grid	Yes	No	Yes	Yes
Mphaki	968	206	Diesel mini-grid	Yes	No	Yes	Yes
Mapholaneng	2,350	500	Network extension	Yes	Yes	Yes	Yes
Mokhotlong Town	-	-	Network extension	Yes	Yes	Yes	Yes
St. James	503	100	Grid extension	Yes	Yes	Yes	No
Semonkong	1,200	250	Mini-hydro/diesel mini grid	Yes	No	Yes	No
Linakeng	1,410	300	Stand-alone solar home systems	Yes	No	No	Yes
Ha Seshote	705	150	Grid extension	Yes	No	Yes	No

Source: DOE.

Table 10. Potential Customers by Customer Category

Customer Category	Inside LEC's Future Service Territory		Outside LEC's Future Service Territory	
	2005	2010	2005	2010
Domestic	321,526	354,991	119,154	131,556
General Purpose	2,237	2,469	781	862
Commercial	17,205	18,996	6,008	6,663
Industrial	59	117	9	13

Source: LEC, "Access to Electricity Study," final report.

whole enthusiastic about development, and more specifically electrification. The survey indicated that they could spend 90 Maloti (US$11) per month on average on electricity. This indicates that the average rural household can afford electricity. An indication of potential customers by customer category is shown in **Table 10**.

As **Table 10** shows, there remains a sizable demand, even outside of the LEC's service area, where the private sector can potentially take the lead. Private sector participation in rural areas has so far been very limited, and largely in renewables like solar home systems.

The Ministry of Natural Resources through its DOE began implementing in August 2002 a nine-month project entitled "Identifying and Overcoming Barriers to Widespread Adoption of Renewable Energy-Based Rural Electrification in Lesotho." This project is co-financed by the GOL and the Global Environment Facility through the United Nations Development Programme. Its overall objective is to prepare a comprehensive project design and implementation plan to use renewable energy systems to provide high-value electricity and energy for income-generating activities and social services to un-electrified rural and peri-urban communities, outside the service territory of the LEC. Close cooperation, through joint planning and implementation, will be maintained between this project and the National Rural Electrification Fund. The focus of the project will be on the delivery of energy services for priority community services, economically productive activities, households, and local government and nongovernmental organization (NGO) facilities. This project will be customer-driven, and will engage non-energy sector agencies of the government, NGOs, and donor programs to ensure that energy supply will be effectively linked with investments in social and economic development.

Role of Output-Based Aid in Rural Areas

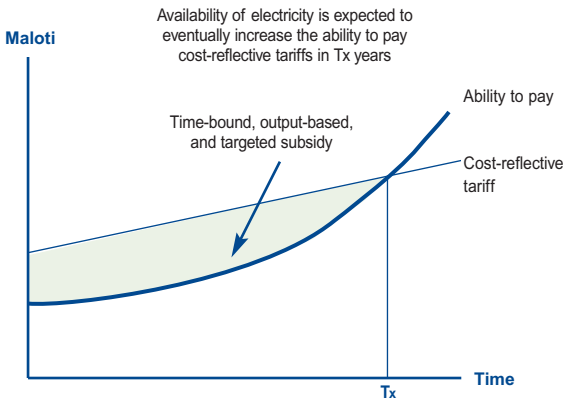
The GOL recognizes that supply of electricity in rural areas will not be commercially viable in the foreseeable future. At the same time, availability of electricity supply can potentially boost economic and social development of rural areas and subsequently of the country as a whole, through various types of multiplier effects. Consequently, the ability to pay for electricity will also gradually increase in rural areas. Therefore, what is needed is some sort of a time-bound and output-based (also targeted, if possible) subsidy for electricity, as shown in **Figure 8**. This time-bound subsidy could come from a combination of the following sources: general government budget, a levy imposed on urban electricity customers, and donor funds.

In the beginning, such output-based aid will more likely be supported by donor funds, which in the long run could gradually by replaced by a levy on urban customers, and support from the general budget.

The GOL is considering the following institutional arrangements for providing such output-based aid:

- The LEA will assume responsibility for light-handed regulation of the sector.[27]
- A National Rural Electrification Fund will be created through which output-based aid will be channeled for rural electrification.
- A National Rural Electrification Board (NREB), if established by the GOL, will administer the Fund to spearhead the implementation of a rural electrification program.

Figure 8. Output-Based Aid for Rural Electricity



27. Meaning that LEA would issue some guidelines for tariff and service standards, without actually formally regulating them for up to 10 years or so.

The DOE will initiate some pilot projects in rural areas to test different technologies and business models for delivery of electricity, using private sector entrepreneurs and output-based aid. New entrants into the electricity industry will be encouraged. These will be independent operators of isolated networks and independent operators of grid extensions in the rural areas. The Appropriate Technologies Section of the Ministry of Local Government will continue research to identify appropriate technologies for rural areas.

Key initiatives

LEC Privatization

Studies by the Sales Advisory Group to the GOL have consistently recommended outright sale of up to a 70% share of the LEC to a strategic investor.[28] However, the government has consistently resisted an outright sale, perhaps out of a concern that the same company that had earlier bought the government-owned telecommunications company may also end up buying the LEC through an international competitive bidding process, and, consequently, one private company could wield too much economic power in the country. In March 2003, the GOL came to an agreement with the World Bank to grant a time-bound concession for running the LEC to a successful private sector bidder. The final duration of the concession is yet to be determined, though the GOL has indicated the period should be at least 15 years.

Service Territory for the LEC

In earlier preparation for the LEC's outright sale, the management contractor was commissioned to conduct a study to define an appropriate service territory for the LEC so that an eventually 'privatized' LEC could be commercially viable on its own, even after an obligation to serve was imposed on it. The study recommended maximization of the "service territory for a future LEC within the limits of commercial viability." Within this area, the LEC would have a service obligation.29 We understand from World Bank sources that all areas within 200 meters of the existing interconnected network will form the LEC's exclusive service territory, where the LEC's tariffs and service conditions would be regulated by the LEA. In other words, off-grid and isolated small hydro and diesel generation facilities, localized networks, and most of the rural areas will not be included in the LEC concession.

Outside this service territory—i.e., predominantly in rural Lesotho—options for electricity supply may include privately held:

- Off-grid supply using a variety of technologies including renewables.
- Localized network under the private sector, resulting from divestment of some of the LEC's off-grid assets.
- Concessions for a number of years in certain specific jurisdictions.
- Competitive supply for off-grid supply like solar home systems, etc.

Privatization of Muela?

DOE commissioned a Muela options study with funding from the seventh European Development Fund, but the study recommendations have neither been accepted nor rejected. The recommendations are expected to be considered by the PSPC in mid-2003. Since 'Muela is an integral part of the LHDA, many within the government feel it may not be possible to separate Muela from the LHDP without renegotiating the original treaty with the RSA.

Issues and Recommendations

Given the significant potential for a rapid growth of the electricity sector in Lesotho and the consequent economic multiplier benefits, the GOL has to make a strategic choice. Retaining the status quo is not a viable option. On the other hand, when it comes to liberalization and infrastructure reforms, there is no halfway. Since the public sector does not have enough capital, the country, by necessity, has to depend on private sector investments, whether domestic or foreign or ideally a combination of both. Since many countries now compete in attracting such private sector investments, the market potential and investment climate in the specific sector has to be sufficiently attractive for investors. Moreover, the GOL appears to be keen on seeing increased participation of Basotho entrepreneurs in the electricity sector. However, the market potential cannot be realized without rapid resolution of the major issues outlined below.

28. Sales Advisory Group to the Government of Lesotho, "Market and Sector Structure Report."

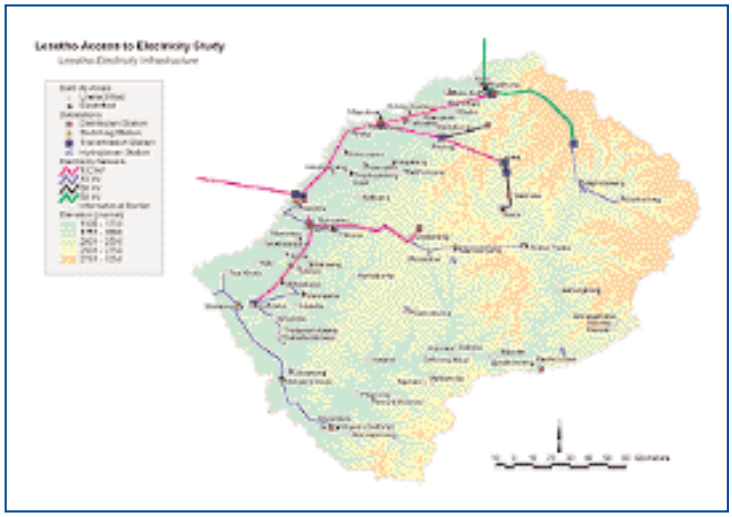
29. Management Contractor, "Service Territory Study: Final Report," 2001, p. 42.

LEC Concession to a Private Sector Firm and Basotho Participation in the Electricity Sector

The time-bound concession for the proposed LEC service territory seems to have satisfactorily addressed the concerns of the GOL. It allows private sector participation in the crucial electricity sector in several ways. To encourage the concessionaire to make necessary investments in expansion of network and services, a minimum concession period of 25 to 30 years (coinciding with the average life of major assets) may be necessary to ensure the return on investment a private sector investor may expect. By restricting the LEC service territory to the existing interconnected grid plus 200 meters around it, the GOL will be in a position to divest some of the LEC's off-grid and isolated hydro and diesel plants and connected localized networks to Basotho entrepreneurs or to investor consortia in which Basotho entrepreneurs could participate.

The LEC concession agreement could perhaps also include a provision for encouraging use of Basotho electrical contractors and entrepreneurs in network expansion contracts and connecting new customers. Local electricity contractors have already proven their technical capabilities in installing medium-voltage and low-voltage lines and in connecting customers, but they lack access to the capital market. They are interested in assuming a greater role in the sector. Through an appropriate and innovative mechanism, their participation in the sector could be enhanced.

Figure 9. Lesotho Access to Electricity Study



Post-Concession Period

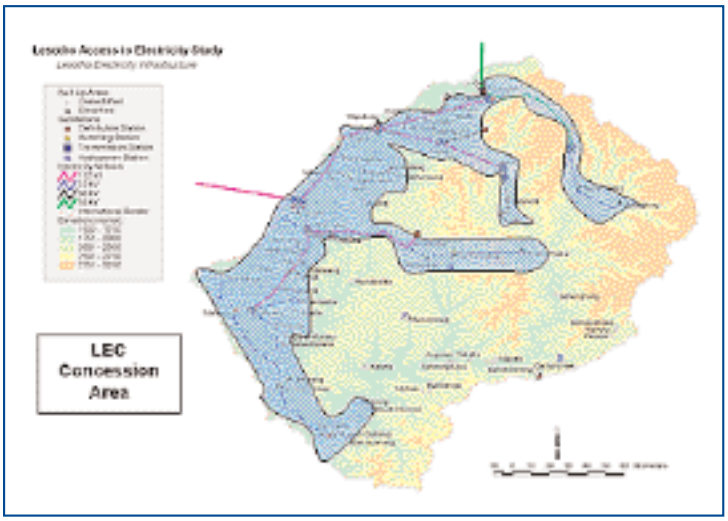


Figure 9 presents approximate pre- and post-concession maps of LEC territory.

Case for a Multisector Regulatory Agency

Given the small size of the country, there is a good case for a multisector regulatory agency for Lesotho, which would regulate all of the infrastructure sectors. In such an agency, there might be one member for each of the sectors, such as electricity, telecommunications, water, etc., plus a chairperson. Since the telecommunications and electricity sectors have already reached the regulatory stage, the proposed multi-utility regulatory board could begin operation with those two sectors, and other sectors could gradually be brought in under its umbrella as they reach that stage.

Time for Multi-Modal Rural Utility?

Since many infrastructure services in rural areas are not likely to be commercially viable on their own, it might be worthwhile for regulators to license one rural entrepreneur in a particular area to offer several infrastructure services such as electricity, telecommunications services through very small aperture terminal, Internet services through power lines,[30] etc., in order to keep unit costs and, consequently, the need for subsidy down.

Opportunities for PPI

At a stakeholders' workshop in Maseru, the participants decided, through active discussion and debate,

30. *New York Times*, "Internet via the Power Grid: New Interest in Obvious Idea," April 10, 2003, http://query.nytimes.com/gst/abstract.html?res=F30D11F3345C0C733DDDAD0394DB404432.

that private participation in infrastructure opportunities do exist in the electricity sector:

- Within the proposed LEC territory—through greater participation of electrical contractors and consultants.
- In the unserved areas within the LEC's jurisdiction—through bidding out concessions for new smaller distribution utilities.
- In the unserved rural areas—through awarding of licenses to generate and distribute electricity, supported by time-bound and output-based targeted subsidy from the National Rural Electrification Fund.

The participants also concluded that Basotho participation in all of the above is possible, as certain barriers are gradually removed. These are:

- Lack of necessary capacity in utility management.
- Lack of access to capital.
- Lack of access to information.
- Intimidating bidding documents.
- Small size of the market.

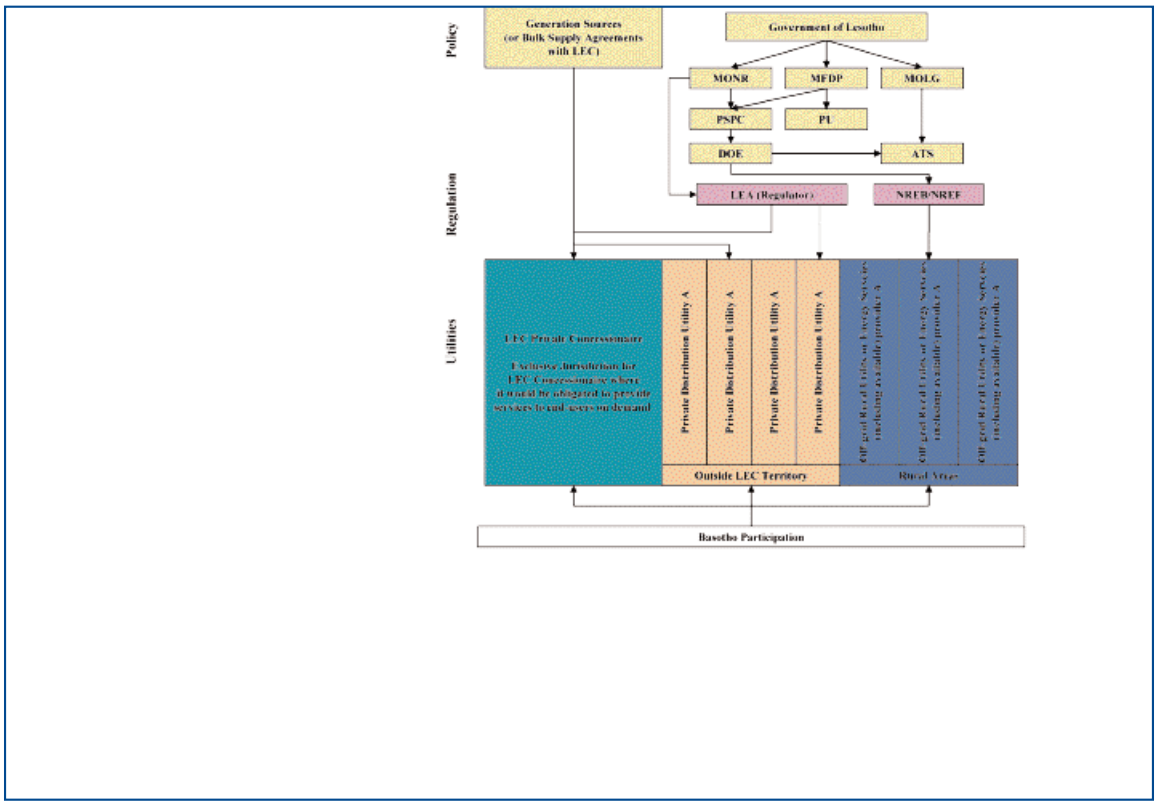
The participants felt that these barriers could be removed by:

- Designing innovative financial mechanisms to provide easier access to capital/credit, involving plant hiring and leasing.
- Knowledge building through pilot projects.
- Regular government-private sector interaction.
- Focusing more on action and capacity-building efforts than on undertaking more studies.
- Making bidding documents user-friendly.

A Vision for the Future?

Figure 10 summarizes the above discussion by presenting a scenario that may evolve if the outstanding issues in the electricity sector are resolved in the way discussed above.

Figure 10. Possible Electricity Sector Scenario



4 Telecommunications

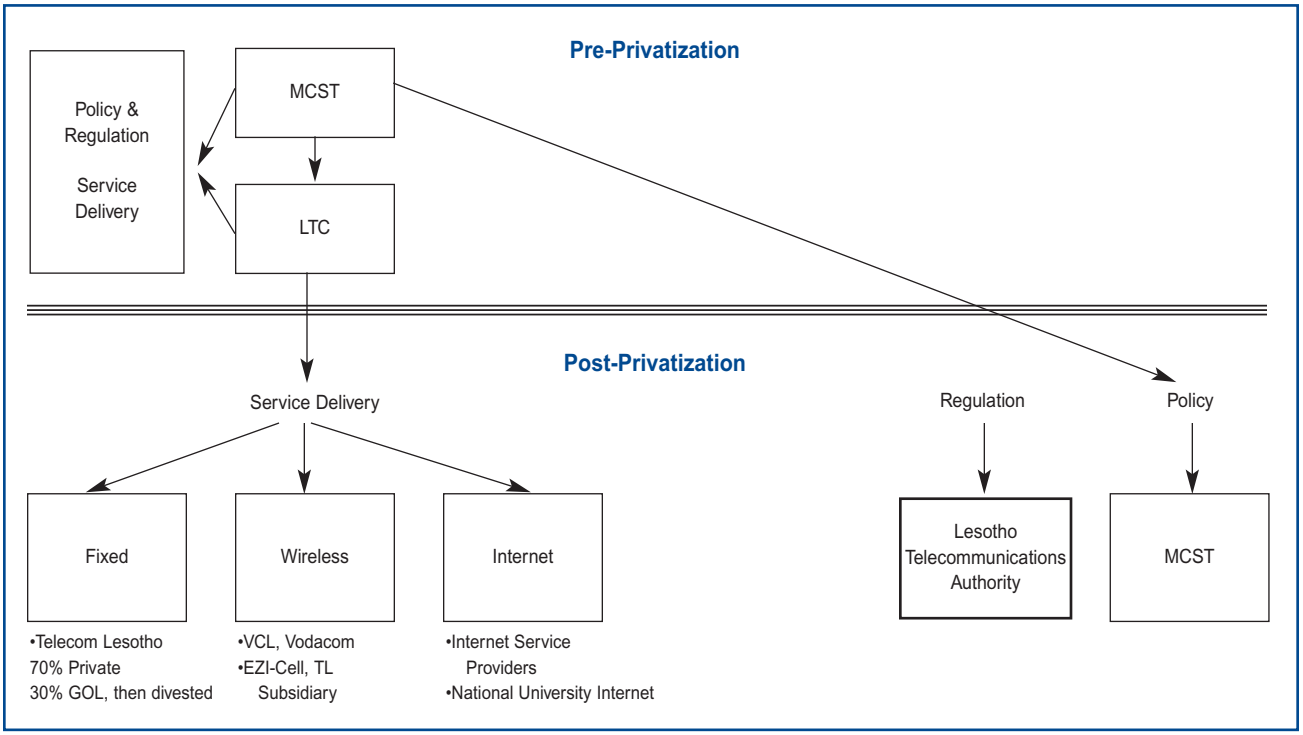
Institutional and Market Structure

Transition from a Public Monopoly to a Competitive Market Structure

Figure 11 shows the transition of the telecommunications market structure that began with the privatization of the government-owned operator—Lesotho Telecommunications Corporation (LTC), a subsidiary of the Ministry of Communications—in 2001.

The Ministry of Communications, Science, and Technology (MCST)[31] was responsible for service delivery through its LTC subsidiary. It also established sector policies

Figure 11. Telecommunications Institutional Structure Transition



31. The Ministry of Communications was merged with other government departments to form the Ministry of Communications, Science, and Technology in early 2003.

Table 11. Chronology of Market Liberalization Milestones

Date	Event
June, 1996	VCL granted a license to provide exclusive mobile services for 5 years
June, 1997	VCL commences mobile service delivery
Feb, 2001	70% divestiture of Lesotho Telecommunications Corporation
Feb, 2001	Telecom Lesotho granted a 20-yr. license with 5 yrs. exclusivity
June, 2001	VCL wireless exclusivity period expires
Mar, 2002	TL meets first year network capacity expansion targets
Mar, 2002	Econet Ezi-Cel granted second wireless operator's license
June, 2002	Econet Ezi-Cel commences mobile service delivery
June, 2002	Bethlehem Technologies granted license to deliver broadband Internet

Sources: LTA, TL, VCL.

and carried out de facto regulation. **Table 11** shows the chronology of events that transformed the government-owned telecommunications monopoly to a competitive market structure dominated by private participants.

Vodacom Lesotho Ltd. (VCL) represented the first private investment to enter the Lesotho market with a 50/50 joint venture between Vodacom Pty of South Africa and the incumbent fixed-line monopoly, LTC. In 2000, LTC's fixed-line business was formally corporatized and made available for divestiture, while the VCL subsidiary was spun off to become a separate competitor. A 70% stake in LTC was then sold to the Mountain Communications consortium, a consortium that includes South Africa's parastatal Eskom (via subsidiary Esitel), Zimbabwe's private wireless company Econet, and Mauritius Telekom. The new operator, registered under the name Telecom Lesotho (TL) was granted a 20-year operating license including a five-year period with exclusive rights to render a defined segment of fixed-line telecommunications services. Under the terms of the privatization, TL was also given the right to apply for a license to introduce a second mobile operating company into the market.

Lesotho Telecommunications Authority (LTA) was created by the Lesotho Telecommunications Act (2000) as an independent regulator to oversee the market.

The LTA granted a wireless license to TL's subsidiary, Econet Ezi-Cel, in 2002. This operator began operations in June of that year, further expanding competitive pressures within the sector. Recognizing the limitations of overall market size, it is unlikely that the LTA will license either a second fixed-line operator or a third cellular operator in the foreseeable future.

Other private market participants include three independent Internet service providers (ISPs) licensed to provide Internet access to individuals, businesses, and government offices. The National University of Lesotho has operated an e-mail and Internet service for academic use since 1996. During 2002, LTA granted a license to Bethlehem Technologies Ltd. (BTL) of South Africa in 2002 to own and operate an international gateway providing international bandwidth for Internet access and broadcasting. The license excludes the carriage of "real-time" basic voice and basic data into and out of the country and within the country, but permits the operator to offer advanced communications services deemed to be in the competitive area. BTL is still mobilizing the financing needed to commence operations, but it is expected to begin service delivery in the near future trading as Oscar Communications.

In addition, in 2002, LTA licensed the first calling card company within the Lesotho marketplace, Afric Communications. This company is reselling services using a line leased from the TL.

Finally, the emergence of telebureaus providing resale of voice telephony and other value-added service is a significant downstream effect of sector liberalization. There has been a mini-boom in this type of small business, and, as of March 27, 2003, the LTA had issued 770 licenses for telebureaus of various standards. This development has resulted in significant domestic job creation and entrepreneurial initiative not previously witnessed in the Lesotho economy. In this respect, the liberalization of the telecommunications sector in Lesotho offers powerful encouragement to policymakers to embrace private sector participation in other infrastructure sectors. Initial private foreign direct investment induced the emergence of affordable domestic investment and has proven that Basotho citizens have an appetite to engage in private business.

Box 4.1: Active Private Sector Telecommunications Players

Telecom Lesotho	Fixed line
Vodacom Lesotho Ltd.	Wireless
Ezi-Cell (TL subsidiary)	Wireless
Leo	ISP
Adelfang Computing	ISP
Square One Comnet	ISP
National University of Lesotho	ISP
Bethlehem Technologies Ltd.	Broadband
Afric Communications	Calling card

As a whole, the Lesotho telecommunications market is now characterized by a much greater degree of competition than was previously the case, and this is an encouraging development.

Sector Policies

The GOL recognized a need to create a stable framework for encouraging private investment in the sector, thus the Ministry of Communications published the Lesotho Telecommunications Policy in February 1999. Four specific policy objectives were articulated:

1. Provide affordable, efficient, and high-quality info-communication services.
2. Create an environment for sustainable info-communication services.
3. Create a code of conduct and regulatory framework for sound business practices.
4. Participate in global trends and be active in the global information society.

This policy paper provided the impetus for separating the roles of service provision, regulation, and policy. It laid the foundation for the creation of a telecommunications regulatory authority and recognized that the role of the ministry would change from one of combining policy, rule creation, implementation, and operations functions to one of responsibility for sector analysis, policy formulation, monitoring, development, and facilitation. These functions were codified in the Lesotho Telecommunications Authority Act of 2000. The act specifies that the minister may, in consultation with the LTA, formulate general overall policies for the telecommunications sector.

While no formal update of sector policy has been released since publication of the act, the MCST is currently working on the entire policy and legislative framework to encompass many new components, particularly those having to do with information and communications technology. In particular, the MCST recognizes that there is an imperative for the Government of Lesotho (GOL) to embrace information technology on a wider scale to gain efficiency and effectiveness in government processes. To that end, the MCST has become a vocal advocate in favor of a government information strategy in the context of a government-wide commitment to decentralization. This is a very relevant initiative to the GOL as a whole and becomes particularly urgent if the nation is to embrace private participation in infrastructure on a wider scale because adequate information is critical to the contractual formulation and subsequent monitoring required in private participation in infrastructure (PPI) contracts. The MCST is planning to integrate postal issues into the new policy as well.

Between the policy paper and the act, policy guidelines were published for the following:

- Exclusivity of fixed-line service provision.
- Universal service and access.
- Tariffs and interconnections between operators.
- Subsidies.
- Information and communication technologies (ICT) and Internet.
- Competition.

The policy emphasis on universal service coverage has meant that too little attention was paid to the need of improved service standards that could cater to the demands of business, such as the introduction of broadband Internet. This omission merits a remedy insofar as the formal business sector is a key driver of growth in the economy, and Lesotho'should do all it can to maintain its competitiveness in the business sector. With respect to competition policy, the 1999 statement identified the following to be competitive areas of the industry:

- Data communication, including Internet and e-mail.
- Mobile cellular.
- Radio paging.
- Pay phones and telebureaus.
- Customer premises equipment importation, manufacture, distribution, and installation.

The section on Sector Regulation touches further on how each area of policy has been dealt with by the regulator.

Sector Performance

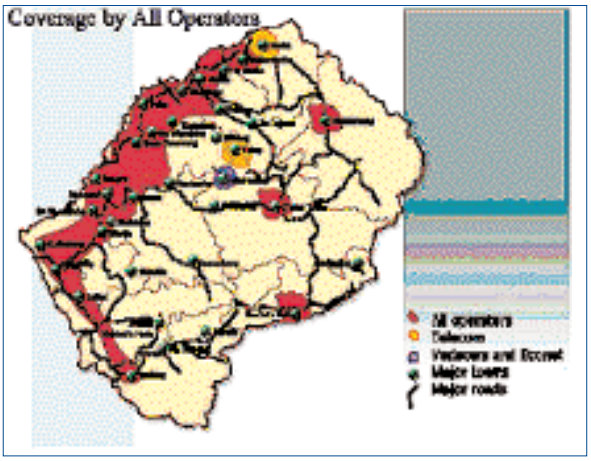
Lesotho's Teledensity Improvement under the Competitive Landscape

Prior to private entry in the sector, Lesotho had approximately 14,000 fixed-line phones, some public phones, no telebureaus, and no private ISPs. This gave the nation a teledensity rate below 1% in 1996. By March 31, 2003, the LTA reported a total of 129,500 lines, broken down approximately as follows:

- TL: 30,000 fixed lines.
- Ezi-Cel: 24,000 wireless lines.
- VCL: 74,500 wireless lines.

With a population of 2.16 million, Lesotho's current subscriber statistics give the nation an aggregate teledensity of about 6%, with mobile teledensity standing at 4.7% and fixed teledensity at 1.2% nationwide. Lesotho has made substantial progress in teledensity since the sector was opened up to private sector entry, effectively achieving a sixfold increase in teledensity in six years. The current coverage map is depicted in **Figure 12**.

Figure 12. Telephone Coverage, All Operators



Nonetheless, as **Figure 12** makes evident, teledensity is much higher in the lowland areas of Western Lesotho than it is in the mountainous areas of the country. One impediment to greater penetration is the lack of grid-provided electricity in the rural highlands. Indeed, geographic availability of telecommunications service largely correlates with that of grid electricity, whereby only 3% of the total population has an electricity connection and these are concentrated in lowland areas.

Comparison of Lesotho's Achievements to Regional Benchmarks and Trends

Tables 12 and **13** benchmark Lesotho's teledensity statistics against two peer groups in 2001 based on data supplied by the International Telecommunications Union. **Table 12** presents statistics and a rank order for Southern African Customs Union countries alone, demonstrating that Lesotho was the least competitive country in terms of telecommunications infrastructure within this peer group at the start of its liberalization; that is still the case today. On the other hand, **Table 13** compares Lesotho to a different type of peer group, notably land-locked and/or small mountainous African nations. The data show Lesotho to have been ahead of the pack.

Table 12. Comparative Teledensity in Southern Africa Customs Union Countries, 2001

Year	Country	Fixed Lines			Mobile Users			Public Phones
		000s	Penetration % Population	Rank order	000s	Penetration % Population	Rank order	
2001	Botswana	150.3	9.27	2	278	16.65	2	3,000
	Lesotho	22.2	1.03	5	33	1.53	5	370
	Namibia	117.4	6.57	3	160	5.59	4	5,300
	South Africa	4,969.0	11.35	1	9197	21.00	1	178,110
	Swaziland	32.0	3.14	4	66	6.47	3	830
2003	Lesotho	30.0	1.20	Still 5th	79.5	4.70	Still 5th	498

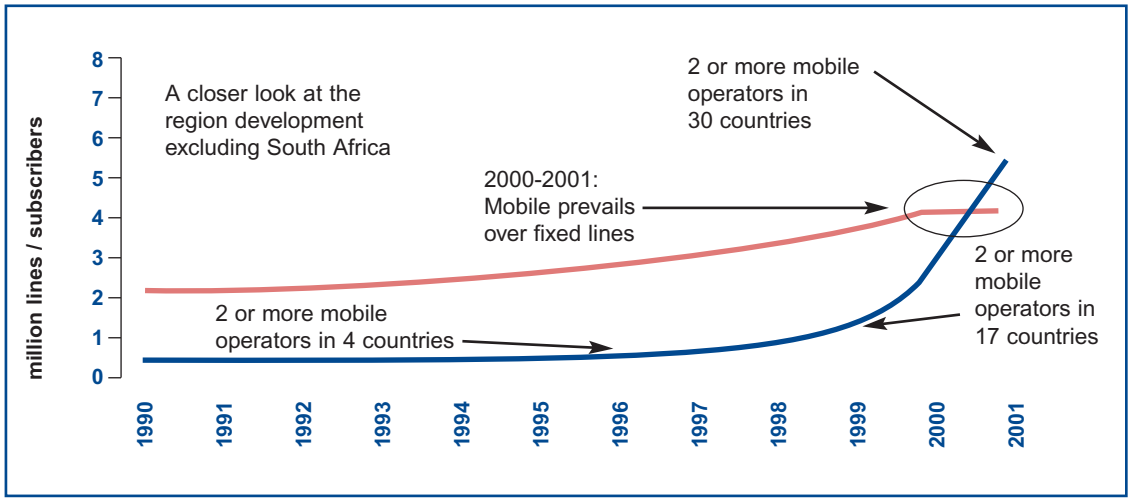
Source: International Telecommunications Union, www.itu.int/ITU-D/CDS/Countries.list.

Table 13. Comparative Teledensity in Mountainous and/or Land-Locked African Countries

Country	Fixed Lines			Mobile Users			Public Phones
	000s	Penetration % Population	Rank order	000s	Penetration % Population	Rank order	
Lesotho	22.2	1.03	1	33.0	1.53	1	370
Burundi	20.0	0.29	3	20.0	0.29	5	80
Rwanda	21.5	0.27	5	65.0	0.82	3	400
Uganda	63.7	0.28	4	322.7	1.43	2	1,380
Malawi	54.1	0.47	2	55.7	0.48	4	540

Source: International Telecommunications Union, www.itu.int/ITU-D/CDS/Countries.list.

Figure 13. Regional Growth Trends in Mobile versus Fixed-Line Subscriptions



Source: World Bank, *World Telecommunications Development Report, 2002* and *World Development Indicators, 2002*, based on International Telecommunications Union data.

A notable trend across all of these benchmark countries, with the sole exception of Burundi, is that mobile users now exceed fixed-line subscribers. This is clearly the case in Lesotho, where the ratio of cellular to fixed-line subscriptions is presently 2.65 to 1. **Figure 13** demonstrates that Lesotho is following the wider regional trend whereby growth in fixed lines is reaching a plateau whereas mobile expansion is on a steep growth path.

Fixed Line Services

The map opposite depicts the present status of fixed-line penetration in Lesotho's 10 districts, reflecting that teledensity is much higher in the capital district and lowland areas than it is in the mountains.

Fixed-Line Penetration

Table 14 depicts TL's record of expansion of fixed-line service in the country. The public operator, LTC, had chronically suffered from a lack of capital, not only for expansion of the backbone network, but also for installation of connections. Consequently, total network capacity stood at 23,000 lines at the time of privatization while installations

Table 14. TL Growth and Performance Statistics

Date	Target Per License	Subscribers	Network Capacity	Lines per Employee	Comment
1997		14,000	23,000	19	Pre-Privatization
February, 2001		14,000	Same		Date of Privatization
June, 2001		22,229	Same		Network at "capacity"
March, 2002	Expansion of network capacity by 40,000 lines	19,005	+40,000= 63,000		Network capacity expansion target met. Subscribers decreased due to rationalization—i.e., elimination of non paying lines.
October, 2002		26,246	63,000	65	
March, 2003	Installation of +25,000 lines (Added to base of 14,000 lines at privatization = 39,000)	35,000 installations, 30,000 for subscribers	63,000		Subscriber expansion falls short of target. Installations include pay phones & telebureaus.

Sources: Interview data from TL and LTA data.

stood at 14,000 connections. As a condition of the license, the LTA gave the new operator a specific network expansion target for year 1 to expand the backbone infrastructure as well as installation targets for subsequent years. By June 2001, four months after its privatization, TL had largely tapped the latent capacity of the system and had to work actively to expand the switching capacity of the backbone network. Though TL encountered significant red tape in arranging the importation of switching equipment, incurring unexpected customs duties, and securing work permits for expatriate personnel, the new operator did achieve its first year capacity expansion target within the deadline.

In addition, TL met its first year roll-out target for the installation of public phones, installing a total of 498 or 48 more than required. In contrast, TL fell short of meeting its second year roll-out targets, and the reasons for this are being explored by the operator and the regulator. Data on capital invested by TL during this period is proprietary to the company, but it is fair to say that the operator has invested capital far in excess of cash flow generated from operating revenues during its first two years of operation. Other performance indicators demonstrate tremendous progress since the days of the parastatal monopoly. The number of employees has dropped to 367, down from approximately 750 at the LTC six years ago. The ratio of lines per employee, an important efficiency indicator, has increased from 19 to 65 lines per employee from the LTC era to the present.

Both TL and the LTA agree that an independent market demand study would be valuable to determine the extent to which connection targets assigned under the license are reasonable under changed conditions. Not enough is known at present about the true demand and willingness to pay for phone services in the rural areas and mountainous highlands.

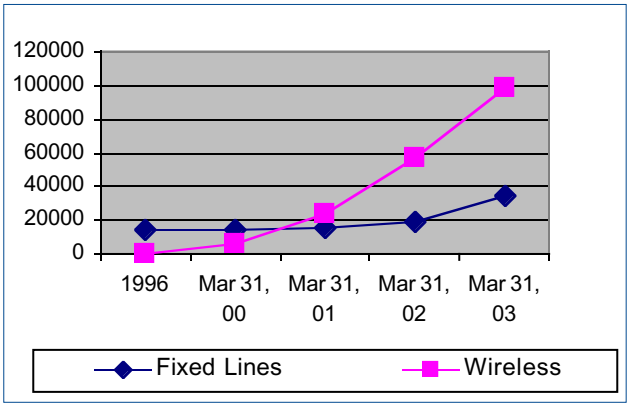
Wireless Services

Wireless services expansion by mobile operators in Lesotho'started slowly but is now in a growth spurt. As of March 31, 2003, the LTA estimated the total number of wireless users to have reached 98,500—about three times the number of fixed-line subscribers. Of that, VCL accounted for 74,500 subscribers, while Econet Ezi-Cel had succeeded in adding 24,000 subscribers during its first nine months of operation. While it is clear that VCL has significant market power with 75% of market share in the wireless segment at present, the fact is that both operators are, at this stage, focused on mopping up latent demand and are thereby expanding the Lesotho market for wireless telephony as a whole. The entry of Econet Ezi-Cel into the sector has, without a doubt, sped up the rate of VCL expansion, giving concrete testimony to the value of competition.

Figure 14 identifies the growth of all mobile telephony in Lesotho vis-à-vis that of fixed-line service.

It is also clear that Ezi-Cel's entry into the marketplace spurred the diversification of service offerings more tailored to customer needs and preferences. In particular, throughout its exclusivity period, VCL offered only "post-paid" service, meaning that subscribers had to sign up for regular monthly service, thereby incurring a regular monthly access fee, regardless of whether they would make use of the phone in a given month or not. Commencing in FY 2002, VCL began offering "prepaid" service whereby customers pay higher unit charges for usage and pay in advance to recharge their account, yet avoid a fixed monthly access fee. By the end of that year, 73% of VCL's subscribers had opted for or switched to prepaid service. Like VCL, Econet Ezi-Cel also offers a choice between post- and prepaid service. Both wireless carriers have lately introduced text-messaging services that will further increase the ability of consumers to communicate at the lowest possible cost. This type of product diversification has undoubtedly improved the accessibility and affordability of telecommunications service to the Basotho population.

Figure 14. Growth of Fixed-Line and Wireless Subscriptions in Lesotho



Sources: LTA Annual Report FY 2002, VCL reports.

Internet Services

The subscriber base in Lesotho for Internet customers remains extremely small at less than 1% of the population.

The international capacity in the country, inclusive of Internet, is a 1024 kbps line. This represents the lowest amount of international capacity in the region.

Lesotho has four ISPs: the National University of Lesotho, Leo, Square One Comnet, and Adelfang Computing. Lesotho established its own international gateway in October 2000. The venture was done in cooperation with the Leland Initiative.[32] This hub provides a link to the South Africa Internet Exchange. The hub then provides connectivity to ISPs through TL. TL is charged with managing Internet protocol (IP) addresses, but ISPs indicate the operator does not have the necessary capacity in this area. Indeed, the lack of bandwidth and high-speed Internet services is a major impediment to private sector business in Lesotho. **Table 15** presents Lesotho Internet statistics dating from 2002 as compared to the same peer countries identified earlier. This shows that, once again, Lesotho is a relative laggard in the development of the Internet, both in terms of bandwidth and in terms of customer base.

It appears that TL is gearing up to be more responsive to demands from ISP users, as it has announced that it will implement a flat rate for Internet services effective April 1, 2003. The new rate represents a 50% discount of the local call charge rate. The regulator also plans to encourage telebureaus to expand into provision of Internet service recognizing that these outlets can have a large impact on expanding access to Internet service within the country. Finally, the LTA has recently established a working group to promote the Internet in Lesotho. ISPs have indicated that they would like the LTA help in establishing an Internet Society chapter that would enable people to register Internet domains in Lesotho instead of South Africa.

Tariffs and Affordability

Since privatization, tariffs at the fixed-line operator have increased in some areas and decreased in others, though the overall trend is upwards. **Table 16** depicts the peak tariffs applied by LT at the time of privatization (year 1) as compared to now.

While each of these tariffs has been approved by the LTA and justified on the basis of costs and inflation factors, it is clear that the changing mix of prices has permitted better revenue generation by the operator. The two wireless carriers are very close in their pricing, while TL service is substantially less costly per unit of time. TL presumably makes up for lower domestic tariffs by carrying the international traffic for all carriers.

The average call time on the wireless carriers is reported to be about one minute per call. This is less than half the global norm. This is evidence that customers are using the systems, but are being very economical with their calling,

Table 15. Comparative Internet Statistics: Lesotho versus Peer Countries

Country	Dialup Internet Subscribers	Int'l Outgoing Bandwidth Kpbs	Population Millions, 2000	Rank Order on Subscribers/ Bandwidth
Botswana	20,000	14,000	1.57	2/2
Lesotho	750	784	2.06	8/7
Namibia	15,000	6,144	1.66	3/4
South Africa	750,000	342,000	44.31	1/1
Swaziland	5,000	256	0.95	5/9
Burundi	300	512	6.46	9/8
Malawi	3,500	2,300	10.75	6/5
Rwanda	2,700	1,300	6.60	7/6
Uganda	10,000	9,250	20.55	4/3

Source: Mike Jensen, "Information and Communication Technologies (ICTs) in Africa—A Status Report, Presented to 3rd Task Force Meeting of the U.N. Information and Communication Technologies Task Force," Oct. 2002.

32. The GOL signed a Memorandum of Understanding with the United States as part of the Leland Initiative to enhance and establish an Internet gateway for a period of three years with the objective of improving range, cost and quality of services of Internet within Lesotho. Policies allowing for the unrestricted flow of information were to be adopted as part of the agreement.

Table 16. Evolution in Peak Tariffs at TL for Post-Paid Service (in Maloti)

Tariff item	Year 1 (Ended 3/31/02)	Year 3 (Ending 3/31/04)	% Change
Installation	300 M	315 M	5%
Business Monthly Rental	40 M	50 M	25%
Residence Monthly Rental	30 M	50 M	67%
Local Calls	0.06 M	0.40 M	567%
National Calls 0-40 Km.	0.18 M	0.40 M	221%
National Calls 40-100 Km.	0.45 M	0.52 M	15%
National Calls 100+ Km.	0.60 M	0.52 M	-13%
Mobile Connections	1.50 M	1.62 M	8%
Internet	0.40 M	0.20 M	-50%

Source: TL license and LTA data for FY 2004.

consistent with their spending power. Despite the price competition within the marketplace, the affordability of services within Lesotho does appear to be an obstacle to the expansion of coverage in the medium to long term. From an absolute perspective, affordability appears low. For example, TL's 50 Maloti (US$6.25) monthly rental fee amounts to 600 Maloti (US$75) per year, which, when compared to per capita gross dometic product (GDP) of 2,276 Maloti (US$284.50) in 2001/02, represents 26% of per capita income. This statistic can be compared to an Africa-wide cost of monthly connection at almost 20% of per capita GDP, a worldwide average cost of 9% of per capita GDP, and 1% of per capita GDP for high-income countries. These statistics likely offer insight into why Basotho customers are finding prepaid services more affordable than post-paid plans. Even though unit costs of line use are higher under prepaid schemes, the fixed monthly fee under such plans is avoidable and consumers can better control or reduce their overall cost of consumption.

Sector Regulation

Exclusivity Regulation

The 1999 policy and subsequent privatization scheme provided for the inclusion of a five-year exclusivity period "to provide basic telephone services in Lesotho for what is referred to as domestic and international public switch voice telephone services or fixed telephony network." The LTA cast specific roll-out targets and universal service targets (represented by rural installation goals) into TL's operating license as depicted in **Table 17**.

As service expansion within the country has begun to diversify, so too has the demand for advanced communications services such as high-speed Internet, voice over Internet protocol (VOIP), and low-cost wireless solutions (e.g., wireless fidelity—WiFi). Customers are frustrated by the slow pace at which TL is embracing such technology and service offerings. Consequently, a dispute has arisen between TL and the regulator over the interpretation of "basic" versus "advanced" info-communications services. It is the operator's perspective that the use of VOIP, which could be utilized by new licensees for instance, infringes on its exclusivity rights with respect to basic voice transmission. The regulator's view is that the Internet is deemed by policy to be in the competitive arena, that TL was granted rights over "basic" voice transmission (not all voice transmission), and that TL has every opportunity to satisfy such demand itself should it so choose. This matter will be tested via the judicial system, the outcome of which will likely have an important bearing on the timing against which new-generation communications technology can enter the Lesotho market.

Granting of Licenses and Regulation of Fees

To date, the LTA has granted two mobile operating licenses, one fixed-line operating license that includes exclusivity provisions, three ISP licenses, one international broadband service license, one calling card license, and 770 telebureau licenses. The regulation of license fees is an area that has caused some consternation on the part of sector operators as the two cellular operators are charged widely varying fees. All operators requested a review of the existing license fee structure, reportedly because of its complexities and disincentives to cellular roll-out, whereupon the LTA held a consultation process on the matter. A change in the approach

Table 17. TL Operating License Targets

By This Date	Add'l TL Fixed Line Installs	Rural As % of New Installs	Additional Payphone Installs
Feb. 2002			450
Feb. 2003	25,000	8	650
Feb. 2004	30,000	10	850
Feb. 2005	40,000	10	1,050
Feb. 2006	50,000	10	1,250
Total	145,000	10	4,250

Source: TL operating license data.

to calculating license fees was then put into effect by the LTA as described in Box 4.2.

Box 4.2: Operator License Fee Formula

Previous Formula

- 1.5% turnover as royalty fee
- Annual fee (300,000 for mobiles; 700,000 for fixed-line)
- Annual spectrum fee, based upon amount of spectrum allocated
- Annual spectrum usage fee (variable as a function of tower numbers and locations)
- Application fee—once off

Revised Formula

- 3.5% turnover: annual license fee
- Spectrum fee: 1000 per MHz for fixed and 5,000 per MHz per mobile
- Application fee: as before

The trade-offs made appear to have removed a disincentive to aggressive roll-out of wireless networks, which were previously penalized because of the annual spectrum usage fee. These are the type of trade-offs that a sector regulator is expected to make, and there is no doubt that the LTA will continue to engage with and learn from the sector operators as they address similar issues in the future.

The use of transparent, competitive procedures around the granting of licenses is another area of possible concern and a critical issue for successful PPI implementation. In particular, the LTA's internal procedures promote open competition for licenses where appropriate, yet the LTA will, from time to time, receive unsolicited proposals to invest in a given line of business that merit examination. It is important in such cases that the regulator provides an open period during which other potential offerors might also advance competing proposals if a limited number of licenses will ultimately be provided to market entrants in that particular line of business. With respect to telebureau licensing, the LTA Board is pursuing a policy of domestic job creation and therefore favors Basotho participation in this line of business.

Universal Service and Coverage Regulation

As described earlier, the LTA cast the GOL's aggressive social policy objectives pertaining to extension of universal service into specific rural and urban connection targets in return for TL's fixed-line exclusivity rights. The TL license penetration targets require that 10% of new installations be located in the rural areas. Although TL succeeded in meeting first year targets of expanding network capacity by 40,000 lines, it was not entirely successful in meeting the second year target of an incremental 25,000 connections. The LTA recognizes that all telephone operating companies, whether fixed or wireless, should contribute to the national objectives of rural service penetration, and the language of its license agreements reflects this fact even though numeric targets were only included in the TL license. As a result, the LTA has now tabled a specific coverage proposal to all operators with targets reflecting the GOL's economic development strategy to locate rural facilities in "growth poles" as presented in **Table 18**. These expansion targets would span the period April 1, 2003, through March 31, 2006, and, if achieved, would have the effect of almost doubling the number of lines in the country. This would bring nationwide teledensity from 6% up to about 12% while at the same time significantly increasing teledensity in the rural mountains and Senqu River valley zones. The LTA has asked each operator to make an offer on how they might contribute to this plan.

Table 18. Revised LTA Coverage Targets

Geography	Population Distribution	Incremental Connection Targets	Incremental Teledensity
Current Nationwide Connections		129,500	6%
Lowlands	1,198,102	17,092	1.4%
Foothills	356,717	52,665	14.8%
Mountains	458,609	33,298	7.3%
Senqu River Valley	144,108	25,079	17.4%
Totals	2,157,537	257,634	12%

Source: LTA.

Regarding the financing of rural penetration goals, the LTA Act authorizes the regulator to establish a Universal Service Fund to be used as a means of spurring penetration or enabling access to poor, disabled, or underprivileged consumers. Each operator's license specifies that 2% of its gross revenue must be contributed to the fund once it becomes operational. By agreement with current operators, however, the LTA has suspended implementation of the fund until at least 2006 in order to permit the operators to focus investments on network expansion targets that can generate a return and strengthen their financial viability. This appears to be a wise decision given that the nature of the fund would be to cross-subsidize consumer segments within the sector itself; there is not yet a sufficient subscriber base on which

to levy the extra tax to enable provision to marginal customers. The backbone of private participation in the sector should not be compromised during this challenging period of new entry, investment, and economically viable expansion.

Interconnection Arrangements

Operators are expected to develop agreements covering the interconnection of their facilities, sharing of infrastructure, and the like; the premise is that the LTA will get involved in this matter only if there is a dispute between the operators; to date, no such disputes have arisen. As a practical matter, TL inherited an interconnection agreement between itself and VCL that was moderately amended prior to privatization. In the past year, the LTA launched a working group among the operators to establish a mobile-to-mobile interconnection agreement; these discussions are in progress. The next stage will be for TL to revise its interconnection agreement with VCL in a process whereby both wireless operators will join in the discussions on the other side of the table from TL. The purpose of this exercise will be to bring closure to the interconnection agreements and cause them to come into conformity with interconnection guidelines promulgated by the Telecommunications Regulatory Authority of Southern Africa (TRASA), a regional regulatory body authorized by the Southern African Development Community. The LTA recognizes the imperative of concluding these agreements, without which there is a higher chance of regulatory failure for dispute resolution should problems arise in the future.

Competition Regulation and Dispute Resolution

Competition issues have been encountered to date by the regulator both in the context of telebureau licensing and with respect to the definition of basic voice provision and its relation to the Internet. The LTA's dispute resolution with respect to telebureaus is discussed in Box 4.3. With respect to the definitional dispute, the LTA issued a 15-year license to BTL to establish and operate a satellite earth station for the provision of Internet and broadcasting carrier services. Though BTL has just begun construction, TL has expressed concern that the new license may infringe on its own rights to handle international voice services. TL disputes the regulator's interpretation of basic versus advanced communications services and is concerned that BTL's technology could be used to provide voice telephony services using VOIP technology. The technological threat is a real one as IP telephone companies can offer service more cheaply than is the case with fixed-line "legacy" infrastructure.

Box 4.3: LTA Dispute Resolution

The LTA Board was called upon in 2002 to arbitrate in a case of "fair competition" whereby telebureau operators contested a license application by a locally registered foreign company on the grounds that the telebureau business was meant to be reserved for Basotho ownership. The board invoked its published procedures and called for a public hearing. The result from this instance was that the board resolved to issue a license to the foreign investor on the premise that it would introduce more complex services such as Internet access and sale of telecommunications products that had, as yet, not been provided by the local operators.

Tariff Regulation and Change Process

The LTA regulates TL's exclusive right to set tariffs by reference to a price cap methodology. Market competition is the regulatory approach in the wireless subsector, though the LTA retains the right to review the mobile operators' tariff plans. The LTA has made improvements in its tariff review process. As regards the content aspect of tariff reviews, the LTA should maintain a clear focus on market structure when reviewing tariffs in the future, bearing in mind that competition is not a guarantee against collusion. At present, VCL exercises significant dominance in the wireless segment, and its current pricing scheme reflects its relatively greater financial strength. (For example, an Ezi-Cel recharge card expires more quickly than is the case for a VCL card.) Consequently, it is recommended that the LTA take into account "dominant player" issues and affordability matters when conducting future tariff reviews. If these concepts are unfamiliar to LTA staff, recourse might be made to TRASA or other repositories of regulatory expertise for such assistance on a short-term basis.

LTA Regulatory Processes, Staffing, Financing, and Performance

The increase in telecommunications services in Lesotho has been impressive, but the pressure on Lesotho's first regulatory authority is intense. The LTA must prove to multiple observers in the public and private sectors alike that it is unbiased, independent, not overstaffed, not overpaid, and, above all, competent to dispatch its mandate. A most critical contributor to the LTA's future success is for the institution to adhere to transparent and nondiscriminatory decision-making processes that conform to the legal framework, national policy, and principles of national justice. In this regard, the LTA has established internal administrative pro-

cedures and rules for telecommunications service operators and has made these available to the public at large on its website. This kind of disclosure will help to build transparency around the functions of the regulator. Yet, actions speak louder than words. Strict adherence to the LTA's regulation of eliciting competitive bids in instances where unsolicited proposals are received in the future will go further towards building public trust in the regulator.

With regard to staffing, the LTA's organizational chart designates a full staff of 33 employees, while the current complement is 27. At a total operating cost of 15,097,976 Maloti (US$1.9 million) in the year ending March 31, 2003, Lesotho is incurring a cost of telecommunications regulation of almost 7 Maloti (US$0.88) per capita. Whilst it is critical that the LTA continue paying salaries that are competitive with telecommunications or economist positions in the private sector, Lesotho must give some thought to the affordability of total infrastructure regulation in the future. Some economies might be achieved if the nation were to develop a multisector regulatory institution or share competencies among respective sectoral regulators.

The framework for financing the LTA operations is another area through which economies of regulation can be achieved. In particular, licensee's contributions towards the LTA's budget should be capped to the level of full cost recovery, but not more, as any contribution in excess of the LTA's budget would constitute an additional tax on the operators. Two safeguards have been erected to prevent such a situation, notably a provision that excess resources must go into the Universal Service Fund as a credit to the operators and a stipulation that the current license fee structure is only applicable for a three-year period.

On the whole, the LTA has demonstrated an understanding of the need for the sector to benefit the economy while striking a balance to satisfy operator and customer requirements. Samples of trade-offs the LTA has had to deal with to date include:

- A dispute over rights of entry into the telebureau market.
- Restructuring of licensing fees to reduce disincentives to wireless expansion.
- Fostering of Internet expansion while not injuring the fixed-line operator.
- Balancing coverage goals with market realities and financial sustainability.

Key Issues and Recommendations

The Policymaker Must Stay Engaged with the Sector Regulator

The MCST has delegated significant policy control to the regulator by virtue of assigning it responsibility for setting rural coverage targets as well as the design and implementation of the Universal Service Fund. Because the fund will involve the implementation of subsidy policy, requiring the allocation of resources between tax-payers whether through direct GOL transfers or via cross-subsidies from consumers in the sector, the policymaker should stay engaged in these matters. This will permit the policymaker to ascertain the confirmation of the Cabinet on key decisions when appropriate. At present, it would appear that the ministry lacks the capacity to match the regulator's competence in this regard; this situation should be remedied.

Social Goals Favoring Universal Service Should Be Balanced with Goals Favoring Industrial Growth

The GOL's policy emphasis on universal service targets, which was later built into the investment priorities of the fixed-line operator, appears to have overlooked the value to the economy of simultaneously expanding broadband Internet services to the formal industrial sector. A recommendation on how the LTA may address this need in conjunction with TL is advanced below.

Undertake and Make Use of Planned Rural Demand Study

It is understood that the LTA will soon commission an independent study of demand for info-communications services in Lesotho, taking care to identify willingness to pay and perceptions around affordability, and distinguishing between rural and urban consumer segments. The LTA should use the information to help it design PPI pilots along the lines identified in this report. Such a study will also inform TL and the LTA on how to deal fairly vis-à-vis the expansion targets in the TL license.

The LTA Should Explore Substitute Performance Targets with TL

With respect to the latter point, it is recommended that, if TL continues to experience difficulties in meeting connection targets, the LTA should explore substitute targets that might have more immediate economic benefit to the nation along with greater commercial viability to the operator. Depending upon the outcome of the current dispute, substitute targets might include incremental extensions to network

backbone or the wiring of industrial estates, hotels, and other business sites for broadband Internet access as examples. In such an instance, it is suggested that the LTA ask the operator to explore the viability of substitute targets and table an investment proposal to that end.

The LTA Should Explore the Concept of License-Free Spectrum

Finally, it is recommended that the LTA explore the concept of the International Telecommunicatiions Union-designated "license-free" spectrum, whereby ISPs could establish links in those bands. This is a topic on which the World Bank ICT group has assisted other countries and might be able to provide guidance in the present circumstances.

The Potential for PPI

Given that the telecommunications sector is already predominantly private, the next challenge to this sector is to encourage a diversification of services and products plus the expansion of coverage into the rural areas of the country. Regarding service diversification and the entry of new technologies into Lesotho, the pace thereof will depend on the outcome of the current dispute over the exclusivity provisions in TL's license. As regards expansion of coverage into rural areas of the country, the pace will increase as a result of the current round of coverage targets to be set between the LTA and the licensed operators. The first priority is to encourage commercially viable expansion by the operators themselves without recourse to subsidies; that is the premise behind deferred implementation of the Universal Service Fund. The second priority is to make use of information generated in the demand study to introduce appropriate info-communications solutions to poorer populations in ways that limit the need for overall sector subsidies. To that end, two types of pilot projects have been identified:

1. **Ultra-Low-Cost E-mail Access:** This initiative would test demand by rural populations for ultra-low-cost e-mail and other info-communication service offerings delivered through any technological means an operator might choose to adopt. It might be appropriate to test demand by channeling such services via public access venues such as privately owned telebureaus or publicly owned post offices. It is suggested that the LTA might draw upon resources from the Lesotho Utilities Reform Project to initiate this pilot in order to test out various approaches that can later be reimbursed and adopted by the Universal Service Fund for more extensive replication.
2. **Multi-Utility Service Delivery**: This initiative would combine the delivery of telecommunications services with other infrastructure services in demand in rural areas (e.g., electricity), thereby reducing the total costs of service delivery. It has been noted, for example, that it is feasible to carry telecommunications signals through electricity distribution wires. Such an initiative might be piggybacked onto the rural electrification pilots currently under preparation by the Lesotho Privatization Unit and its collaborating agencies.

A final area for PPI pertains to the use of public-private partnerships (PPPs) in introducing ICT within the country. Since the GOL is itself a large potential buyer of ICT services within the next decade, it is likely that Lesotho will allocate some budgetary resources to the eventual establishment of an integrated government ICT network. It may make sense to launch such an initiative through the use of a PPP. If suppliers were encouraged to assess and simultaneously satisfy latent demand for ICT services from private consumers within the Lesotho marketplace, this would spread fixed costs over a larger customer base and might result in reduced costs to both customer segments. This type of PPP approach is highly complex and is recommended only after some experience is gained by the GOL in more limited and controlled experiments with output-based aid and PPI-type contracts. Nonetheless, this PPI opportunity is identified precisely because it is the type of approach that can explicitly expand and leverage limited government spending power into broader benefits for the economy as a whole.

5 Transportation

Since Lesotho is a small, land-locked, mountainous country, the road network dominates the transportation sector. Rail and aviation transportation is limited, and the country does not have a dry port.

Given these unique characteristics of the transportation sector in Lesotho and its critical role in economic development, we break down the sector into four subsectors:

- Road Network.
- Freight Transportation.
- Public Transportation.
- Aviation.

The road network is the economic lifeline of the country and a major contributor to Lesotho's gross domestic product (GDP) growth. Freight, as well as public transportation, is an essential element of economic development. About 66% of Lesotho's freight travels via the road network, 33% via rail, and less than 1% by air. A considerable part of the population uses private minivans, taxis, and buses for travel in Lesotho (primarily the garment factories around Maseru and other Lowland cities) and for other employment, small business, and social purposes. Inter-city buses and trucks provide transportation for travel between Lesotho and the Southern African region, mostly for miners and small retail vendors. Finally, the aviation sector, limited primarily to a single route between Maseru and Johannesburg, also has unique characteristics that warrant a separate subsector discussion.

Road Network Subsector

Road Network Subsector Institutional and Market Structure

Table 19 shows significant increases in Lesotho's road network between 1988 and 2002. The total network grew about 45% in the past 15 years to its current level of about 8,000 km. Paved roads expanded almost 100%; gravel roads 65%; and earth/other roads about 57%.[33]

Accompanying the network expansion is the growth

Table 19. Lesotho Road Network, by Responsible Institution

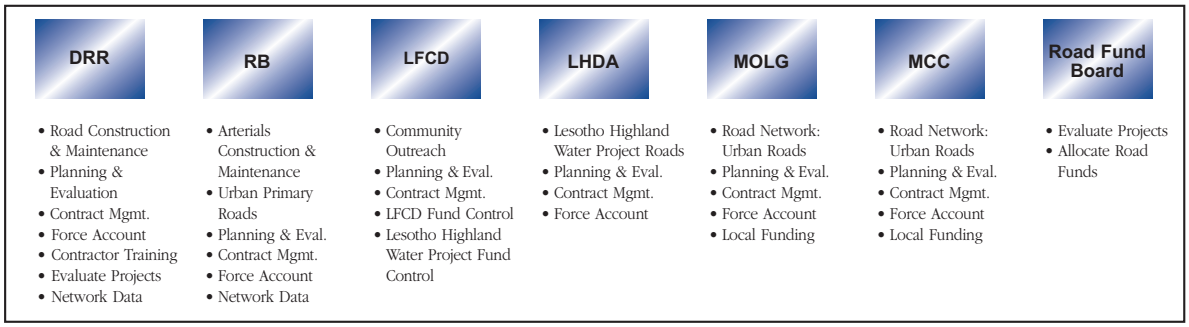
Institution	Paved	Gravel	Earth/Other	Total
Road Branch	1,105.0	1,150.0	-	2,255.0
DRR	-	2,140.0	1,360.0	3,500.0
MCC	83.3	283.3	323.6	690.2
MOLG	41.9	271.6	1,145.3	1,458.8
Total (2002)	1,230.2	3,844.9	2,828.9	7,904.0
Total (1988)	572.0	2,337	1,806.0	4,715.0

Source: Africon Lesotho, "Review of the Projected Road Maintenance Needs and the Generation of Road Fund Revenue," 2002; and Ministry of Development Planning "Fourth Five-Year Development Plan for 1986/87-1990/91 Fiscal Years," 1988.

33. The breakdown of the road network by type varies according to different sources. Table 19 is based on a recent publication by Africon Lesotho (December 2002) "Review of the Projected Road Maintenance Needs and the Generation of Road Fund Revenue", Draft Report. The Lesotho Ministry of Public Works and Transport and the Lesotho Bureau of Statistics has slightly different quantities of paved, gravel and earth roads and a smaller total network length of 6,389 km. These discrepancies are minor, but they do demonstrate the difficulty of maintaining an accurate network database.

and reorganization of Government of Lesotho (GOL) government units involved in road activities. The Ministry of Public Works and Transport (MOPWT) is responsible for new construction, road rehabilitation, routine and periodic maintenance of the road network in general. Within the MOPWT, the Road Branch (RB) constructs and maintains major arterials, including primary city roads; and the Department of Rural Roads (DRR) maintains the rural network, and upgrades earth roads to gravel roads. Several other agencies are also involved in planning, policy, construction, or maintenance of roads, as shown in **Figure 15**.

Figure 15. GOL Institutions with Road Network Responsibilities



	DRR	RB	LFCD	LHDA	MOLG	MCC	ROAD FUND BOARD
Policy	Yes	Yes	Yes	No	Unclear	Unclear	Yes
Regulation	No	No	No	No	No	No	No
Service	Yes	Yes	Yes	Yes	Yes	Yes	No

Institutions that deliver road construction and maintenance services have expanded, resulting in significant overlap of functions, as shown in **Figure 15**. Organization reform in the road sector is limited, for the most part, to shifting a portion of force account construction and maintenance work in both the RB and DRR to private contractors (see Private Contracting, below). There is also overlap in policy formulation between the DRR, RB, and Road Fund Board to select roads for upgrading and rehabilitation, while it is unclear what precise role the MOLG and Maseru City Council (MCC) play in road policy. None of the departments in **Figure 15** has any regulatory function. These are relegated to the Department of Traffic and Transportation (DTT) and the Traffic Commission for traffic and transportation control (see Public Transportation Subsector, below).

To ameliorate the overlap of road network responsibilities among different GOL organizations, the MOPWT's draft transport sector policy paper proposes a reorganization of the government agencies providing road network services.[34] It recommends a "super agency," the Road Agency, which will plan, design, construct, maintain, and finance the road network. The Road Agency is an attempt to subsume all road functions under one umbrella organization, controlled by a Road Board. The Road Board is represented by the current board of directors of the Road Fund. The Road Agency would function as a corporation and operate with a chief executive.

Creating a single super agency for the road network subsector combines revenue-raising capabilities with resource allocation, policy development, and service implementation into one organization. This may create conflicts of interest. There is no independent body to assess whether the policies implemented by the Road Agency are being carried out in a cost-effective fashion and that limited Road Fund resources are used efficiently. There is no external control outside the newly created agency for the selection and management of private contractors for multi-year output performance construction and maintenance contracts.

34. MOPWT, "Review of Transport Sector Policy," 2002.

Unlike the current situation with a separate Road Fund Board that is independent of the MOPWT, a single Road Agency Board has an inherent conflict of interest between road policy development, selecting and managing private construction and maintenance contracts, and managing Road Fund resources.

Private Contracting: Another important private participation in infrastructure (PPI) consideration in the road network subsector is the use of private contracting for road construction, rehabilitation, and periodic and routine maintenance.

The RB and DRR have begun to implement the MOPWT policy of shifting road construction and maintenance from force account to outsourcing with private contractors.[35]

A recent study by SMEC shows that almost the entire RB capital budget (construction, rehabilitation, and periodic maintenance) and a good portion of the DRR capital budget (upgrading earth to gravel roads) is contracted to the private sector.[36] However, there is still room for expanding private contracting for capital investment and maintenance in the DRR and routine maintenance work in the RB, especially longer term output performance types of contracts.

Road Funding and Private Contracting: The potential to attract PPI funding for new roads is limited. Funding new roads and maintaining the network will remain the responsibility of the GOL. PPI can contribute to the more efficient use of limited GOL funds through improved private contracting with an emphasis on network maintenance to protect current assets rather than dilute the effectiveness of these funds through network expansion.

As private contracting expands, the GOL may consider continuing reform of the the MOPWT through corporatization of remaining force account activities in road construction and maintenance. The eventual goal of the reform is to shift MOPWT's focus from road construction and maintenance to establishing road network policy, monitoring road conditions and private contracts, and setting priorities for Road Fund allocations. MOPWT becomes a manager of the road network assets and leaves construction and maintenance activities to private contracting. However, unless the GOL is better able to manage its budget process and shift spending from new construction to maintenance, uncertainty in annual funding will make it difficult to implement multi-year private maintenance contracts. It will also become increasingly difficult to keep pace with new construction and maintain the network given the ratio of new construction to maintenance spending. **Tables 20** and **21** illustrate these two budget issues.

Table 20. Road Fund Disbursements (millions of Maloti)

Institution	1999-2000 Budget	1999-2000 Actual	2000-2001 Budget
Road Branch	13.0	3.99	11.52
DRR	14.65	8.65	22.91
MCC	3.0	-	2.83
MOLG	3.51	1.61	3.33
Road Safety	1.5	0.02	1.38
Totals	35.66	14.27	41.97

Source: Africon Lesotho.

Table 21. 2002/03 Capital and Recurrent Budget for the MOPWT (millions of Maloti)

Recurrent Budget	Capital Budget	Capital Budget Financed by GOL	Capital Budget Financed by Loans and Grants	Total Budget	Total Budget Financed by GOL
126.5	198.5	55.4	143.1	324.9	181.8

Source: Minister of Finance 2003 Budget Speech.

Road Network Subsector Policies

The MOPWT establishes technical, financial, and other policies for the transportation sector. It recently prepared a draft policy paper for the sector. The key road sector and road transport policies that pertain or are amenable to PPI service delivery are as follows:

- Prioritization of Road Fund and GOL budget revenues for routine and periodic maintenance first, then construction and rehabilitation.
- Transition from force account to private contracting for construction and maintenance for paved, gravel, and earth roads using an open tendering procurement process; where possible, privatize road maintenance.
- Continue training of contractors in business and technical skills and increase the capacity of consultants; provide whenever possible continuous works for emerging con-

35. Ibid.

36. SMEC (March 2002) Road Rehabilitation and Maintenance Program, LCIDS Final Report.

tractors.

- Expand the use of labor-based methods wherever possible in order to create employment and public assets.
- Maintain a current database on the condition of all roads and ensure the entire network is incorporated in the database; develop a priority maintenance program derived from the database and cost-effectiveness analysis.
- When funding is available, upgrade roads based on social and economic rate of return analysis.
- Provide rural communities above a certain size rural access including footpaths, bridle paths, and footbridges over rivers.
- Roads will be built and maintained according to the Lesotho Road Design Standard.
- Restructure and reform the Road Fund Board and establish a single Road Agency.
- Computerize vehicle registration, licensing, road freight, and passenger transport permits to facilitate administration, revenue collection, and law enforcement.
- Enforce road safety provisions of the Road Traffic Act and regulations.
- Encourage the provision of road services to remote areas;
- Enforce axle loading and other limits on roads and ensure fair competition in freight hauling.
- Facilitate commercial operation of ferries across rivers and lakes.

Although the MOPWT is moving toward greater private contracting, it is inhibited from making this contracting more cost effective due to limitations in the network database for road conditions. An up-to-date road network database is crucial to developing the appropriate technical benchmarks for longer term private maintenance contracts.

Road Network Subsector Performance

Network Coverage and Condition: The road network has more than tripled in size since 1982 as shown in **Table 22**.[37] Road network density has also shown similar increases.

The significant increase in the network is due, in part, to the growth in road construction funding related to the Lesotho Highlands Water Project, especially in paved roads. Gravel and earth roads expanded rapidly, albeit at a slower pace than paved roads.

The rapid increase in new roads will put substantial pressure on maintenance funding. The GOL recognizes the importance of maintaining the existing road assets and has established a priority use of Road Fund revenues to maintain the existing network. In spite of the emphasis on maintaining the road network, the GOL and donors had 456 million Maloti (US$57 million) of new construction projects under development in 2001/02, whereas the GOL funded only 58 million Maloti (US$7.25 million) for road maintenance.[38]

About 80% of the paved roads are in good (50%) to fair (30%) condition. Unpaved roads are in better condition with over 95% in excellent to good shape as indicated in the MOPWT "Review of Transport Sector Policy" (2002). However, it is not clear what standard the MOPWT used to measure road condition.

Table 22. Network Statistics, 1982-2002

Paved, Gravel and Earth Road Network Growth, 1982-2002			
	1982	2002	2002 % OF TOTAL
Paved	268 km	1,200 km	19%
Gravel	1,278 km	3,789 km	59%
Earth	472 km	1,400 km	22%
Total	2,018 km	6,389 km	
Road Network Density (Km roads/total area)	6.6 km	21 km	
Roads per Capita (Km/1000 people)		3.04 km	

Sources: "Lesotho Growth and Employment Options Study" and "Activity Analysis in the Construction Sector, Khalpa Development Agency."

37. Table 19 and Table 22 provide different numbers for the 2002 total kilometers of the Lesotho network. One possible reason for the variation may be the inclusion or exclusion of MOLG and MCC roads. The MOPWT's "Review of Transport Sector Policy" cites yet another figure, 6,800 km. Again, the discrepancies among these different sources illustrate the problems associated with maintaining an accurate, reliable network database.

38. *EU Country Strategy Report,* cited in Africon Lesotho, pg.8.

Public Transportation Subsector

Traffic and Transportation

The vehicle fleet has grown over 66% in the decade between 1992 and 2002 from 23,071 to 38,448 vehicles. Light and medium vehicles increased 77% (16,090 to 28,462) and minibuses 192% (2,250 to 6,566). Much of the latter increase is related to an expansion of the textile industry in Maseru and growth in the transport needs of workers. Heavy goods vehicles showed a much slower increase, about 14% (2,415 to 2,752), but they play a major role in the import and export market. Higher capacity buses also declined during the decade, being replaced by minivans.

The DTT provides policy and regulatory services related to urban transportation such as:

- Development of the legislative framework for transport.
- Development of a transport plan.
- Regulation of fees and licensing.
- Transport policy including uniform standards and codes for transport.
- Road safety policy and coordination.

It is unlikely that PPI can play a role to assist the DTT in carrying out its regulatory and service-related functions. It may be possible in the future to outsource some of the revenue collection activities associated with vehicle registration and licenses, but this will depend on the evolution of the current tax collection reforms associated with the Lesotho Revenue Authority. Whether vehicle registration and licensing revenues are collected by a private or public organization, these fees, which are earmarked for the Road Fund, should be directly deposited into a Road Fund bank account rather than with the Ministry of Finance, which is currently the practice.

Traffic Flow and Toll Road Potential

Although the vehicle fleet is growing rapidly, as discussed above, traffic flow is still very low and would not raise significant toll revenues if the GOL decided to implement PPI activities that involve tolling schemes. The largest recorded traffic counts are at the north and south main roads leading in and out of Maseru. They average about 16,000 and 11,000 daily trips. Other than the 3,000 average daily traffic airport-related trips, most other traffic count cordons have less than 1,000 trips per day.

Lesotho Freight and Bus Corporation

The Lesotho Freight and Bus Corporation (LFBC) provides inter-city passenger and freight service within Lesotho. Table 23 shows LBFC's scheduled bus service to the highlands.

Private buses provide service to the same routes on alternate days, or the same day on demand. The Traffic Commission sets the fare, which the GOL subsidizes. This fare applies to LFBC and private buses. As a result of the low fares and limited on-demand service, there appears to be a high turnover of private buses.

Table 23. Lesotho Freight and Bus Schedule

Route	Frequency
Maseru-Mohotlong Via Leribe	Daily
Maseru-Qacha's Noeck Via Quthing	Every other day
Maseru-Semongkong	Daily
Maseru-Katsie Via Thaba Tseka	Every other day
Maseru-Sehonghong Via Thaba Tseka	Every other day
Maseru-Linakaneng Via Thaba Tseka	Every other day
Oacha's Noeck—Sehlabathebe	Daily

Source: LFBC

Table 24 presents the LBFC's year 2002 six-month operating results, but significant expenditures are not reflected in the chart. These include bus driver salaries, administrative salaries and overhead, maintenance shed costs, and depreciation of the 12-bus fleet and supporting light trucks. These costs are made up with GOL subsidies.

Table 24. LFBC 2002 Six-Month Operating Results (Maloti)

Month	Operating Revenue	Operating Expenditures	Balance
January	479,442	410,413	69,029
February	408,948	292,631	116,317
March	469,184	406,657	62,527
April	471,181	304,798	166,383
May	425,355	283,387	141,968
June	386,680	272,143	114,537
Total	2,640,790	1,970,029	670,761

Source: LFBC.

Further review of LFBC financial data and the company's accounting procedures is necessary before any accurate conclusions can be drawn regarding its profitability. It may be

possible to improve the efficiency of the bus company through private lease contracting, but a detailed financial analysis is required to determine if this is a viable option.

Summary of Key Issues in the Road Sector

- Overlap of government agencies responsible for road design, construction, and maintenance.
- Local government is responsible for city roads, but it lacks technical capacity and financial resources.
- Unpredictable annual budget allocations from the Treasury to the MOPWT due to ongoing fiscal budget constraints. This makes it difficult to predict annual GOL subsidies for longer term output performance contracts.
- Unpredictability of annual Road Fund maintenance revenues. This is also an obstacle for longer term output performance contracts.
- Pace of new construction exceeds the financial capacity of the MOPWT to maintain the upgraded network.
- The private contractor training program could move to a new phase, shifting from a focus on technical skills to developing Basotho business skills.
- Lack of reliable database to establish road network conditions required to monitor maintenance contractor performance might be an obstacle to creating longer term output performance contracts.
- Ongoing subsidies required to keep the LFBC financially solvent.
- Lack of a financial analysis mechanism to prioritize policy goals—which MOPWT activities should receive minimum recurrent and capital budget allocations? There is a need to adjust policy goals to available GOL recurrent and capital budget constraints.
- Low-quality and deferred maintenance of minivans and other private vehicles used in public transportation is a contributing factor to the high accident rate. The government may consider a leasing program to help private operators purchase new vehicles.
- There is a need to justify the funding breakdown between road expenditures that support the garment industry and other foreign direct investment (FDI) and expenditures that support expansion and maintenance of the overall road network, especially rural access.[39]
- High accident and fatality rate requires continued emphasis on safety measures; lack of enforcement of vehicle inspections and operating conditions is a major contributor to the safety problem.
- Regulation of truck axle loading to limit road damage, enforcement of traffic laws, cross-border controls of goods movement.
- The urban transportation system requires route and operational reform, perhaps through limiting the number of minibuses on fixed routes.

Freight Transportation Subsector

Rail Freight Service

The primary issues for the rail sector are twofold: first, to maintain operation of the Marseille-Maseru branch line; and second, to maintain competition between truck and rail cargo hauling. Rail container transport service is strategically important to the garment industry. It depends on raw material imports and exports of its product to markets in the United States and Europe. The disappearance or degradation of rail service would jeopardize the garment industry and put upward pressure on truck transportation costs. For garment producers, rail use is essential for the movement of most time-insensitive exports (70%) and for almost all imports (90% or more). Rail transportation is also important for the food and agricultural business. It is the mode of choice for importers/processors of bulk food staples. PPI may have a role in reforming rail services, but not with any cost recovery benefit for the GOL as its objective. The first priority is to maintain service over the Spoornet network; the second objective is to improve the quality of service.

Currently, Spoornet is considering a concession for the Marseille-Maseru branch line. Since this line falls below Spoornet's 53% operating cost recovery threshold, it can be spun off. A new private operator would most likely maximize financial returns, which may not be in the long-term economic interest of Lesotho shippers, especially garment and other FDI-related industries.[40] Moreover, the operating and service improvement leverage that liner container service operators could possibly apply to Spoornet would be ineffective if they were to apply it to a small-scale operator of a light-density line. Unless the GOL is able to include

39. This issue also pertains to the water, wastewater, solid waste, telecommunications and electricity sectors in addition to roads.

40. A private operator may find it more profitable to give priority to some other cargo rather than garment industry imports and exports.

operating requirements in its concession agreement with Spoornet and to lock in current rate structures that are in its long-term economic interest, no other guarantee exists that the concessionaire will continue to operate the branch line to support overall economic growth.

The best way for the GOL to deal with a potential Marseille-Maseru line abandonment is to install a consortium of liner container service operators to manage the Spoornet terminal in Maseru and to legally establish the terminal as a "dry port." The dry port would have customs services for processing imports and export duties. The shipping lines would offer delivered services into the Maseru dry port as if it were an actual port. In fact, this terminal outsourcing arrangement is similar to the arrangements that Spoornet uses in several other container terminals that it operates outside Lesotho. Once a shipping line or a shipping line-owned company takes control of a container, it will immediately "book" that container against a specific cell in a specific vessel that is scheduled to depart on a precise date. The shipping line will exercise all of its substantial leverage with Spoornet to ensure that the container actually makes the sailing of the vessel to which it has been assigned. In addition, the ocean carrier's own logistics information system is more transparent, more globally accessible, and more informative than Spoornet's own tracing, tracking, car ordering, and waybilling systems, none of which are designed specifically for container freight. Moreover, once Spoornet's charges are absorbed into the ocean carrier's own charges, it will have a strong incentive to keep the rail charges under tight control.

Creation of the Maseru dry port would require minimum improvements to the current Mascon facility for customs processing. A second priority is to improve the deteriorating yard and storage facilities at Mascon. The cost of these improvements are on the order of US$1.5 million with incremental funding for adding dry port facilities to help attract a shipping line company to operate the facility.[41]

On the other hand, an adverse change in Mascon railhead operations would shift a greater market share of goods hauling to the trucking industry. The effect on shippers, especially garment shippers, would be substantially increased transport costs and less negotiating leverage with the two remaining motor carriers that offer services to and from South African ports.

Truck Freight Service

Heavy-duty trucks hauled 397,440 tons of freight across Lesotho borders in 1992 with the remainder of the total annual tonnage, 297,360 (total of 694,800 tons), carried by medium trucks.[42] There is no price regulation of truck freight tariffs, and truck weights are not controlled, but cargo haulers are required to have the appropriate permits.

The trucking industry in Lesotho is controlled by a limited number of carriers, all of whom are affiliated as agents of South African companies. The Lesotho-based carriers offer distribution services throughout Lesotho from a base of operations in Maseru where they provide cross-docking for origin and destination runs throughout the country as well as warehousing services for distribution within the Maseru area. The Republic of South Africa (RSA) companies that pool equipment and provide terminal services in South African ports that allow Lesotho truck affiliates to use their bills of lading and to operate under their third-party insurance cover. These companies are among the largest carriers in South Africa. Under the customs regulations of RSA, transit traffic moving to and from Lesotho is required to move under third-party insurance assigned to customs and providing cover of 1 million Rand per consignment. The two large RSA carriers are among those few carriers that can afford this insurance coverage. These circumstances contribute to high truck transport prices in Lesotho.

Transport prices are relatively high in Lesotho for several reasons, only one of which involves the insurance requirements of RSA customs. Other reasons include:

- Route circuitry.
- Low levels of truck asset utilization and corresponding high unit transport costs.
- High percentage of empty backhaul flows.
- Lack of effective systems for scheduling and coordinating loading and unloading with line haul movements.

These problems can be addressed though the development of a PPI that involves the application of information technology to brokering, equipment interchange among car-

41. Cost figures are based on an interview with Power Logistics, the company that completed a study of the rail container yard for Spoornet.

42. *Lesotho National Transport Study*, vols. 1 & 2, March, 1994. Current statistics are not available.

riers, trip planning, dispatching, and appointment making. Moreover, the insurance regime mandated by RSA customs could be supplanted with a pooled, pay-as-you-go insurance approach, which would substantially lower the barriers to entering the trucking business.

Without the competition of the rail line, trucking prices would most likely increase further and service quality worsen. However, implementation of a PPI solution to the trucking problems would require a substantial GOL effort. The GOL's current laissez-faire attitude toward the rail line and rail freight services would have to change drastically to implement the proposed changes to rail freight operations.[43] Without improvements in rail freight service to maintain pressure on the trucking industry, truck freight transport prices will most likely rise.

Summary of Key Issues in the Freight Subsector

- The GOL needs to maintain rail service for its garment and other industries on the Marseille-Maseru branch line. It should immediately discuss with Spoornet the extension of the Mascon facility lease and continued operations of the branch line.
- The GOL can work with Spoornet to install a new terminal operator in the Mascon terminal. The new terminal operating company should be operated by a consortium of ocean carriers that provide service to Lesotho'shippers. This new arrangement would facilitate the development of a dry port, the issuance of new transport documents, and the realignment of transport custodial responsibilities that are consistent with the dry port concept. Importantly, it would reorder incentives among intermodal service participants in ways that were pro-service, pro-transparent movement, and low cost.
- Improvements to the terminal in Maseru are not essential to improve operating efficiency, but may be included in the new terminal operating contract and a small investment in the current facilities. From a rail service perspective, the condition of the track, drainage, and civil structures on the Marseille-Maseru line and the provision of two high-capacity top pickers or side porters is more important, but these improvements are unlikely to be financed by Spoornet.

Aviation Subsector

Institutional and Market Structure

The Department of Civil Aviation within the MOWPT provides all airport and aerodrome-related services as indicated in the Aviation Act of 1975 and supplementary acts, regulations, and amendments (1980, 1993). The GOL is also a signatory to the bilateral air transport agreement with South Africa and other international air transport agreements such as the Southern African Development Community Protocol on Transport, Communications and Meteorology (1996). These agreements must comply with African Union competition rules and International Civil Aviation Organization standards and practices. Lesotho does not have a national airline and has designated South Africa Airways as its international carrier.

The Department of Civil Aviation is responsible for aviation activities in Lesotho including:

- Licensing and regulation of air transport operations according to International Civil Aviation Organization standards and recommended practices.
- Operation and maintenance of the Moshoeshoe I International Airport (MIA) terminal and the regional aerodromes and airstrips.[44]
- Ensuring that GOL aviation policy is in compliance with bilateral, regional, and international air legal agreements.

The department's major aviation asset is the Moshoeshoe I International Airport, which was built to handle primarily Boeing 727 aircraft, although it can accommodate larger aircraft on occasion. MIA primarily serves the Johannesburg-Maseru route, which has three inbound and out-bound flights per day. There are occasional unscheduled international flights from MIA. Domestic service from MIA was terminated when the private company that purchased the national airline went out of business in 1999. Other domestic flights for official government business use the paved Mejametalana Airport in Maseru. It can only accommodate propeller-driven aircraft.

The department also manages 28 aerodromes in the districts, three of which have paved runways, with the remainder having gravel runways. About 15 of these aero-

43. The lease of the Mascon railhead expired several years ago and no GOL effort has been put forward to renew the lease with Spoornet, not to speak of the sustained effort that would be necessary to implement the rail freight changes recommended above.

44. South African Airways provides ground handling services for international passengers.

dromes are in operation, utilized mostly by charter flights for the Flying Doctor Services.

Aviation Subsector Policies

The MOPWT has a general aviation policy to provide safe, reliable domestic and international air service. However, because of fiscal constraints, the only scheduled services in operation are the international flights between MIA and Johannesburg. Domestic flights ceased operation with the demise of the private company that purchased Lesotho National Airlines.

In spite of the obvious fiscal constraints, the MOPWT's "Review of Transport Sector Policy" has an objective to upgrade MIA air freight services, which will require an investment in the tens of millions of U.S. dollars to expand air cargo. This project is unlikely to attract private investment because of the high cost of the improvements and very high risk of an adequate return. Another policy objective is to identify strategic rural aerodromes and prepare upgrading and maintenance plans. To attract private participation to improve and maintain runways and terminal facilities, the strategic airports would have to be integrated with tourist or other income-generating projects. There is insufficient demand to warrant scheduled service in the current aerodromes. However, a strategic airport may be able to generate tourist and on-demand air passenger traffic to warrant small investment in some regional airports.

Aviation Subsector Performance

Tables 25 and **26** illustrate the poor financial performance of MIA and its declining passenger traffic, even though the GOL is making progress in increasing revenues with higher passenger service charges and decreasing payroll expenditures.

MIA requires a substantial GOL subsidy to remain in operation. Losses have declined between 1999 and 2001, but the facility continues to rely on Treasury transfers to operate. The largest expenditure category, salaries, has declined from about 52% of total expenditures to 40%, but still remains a considerable obstacle to improving the efficiency of operations. Traffic declined 34% between 1995 and 2001, but now appears to have stabilized at about 25,000 passengers per year. Cost per passenger has increased 25% between 1999 and 2001, probably due to the drop in passenger traffic rather than an increase in costs. There appears to be plenty of room to improve efficiency by increasing passenger traffic and decreasing MIA operating costs. Attracting a private operator would probably be difficult because of the limited profit opportunity due to the low passenger levels.

The future of MIA and the development of the tourism industry in Lesotho are closely tied together. The future development of tourism in Lesotho will require substantial improvement from the single provider commuter air service that currently links MIA to Johannesburg. Charter services as well as direct flights to and from tourist destinations are a possibility if the tourism industry in Free State and Lesotho'should begin to jointly promote and develop their linked service offerings.

The air freight transport needs of Lesotho are less critical. Indeed, no competitive air freight routes, rates, or charges currently exist via MIA. Local trucking companies

Table 25. MIA Air Traffic and Passenger Statistics, 1995-1999, 2001

Month	1995	1996	1997	1998	1999	2001
Total Passengers	37,909	33,185	29,256	24,917	25,645	24,960
Domestic	7,741	7,470	6,980	24,524	24,937	24,960
International	28,985	23,912	22,276	393	708	NA
Other	1,183	1,803	NA	NA	NA	NA
Cost per Passenger	NA	NA	NA	NA	189	237

Source: "Review of Transport Sector Policy."

Table 26. MIA Revenues and Expenditures, 1999/2000 through 2001/2002 (in Maloti)

		1999/00	2000/01	2001/02
Revenues	Airport Passenger Service Charge	188,225	NA	522,480
	Landing and Parking Fees	39,843	70,200	72,625
	Other (Shop/restaurant, rentals)	32,559	11,081	42,255
	Subtotal	260,627	NA	637,360
Expenditures	Salaries	2,501,913	2,136,858	1,599,321
	Power & Communications	619,827	631,761	660,000
	Maintenance	842,935	496,704	463,773
	Minor Works	182,521	338,791	149,932
	Vehicle Maintenance	73,999	377,453	174,425
	Other	636,625	581,242	920,963
	Subtotal	4,857,820	4,562,809	3,968,414
	Surplus/(deficit)	(4,597,193)	NA	(3,331,054)

Source: Department of Civil Aviation.

haul all air freight consignments to and from Johannesburg International Airport. Some interest exists among high-value end growers of horticulture and perishables based in Free State to use MIA as a distribution base, but the volume of demand for freight service cannot support the proposed MIA rail and cargo expansion plan that will require tens of millions of U.S. dollars. Little interest or opportunity currently exists, either, within Lesotho's own agricultural and agribusiness sector. The GOL can act on the latter, but is dependent on economic growth of South Africa and Lesotho to increase passenger traffic.

In the rural aerodromes, the GOL has discontinued recurrent budget allocations for runway maintenance, and they continue to deteriorate which has hindered the Flying Doctor Service. Missionary nurses serve rural health clinics, but a private contractor owns and operates the planes that ferry the nurses to the rural clinics. The GOL subsidizes the cost of the plane flights. However, the private operator has ceased to land in several aerodromes because of the deteriorating runway conditions.

Summary of Key Issues in the Aviation Subsector

- A fundamental mismatch exists between the scale and the operating cost structure of MIA and the volume and frequency of aircraft that use the terminal. Efforts need to be made in the short term either to increase flight frequencies and service or to downsize the airport operation and minimize overhead costs to obtain break-even operations.
- With only one scheduled air carrier currently operating in and out of MIA, consideration should be given to combining airport management and airline ground operations under the aegis of the carrier. The current business model is inefficient.
- Priority investments for the rural aerodromes should maintain the runways in operating condition for medical emergencies, as well as target those rural runways that can encourage development of the tourist industry.
- Severe restrictions on the GOL recurrent budget and lack of maintenance funds for rural aerodromes limit the ability to meet the policy objective to provide domestic air service to strategic aerodromes.
- Consideration of alternative air service delivery to rural aerodromes is necessary; scheduled service to rural aerodromes is not feasible under current budget constraints.

Recommendations for the Transport Sector

Policy

Core Network: The GOL should identify a core road network that has a maintenance (routine and periodic) funding priority. The identification of the core network should be based on the highest economic rate of return for specific road segments combined with a policy of maintaining access to town or village "hubs"—similar to the criteria used by the DRR to select new roads. This is a "growth with equity" funding balance. The core network will support growth in the FDI sector of the economy while maintaining access to the more active remote areas. The extent of the core network should not initially exceed the available Road Fund revenues required to maintain the core network. New road construction should only take place after maintenance funding of the core network is ensured.

Integrated Planning: The MOPWT Planning Department should use an intermodal approach to evaluate rail and road investments. Alternative scenario testing of road and Mascon railhead improvements is necessary to determine the highest return on GOL's investment. The analysis would assess the damage to the road network and the increase in road maintenance costs because of a shift in rail cargo transport to roads if rail service were discontinued. This could be compared to a reduction in road maintenance costs by a shift to rail transport, taking into account the cost of the Mascon railhead improvement. PPI may be an option for investment in Mascon (see Potential PPI Projects, below). However, more important is the effort to keep the Marseille-Maseru branch line operation and transfer of freight operations to shippers. The analysis should also include an evaluation of truck transportation cost increases if the Marseille-Maseru branch line and Mascon railhead discontinue service.

Fiscal Constraints: Due to severe recurrent and capital budget limitations, the GOL needs to reassess the way it allocates recurrent and capital budget funds throughout the government, as discussed in the cross-cutting recommendations (see Chapter 4). In relation to PPI in the road sector, the proposed PPI unit within the Ministry of Finance would evaluate PPI projects submitted by the MOPWT (see Action Plan). This is part of a reform of the budgeting process that requires annual justification of expenditures, output per-

formance measures, and other evaluation methods to ensure that the GOL receives value for its recurrent and capital expenditures. The PPI element linked to this new budgeting procedure for the RB and DRR includes an expansion of private contracting for longer-term maintenance contracts.

Private Contracting: The MOPWT should expand its successful private contracting program in the RB and DRR. Expansion may include increased quantity of the network maintained by private contractors, increased duration of the contracts, introduction of technical indicators that measure contractor performance, shifts in training emphasis toward business administration rather than technical skills, and a small business development component to encourage the growth of Basotho entrepreneurs. Sufficient cost and bidding information to potential contractors is required as well as assistance in obtaining appropriate road maintenance equipment and financing for the Basotho entrepreneurs.

Institutional

Road Agency: The Road Agency should clearly separate the allocation and management of Road Fund resources from its policy and service activities. This may require two separate boards; one for the Road Fund which includes road network stakeholders in addition to government representative and a second board for the policy and service provision aspects of road construction and maintenance. The second board may include representatives from the various GOL departments (RB, DRR, MOLG, LHDA, LNDC), involved in network construction and maintenance, as shown on Figure 5.1. The Road Fund Board finances the implementation of Road Agency policy, such as the identification of the core network discussed above.

City Roads: The Road Agency should assume all policy, financing, construction and maintenance activities related to city streets until such time as local governments have competent road departments to carry out the planning, design, construction and maintenance of the street road network and an independent source of income (i.e. not the Road Fund) to finance these activities. An option to creating new local road departments is to consider private contracting for street construction and maintenance. The Road Agency would manage the private contracts in lieu of a local road department.

A possible source of funding for local street construction and maintenance is a "benefit assessment" fee paid by businesses and residents located adjacent to the street improvement.

Regulation

Consolidate Regulatory Activities in the Road Agency: The proposed Road Agency would establish a regulatory unit that combines the regulatory responsibilities of the DTT, Traffic Commissioner, Department of Civil Aviation, and any other GOL department involved with surface transportation, such as the Mascon railhead. This unit would also ensure compliance with South African Customs Union competition rules for truck and rail cargo.

Potential PPI Projects

FDI-Oriented Projects

Mascon Railhead: Pending the outcome of negotiations with Spoornet regarding the future use of the Marseille-Maseru branch line and railhead, the GOL may consider a private contract to operate the Mascon railhead. The optimum choice of operators is the shipping line that can convert Mascon to a dry port to facilitate cargo operations with Spoornet and South African ports. A previous study by Spoornet regarding the Mascon facility indicated that the private sector would not invest in the initial improvements, but might consider expansion investment pending the growth in demand for services provided by the facility.[45]

Leasing Program for Privately Operated Public Transportation Vehicles: The GOL may assist private operators of public transport vehicles such as minivans and taxis to lease new vehicles from a lease financing company. This can take the form of a leasing program, wherein the DTT (or its equivalent in the revised Road Agency) implements a vehicle leasing program for the GOL. One option for this program is to bid out the vehicle-leasing contract to a lease finance company that enters into a hire purchase arrangement with private operators. In addition to providing the new vehicles, the leasing company can also maintain the vehicles according to government standards to reduce traffic accidents. The GOL may provide a lease guarantee to support the program.

45. Interview with Empowerment Logistics.

Projects That Enhance Basotho Business Opportunities Using Output-Based Aid and/or Performance Contracts

Maintenance Contracts for Paved, Gravel, and Earth Roads: The RB/DRR (or restructured Road Agency) may consider longer-term (possibly five-year) contracts for routine and periodic road network maintenance.

Lesotho Freight and Bus Leasing: The objective of this project is to reduce GOL subsidies to the LFBC and improve the safety of bus transport to the Highlands. Private bus operators lease LFBC buses from the GOL. The LFBC is absorbed into the Road Agency, which administers lease contracts and monitors contract performance. The Road Agency regulator controls tariffs, which continue to be subsidized, but with a plan to remove the subsidy over time.

6 Water and Sanitation

Institutional Structure

The water supply and sanitation sector in Lesotho is currently undergoing institutional, legal, and regulatory reform. Although considerable progress has been made, in the short term, institutional arrangements remain complex and overlapping, yet still with some gaps. The feasibility of any form of private sector participation will depend, among other factors, on the continued success of these reforms. The scope of the reforms achieved and the challenges ahead are described below.

Figure 16 presents the organizational structure for the sector. Agencies recently created, those proposed to be created, and those to be abolished are highlighted separately.

Figure 16: Organizational Structure of the Water and Sanitation Sector

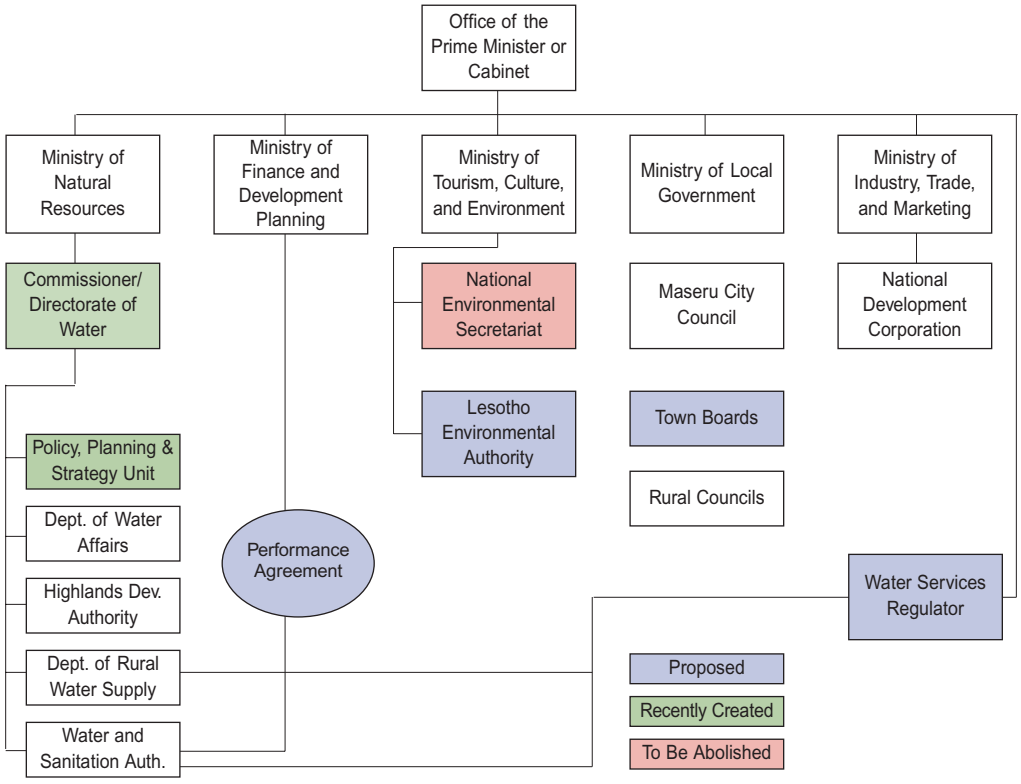


Table 27 presents the current and proposed allocation of functions among the various institutions in **Figure 16**.

The Ministry of Natural Resources is the umbrella organization for several departments and utilities. Of note are the Office of the Water Commissioner (OWC) and its Policy, Planning, and Strategy Unit (PPSU); the Department of Water Affairs (DWA); the Department of Rural Water Supply (DRWS); the Water and Sanitation Authority (WASA); and the Lesotho Highlands Development Authority (LHDA).

The roles of these agencies are further described below:

- The OWC is responsible for supervising and coordinating all the water sector activities of the Government of Lesotho (GOL). The creation of this Office is seen as an important step forward in improving sector coordination. It is expected that the Water Commissioner will in effect fulfill the role of an interim regulator until the roles, responsibilities, and powers of the regulator are defined.
- The PPSU is charged with policy analysis support and strategy for the entire water sector. While the PPSU is expected to remain a small unit, it does need initial capacity building and support.
- The DWA's role—which previously overlapped with the National Environmental Secretariat (NES) on environ-

Table 27. Current and Proposed Role of Agencies in the Water and Sanitation Sector

	EXISTING				PROPOSED CHANGES [1]			
	Water	**Wastewater**	**WR[2]**	**Environment[3]**	**Water**	**Wastewater**	**WR[2]**	**Environment[3]**
Policy/Planning	PPSU	PPSU	PPSU	NES	PPSU LG[4]	PPSU LG[4]	PPSU	LEA
Regulation	None/ WASA	None/ WASA	DWA NES	NES DWA	DOW LG[4] Future Regulator	DOW LG[4] Future Regulator	DWA LEA	LEA DWA
Monitoring/ Enforcement								
Urban/Peri-Urban	WASA Self-monitor	WASA Self-monitor	None	None	MOF—PA	MOF—PA	None	LEA DWA
Rural	DRWS Self-monitor	DRWS Self-monitor	None	None	DRWS Self-monitor	DRWS Self-monitor	None	LEA
Capital Investment Funding								
Urban/Peri-Urban	WASA	WASA	WASA LHDA	WASA	WASA	WASA	WASA LHDA	WASA
Rural	DRWS LHDA Peripheral	DRWS LHDA Peripheral	LHDA	None	DRWS LG**	DRWS LG**	LHDA	None
Operation & Maintenance/Commercial								
Urban/Peri-Urban	WASA LG	WASA	WASA		WASA LG**	WASA	WASA	
Rural	DRWS NGOs	DRWS NGOs	LHDA		DRWS LG**	DRWS LG**	LHDA	

[1] Changes proposed are part of the National Water Resource Policy, the Decentralization Act and the World Bank's Water Sector Improvement Program.

[2] **WR** = Water resources management in the context of water and sanitation services, i.e., setting water resources policy (water rights), monitoring water resources policy, building water resources structures (dams, etc.).

[3] **Envir.** = Environmental aspects of water and sanitation, i.e., setting environmental policy, regulating and monitoring pollution levels, building and operating wastewater treatment plants.

[4] LG = Local government, i.e., Maseru City Council, town boards, and city boards.

LEA = Lesotho Authority, MOF-PA = Ministry of Finance-Performance Agreement; NGO = nongovernmental organization

Note:
Highlighted cells indicate areas of potential functional conflict.

mental assessments—has now been narrowed to assessment, development, and management of water resources. Its regulatory responsibilities will also shift to providing technical support for the Water Commissioner, but it will not have any enforcement responsibility or authority.

- The DRWS is responsible for infrastructure development and service delivery in the rural areas—comprising about 70% of Lesotho's 2.2 million population. It has approximately 250 staff deployed between its headquarters and 10 district offices to direct and manage the installation and maintenance of non-grid rural systems. Nongovernmental organizations (NGOs) are also very active in this subsector, along with the LHDA in areas affected by the Lesotho Highlands Water Project (LHWP). Although the DRWS has taken the initiative to develop some small informal private contractors capable of minor construction and maintenance work, at this stage there is little opportunity to expand the role of these contractors (e.g., transfer financial risk) as they merely replace direct labor units.
- WASA is structured as an autonomous utility and is responsible for grid services to the urban areas covering a population of approximately 600,000. With some 440 employees, it manages the entire urban water cycle, including providing water and sewerage services to newly urbanizing areas including community standpipes or kiosks. For example, it manages these services in the Maseru area and charges the Maseru City Council for the water consumed. WASA also manages non-waterborne sewage collection from conservancy tanks and pit latrines, and the disposal and treatment of biosolids. Design work, most construction, and some maintenance is outsourced by WASA to consultants or contractors.
- For several years, WASA has been the subject of intensive organization improvement initiatives by the GOL, including technical assistance from a U.K. water company and other consultancy advice, and, most recently, through the World Bank's Water Sector Improvement Program (WSIP). This reflects the importance of water supply to urban settlement and industrialization initiatives. The World Bank's proposed three-year Performance Agreement currently being negotiated with the Ministry of Finance sets specific performance targets relating to, e.g., customer management, forecasting and capital investment planning, leakage control and quality control, reduction in operating costs and accounts receivable, and revenue improvements. WASA will also be required to eliminate subsidies in tariff Block C within five years (see Sector Performance). Future lending by the World Bank for capital programs will be conditional upon these Performance Agreement targets being met.
- The LHDA is responsible for the planning and implementation of the LHWP—a multi-billion U.S. dollar investment program to provide large dam storage of water for export to South Africa, and for investigating and proposing water resources development in conjunction with hydropower projects. The LHWP is a significant project by any benchmark and is an outstanding contributor to the economy of the country. It has resulted in the development of significant institutional capacity, skills, and resources in the water sector in Lesotho. With the completion of Phases 1A and 1B, LHWP activities are being wound down until Phase 2 comes on stream. Planning for organizational restructuring is under way. The LHDA has also been active in rural water infrastructure provision in areas affected by the LHWP and will hand over the numerous village systems it has constructed to the DRWS. However, no transition timeline or hand-over plan have yet been identified.

Other agencies with influence over the water and sanitation sector include:

- The Lesotho National Development Corporation (LNDC), an agency of the Ministry of Industry, Trade and Marketing, channels capital into the development of industrial sites including the provision of infrastructure. It provides some factory shells and manages the industrial sites after completion, although GOL utilities such as WASA and the Lesotho Electricity Corporation supply the sites with services. Since many recent developments have involved wet industries, the LNDC plays a significant role in the water sector. For instance, it has funded some of the water system upgrades serving the new industrial areas of Ha Thetsane and Ha Tikoe, including the refurbishment and extension of the Maseru potable water production plant. It is also the GOL counterpart agency for the European Union (EU)-funded study of wastewater needs in Maseru because of the environmental impacts caused by the wet industries it has already developed.
- The NES, which is overseen by the Ministry of Tourism, Culture, and Environment and develops policy, manages the process of approving environmental impact assessments, and monitors environmental matters in general.

The NES, however, currently has no enforcement power in the absence of an environmental act (or any staff). It will gradually be taking over that role from the DWA as and when it gets staff and legal power, and will be replaced at some yet to be determined time by the Lesotho Environmental Authority.

- The Ministry of Local Government's mission is to plan and implement the current decentralization process. It will provide guidance for the election of local officials for the Maseru City Council, the 10 proposed town boards, and the 345 rural councils that will take on service responsibilities related to public administration that are not clearly defined at this time. These local government units may also become responsible for urban services delivery at the customer interface, such as community standpipes, at a future date.

The key institutional challenges ahead for the water and sanitation sector include:

- Providing initial capacity building and support to the OWC and PPSU.
- Resolving the potential for conflict between the PPSU and proposed local government units in defining and implementing policies and plans in the water sector. Issues that need addressing include: defining how local government units will deliver water and sanitation services; how they will recover costs; what connection and/or operating subsidies GOL may provide; what regulatory apparatus will monitor and control the services; what role the private sector may play; and how several other institutional, legal, technical, and regulatory issues will be treated.
- Clarifying the responsibilities of the DWA, the OWC and the NES regarding regulatory enforcement—this is listed amongst the policy development actions of the OWC.
- Improving coordination of rural water service delivery and hand-over responsibilities between DRWS and WASA. When a rural area is re-designated as an urban area, water supply responsibilities transfer from DRWS to WASA or may, in the future, shift to the relevant local government organization. There is no guidance or regulation on how this transfer might take place.
- Defining the transition timeline and hand-over plan to DRWS for the water systems constructed by LWHP.

Water Sector Policies

Although important policy improvements are being developed, it is critical that these are further complemented, enacted, and implemented. Of particular importance is tariff policy—particularly the need to set cost recovery tariffs (especially for industrial consumers) and eliminate disguised subsidies.

The Water Resources Act of 1978 and the WASA Order of 1991 set the prevailing water and sewerage policies. Draft legislation—generally known as the Water and Sanitation Reform Bill—was prepared in 2000, but was widely criticized for focusing on privatization instead of the wider needs of the sector. A recent World Bank study on this matter identified some of the issues that need to be covered in revised legislation. Those that seem more pressing include:

1. The principles governing tariffs and cross-subsidies specified in the National Water Policy need to be clarified and further developed.
2. Tariff policies and service standards need to allow for various service levels and service delivery models so that sustainable services are available for dispersed settlements.
3. The locus of authority to regulate services provided by different types of entities needs to be specified.
4. The respective responsibilities of local and national government in the provision of services need to be clarified.
5. Access to and responsibility for providing sanitation and sewerage services were not addressed in the water policy.

The Water Commissioner has established a program to complete the necessary legislative review for enactment by 2006.

Significant progress in policy definition was made with the preparation of the draft Industrial Wastewater Management Policy in 2002 by the Water Commissioner. The Water Commissioner expects the GOL to accept this policy in 2003. The policy defines responsibilities for wastewater treatment—effluent standards, arranging financing, tariff regulation, and other aspects of managing industrial waste. The EU has also commissioned a study of water and sanitation needs in the Lowlands that will have an additional impact on demand forecasts, technical standards, regulation and other factors that affect the sector, including

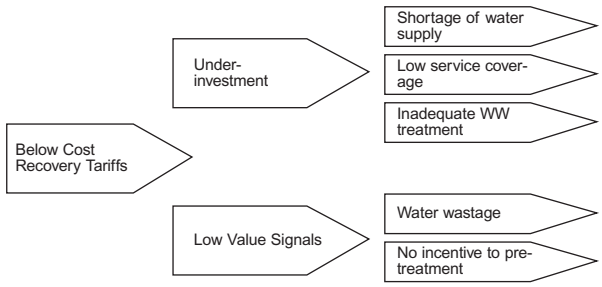
private participation in infrastructure (PPI). The study is expected to present its findings in mid-2004.

The general target for network water services coverage is to provide a minimum of 30 liters per capita per day at a maximum distance of 150 meters from the dwelling. However, there is no stated or explicit GOL tariff policy for the sector to meet this standard. No tariff is charged by the DRWS for water supply or maintenance in rural areas, although a contribution is sometimes made in kind by the beneficiaries. As a normal part of its budgeting process WASA submits its tariff increase proposals for approval to the Cabinet each year—but without any success for the past several years. However, if adopted, the proposed Performance Agreement will require WASA to set tariffs to recover operating costs, incorporate depreciation and expansion capital costs into the tariff, and transition toward full tariff recovery over time. This includes the elimination of the subsidy in Block C. **Table 28** lists the current WASA water supply and wastewater tariff levels.

Table 28. WASA Tariffs (2001) with Regional Comparisons

		Block	Range	Tariff	Subsidy	Bloemfontein	Buffalo
Water	Domestic	A	0-5 m^3	1.56	1.75	Zero (0-6)	Zero (0-6)
		B	5-10 m^3	2.61	1.46	4.20 (6-30)	2.81 (6-10)
		C	10-23 m^3	4.37	0.80		3.51 (10-20)
		D	>23 m^3	6.50	-0.87	4.55 (30-100)	4.55 (20-30)
						4.82 (>100)	5.71 (>30)
	Nondomestic			3.78	-0.41	4.57	3.66
	Standpipes	WASA Zero	Reseller taps	17.0	Reseller profit	Municipal Zero	Municipal Zero
Waterborne Sewage	Domestic	General	85% water volume	3.0	No study	35.8 (fixed)	17.33-84.58 (by plot size)
	Nondomestic	General	85% water volume	3.0	Study Needed	56.42 (fixed) + 0.46 (by vol)	30.25 (fixed) + 2.28 (by cons.)
	Wet Industries (>2 m^3/day)	Pretreated	85% water volume	0.50 (1st year)	0.67 (later years)	Not known	Not known
	Wet Industry	Untreated	85% water volume	1.07			

Note: Block C water tariff subsidy to be phased out over four years to zero subsidy.
Source: WASA and WSIP research by Sechaba Consultants (2002).



The operating results of WASA (see Box 6.1) indicate that tariffs are not high enough to recover operating costs, let alone finance expansion costs. The reasons for the operating losses are due to technical and commercial factors, discussed in more detail under Sector Performance. However tariff levels, especially for waterborne sewerage, would not recover costs even with 100% collection rates and high physical efficiency levels. Some of the key consequences of this fundamental problem of below cost recovery tariffs are shown in the diagram above and described further below.

Box 6.1: Financial Performance of WASA (Millions Maloti)

After several years of decline in performance, the utility has reduced the rate at which it was accumulating losses in its balance sheet. With the introduction of a program of tariff increases, together with additional water production and distribution capacity, it should be able to stage a recovery over the next few years.

	1998/99	1999/00	2000/01	2001/02	2002/03
Income	+39.4	+37.9	+34.2	+39.3	+43.5
Operating Expenditure	37.3	36.0	38.4	38.7	38.1
Operating Profit	2.0	1.9	-4.1	0.5	5.4
Financing	5.8	6.0	6.0	4.6	3.57
Total Costs	43.1	42	44.4	44.5	41.7
Provisions	3.45	5.93	3.67	3.88	3.87
Net Result	-7.2	-9.9	-13.8	-8.0	-2.0

Source: World Bank Mission, November 2002.

To begin with, WASA and the DWRS are unable to finance urgent investments in water abstraction, treatment, and distribution, as well as wastewater collection and treatment. This under-investment has a negative impact on the continuity of supply, coverage, and level of wastewater treatment. WASA's investment requirement for the near term has been estimated at US$52 million. The World Bank estimates that repaying this investment and covering all other costs will require a real tariff increase of 5% across all consumer categories over two years—in addition to the tariff revision already recommended under a recent U.K. Department of International Development tariff study. This increase is without taking into account the proposed concessionary tariff to wet industries—which is estimated to cost WASA US$82,000 per thousand cubic meters of wastewater processed.[46]

At the same time, consumers—in particular industrial ones—receive signals that water supply and wastewater collection and treatment are low-value services and therefore have little incentive to conserve water or pretreat their wastewater effluents. Presently, the only reason industries consider conservation methods at all is the unreliability of supply due to water scarcity. Tariff reform is especially relevant for industrial consumers—whose water and wastewater tariffs are currently subsidized by WASA to attract foreign investment, for example in the textile industry. In the absence of a direct subsidy from the GOL to WASA, the domestic water consumer carries the cost of this under-recovery, although no precise evaluation of this is possible at present.

Reluctance of the GOL to adjust tariffs in the past is explained in part by:

- This real policy conflict between competitive pricing to attract foreign direct investment (FDI) and sustainability for the water sector.
- Concern that the magnitude of the required tariff increase will have a major financial impact on both domestic and industrial consumers—i.e., the gap between cost recovery tariffs and current levels is so great that it can only be closed over an extended transition period.
- High unaccounted-for water is high, which makes a tariff increase difficult to justify before such inefficiency is addressed by WASA.

Another aspect of tariff reform is the present subsidy structure. As explained in Chapter 2, low tariffs applied to all consumers regardless of income category are actually disguised subsidies for wealthier households. Subsidies must be targeted to specific households and not applied on a general basis. Well-appointed higher income homes with numerous water fittings usually consume water in Block C, which is still subsidized. On the other hand, high connection costs (1,500 Maloti [US$187.50] in a networked area) are an obstacle to low-income households that do not have the money immediately available to pay for their own yard tap. This forces them to purchase water in small quantities from their neighbors who resell water at tariffs as high as 17 Maloti (US$2.13) per cubic meter.

This analysis suggests that tariff increases and targeted subsidies are an essential prerequisite to the sustainability of the water and sanitation sector in Lesotho. The Performance Agreement between WASA and the Ministry of Finance does incorporate clauses that will adjust tariffs to reduce subsidies. However, beyond specifically reducing the subsidies for Block C domestic consumers, it is unclear what, how, or when other tariff adjustments will take place.

Lastly, the Environmental Act of 2001 is the most recent and relevant legislation but no regulations have yet been developed to give force to its principles. Regulation of industrial effluents should be coordinated with WASA's future wastewater tariff schedules. As environmental contamination fines become a real threat, industrial consumers will be more inclined to either pretreat their effluents or pay WASA for discharging highly contaminated effluents.

In summary, the key outstanding policy issues for the sector include:

- Developing and enacting a comprehensive legislative framework covering water services and water resources that properly separates policy, regulation, and service delivery and provides for a regulator.
- The need—following a study to thoroughly investigate and formulate a comprehensive tariff plan—for substantial tariff increases. While the regulator is being created, the Office of the Water Commissioner could usefully define a transition mechanism and period to full cost recovery tariffs across all categories of consumers—

46. World Bank Preparation Mission, Aide Memoire April 24 to May 4, 2001: Proposed Lesotho Water Sector Improvement Project.

except for low-income domestic consumers. Subsidies will ultimately need to be targeted to specific households and not applied on a general basis. The development of such regulations should be coordinated with the tariff-related terms of the Performance Agreement.

- The need to improve coordination and consultation between WASA and the LNDC regarding tariffs and water and wastewater demand requirements for industrial sites. The GOL should revisit its water and wastewater investment incentives to attract FDI to the industrial sites. Some important policy questions should be posed. Will higher water and wastewater tariff charges be an obstacle to FDI? Will it shift FDI to other neighboring countries? Or can FDI investors accommodate a higher tariff? If the GOL is able to shift some of the cost recovery to the industries with higher tariffs, it could use PPI to build, operate, and finance the water and wastewater facilities. The Water Commissioner and LNDC should work together to reach consensus on cost recovery tariffs for wet industries vis-à-vis direct subsidies from the GOL.

Sector Performance

Water

WASA has some 30,000 formal connections in its supply networks, with about 17,000 (57%) of these in Maseru and about 13,000 elsewhere in 14 towns of varying sizes. A World Health Organization Africa Assessment indicated that, in 2000, coverage by formal water sources in urban areas in Lesotho was close to 30%. During the next seven years, WASA expects to double coverage in Maseru to about 35,000 connections. In the remaining urban areas forecasts of demand are not available, but they will certainly require additional investment.

Demand for water has outstripped supply capacity in recent years. The population of Maseru has risen at a sustained rate of 7% per annum for several years—partly due to migration and internal growth factors but also due to the extension of the municipal boundaries. It is now estimated at over 300,000 in 2002, according to WASA's survey of domestic and nondomestic customers.

Expansion of production facilities and extension of networks have fallen behind this population growth. Large infrastructure investments are planned for the next few years (the World Bank estimates around US$52 million for the next four to five years[47]), but these cannot be funded at present tariff levels and it is unclear whether the GOL's capital budget can accommodate WASA's planned investments on a grant-funded basis. The program for installation of networks will ultimately be determined by WASA's ability to service its debt load at any given tariff level. WASA also faces the problem of insufficient sales revenues in high expansion years when most new consumers will be low-income households whose consumption will fall into the subsidized block tariffs. The cost of connecting these consumers may also have to be subsidized, adding to this problem.

There is also a net shortage of raw water to feed the production plant during some months of the year. As new industrial and domestic consumption comes on line and this will get worse—until a new source of water is provided for Maseru in about 2011. The following scenarios—individually or in tandem—are being considered to solve this water shortage problem:

First, the Ministry of Natural Resources is currently studying the Metolong Dam as the future second source of supply to Maseru. Although the ministry first envisioned a build-operate-transfer (BOT) contract for this project, this seems unlikely because the cost to WASA of a privately financed, developed, and managed bulk water supply project will be too large. The development of such a large project will likely require financing support from a multilateral or bilateral donor or lender.

Second, a short-term option for alleviation of supply shortages could be better coordination between relevant government utilities to motivate, and then to facilitate, the release of more raw water from LHWP reserves into the Mohokare River during times of drought.

Third, in the medium- to long-term horizon, the demand for potable water could be reduced if wet industries were supplied in part with nonpotable water reclaimed from the sewage effluent that will be treated at the Ratjomose plant. Use of such reclaimed water would release the potable water

47. According to the World Bank WASA's investment plans for the near future include: Maseru Industrialization Phase I (US$5m); Maseru Industrialization Phase II (US$3.3m); Upgrading and Expansion of WWTP (US$10m); Maseru Peri-urban (US$10.7m); Augmentation of Bulk Water Supply (US$10m); and Six Towns Water Supply Phase II (US$12.5m).

supply for distribution to domestic and other consumers. This option would, however, have a negative impact on WASA's revenues as potable water that was previously sold at industrial rates would now be released to users that pay subsidized rates.

Potable water production in 2002 was about 8.5 million megaliters, but total physical and commercial losses account for some 40% of production. Although a very high number, this is comparable to the losses experienced by many urban water utilities in South Africa. However, those utilities are generally plagued by civil disobedience and refusal to pay utility services which also result in deferred infrastructure maintenance and high losses. WASA does have a very high collection rate of billed amounts, generally running above 95% and approaching 100% when arrears payments are included. The cadastre for the urban areas is not good outside the older areas, and it is probable that the customer database is inaccurate. Furthermore, unplanned and uncontrolled development in recent years, both in Maseru and elsewhere, has led to scattered land use patterns with variable plot sizes and limited or discontinuous rights of way that impact development density adjacent to networks.

Modernization of WASA's information systems would definitely help facilitate efficiency gains. Network information at WASA is all on paper records. Although kept in reasonable order, investment in a water district management system, with pressure management and sustained attention to maintenance, would contribute to lower system losses.

Centralization of technical and commercial management in Maseru further contributes to inefficient operations in more distant towns. WASA's ratio of 11 staff per 1,000 connections (2002) is high compared to a rate of 5 in a commercialized organization, but is comparable to other Sub-Saharan utilities. Water loss rates are also comparable but have particular urgency in Maseru's raw water deficit situation. WASA expects to reduce the staff/connection ratio in the next few years if the Performance Agreement is undertaken.

Other gains may be possible with the introduction of modern management techniques provided by private contractors. PPI might also be necessary to accelerate expansion, but this will only happen if further policy and regulatory reforms that reduce risks for private investors are introduced.

In the rural areas, some 1,800 villages have been provided with water supply infrastructure—varying from protected springs to boreholes. The DWRS estimates that rural water coverage is about 60%, without including systems developed by NGOs and the LHDA. The extent of coverage is sufficiently large in many districts that DRWS priorities have shifted from increasing coverage through construction to maintaining coverage through assistance in maintenance and repairs. Consistent with this view, the government distributed about 4,000 hand pumps for replacement; no new installations of this kind are now contemplated. The DRWS is developing a management information system to improve its understanding of the market. It has targeted 100% coverage of village settlements by 2020, but does not have a clear plan for how it can finance this expansion. Water is not treated or sterilized in these systems now, and the DRWS has no future plans to do so.

Maintenance of rural systems is not always satisfactory, as cash to fund such maintenance is collected on an ad hoc basis by the villagers themselves. The DRWS intends to intervene to resolve this problem and has targeted 75% fully functional systems in terms of its After-Care Service targets for 2005, with 95% coverage by 2010. Small contractors are being developed as a resource for this work, paid out of DWRS's own resources which will inevitably detract from funds available for new systems. Turnover and volumes of water produced will not be known until the managment information system is implemented, but the DRWS anticipates investment of US$5 million by the GOL, and will seek additional investment of US$15 million by 2007 from other sources for infrastructure provision, training, and operational support to reach the 2010 target. Ongoing contributions from donor grants will be needed to achieve these targets.

Coordination between WASA and the DRWS is a problem during the hand-over of operations between these two agencies. For example, hand pumps installed in the peri-urban areas prior to their incorporation into Maseru are now located within the jurisdiction of WASA, and are no longer maintained by DRWS. WASA has no skills for maintenance of this equipment because it is focused instead on pipe grid systems. Similar, but reverse, problems may occur as decentralization proceeds and local government units take on water and sewerage operating and maintenance responsibilities.

The lack of connections in expanding urban areas has led to the resale of water by connected customers to non-

connected customers, with substantial profits. Tariffs charged by resellers are estimated to be an effective 17 Maloti (US$2.13) per cubic meter, about five times the average rate charged to domestic consumers linked to the network. Small consumers are obliged to make more frequent, higher cost purchases because they cannot afford the lump sum connection fees charged by WASA (1,500 Maloti [US$187.50] for houses adjacent to networks, plus actual construction cost for more distant areas). Community standpipes are an option to reduce the resale problem, but these are often vandalized or damaged. Local government organizations intend to focus on this problem in future, but as they do not have the experience or the capacity, results may not be satisfactory.

Lesotho has turned to the private sector for assistance in improving water sector performance, although PPI is still very limited. LHDA used private contractors almost exclusively for design and construction of the LHWP. WASA uses numerous consultants for design as well as private contractors for construction and for some maintenance services. WASA is also undergoing significant "corporatization" reform itself and may be the subject of a private management or lease contract in the near future, pending concurrent progress in policy and regulatory reform.

In off-grid rural and urbanizing areas, a water tanker industry exists to serve outlying areas with potable water from WASA and other sources, using various sizes of vehicles and methods. As the DRWS and WASA roll out their extension programs, water tanker supply should decrease or relocate, but demand in peri-urban areas will exist for many years. The OWC and PPSU are expected to monitor progress here and determine whether other approaches, including PPI, might improve coverage and quality of service.

Future challenges to improve the water sector's performance include:

- Finding short-term and long-term solutions to the bulk water shortage problem in Maseru. For the short term, releasing raw water from LHWP reserves into the Mohokare River during times of drought is an option worth exploring. Long-term solutions could include the Metolong Dam, providing industries with nonpotable water reclaimed from the sewage effluent that will be treated at the Ratjomose plant, and charging tariffs that reflect the economic cost of water.
- Addressing WASA's revenue shortage to finance critical capital investment requirements. Tariff increases or grant funds are possible options.
- Reducing WASA's 40% unaccounted-for water. Although actions are already under way to improve the efficiency of the water network, significantly reducing leakage is a key step to solving the water shortage problem and providing a political basis for tariff increases.
- Addressing the funding uncertainty of rural water investment and maintenance requirements.
- Improving capacity of local government organizations to operate and manage community standpipes that will eventually reduce water resale.

Sanitation

Some 4 megaliters of sewage effluent are treated daily in Maseru, out of a potential flow of 7 megaliters/day. Losses are due to drainage system management problems, principally pump failures. The maximum theoretical capacity of the treatment works is 10 megaliters/day under optimal operating conditions. A further 3 to 5 megaliters/day of industrial effluent is not captured by the system at all and drains directly into the river. Of approximately 28,000 WASA domestic customers in Maseru, 20% have no sewage management system, 74% have various systems including conservancy tanks and ventilated improved pit latrines (VIP), while only 6% have waterborne sewerage. No data are currently available for areas of the country outside Maseru.

As the expansion of wet industries in Maseru creates significant additional demand for sewerage treatment, sewage volumes are likely to rise to over 15 megaliters/day before any solutions can be provided to these problems. Anecdotal evidence indicates that some textile industries have already funded and erected a small sewage pretreatment plant in the Thetsane industrial area, Maseru, to reduce effluent pollutants to standards acceptable to WASA prior to discharge.

WASA has attempted several times to outsource the collection of effluent from conservancy tanks and VIPs in Maseru, but so far unsuccessfully, which may have contributed to the problem mentioned above. A 2002 study by Pearson (Sanitation Assessment of Maseru Related to the WSIP) undertaken as part of the WSIP pointed out the limited option for VIPs and water-borne sewerage mentioned above and proposed alternatives such as small bore drainage with solids separation and tanker collection. The EU waste-

water study will cover this matter more holistically and in greater depth.

Challenges to improve the performance of sanitation services include:

- Expanding the collection network to capture industrial flows currently drained to the river.
- Expanding treatment capacity to cope with increased demand.

Financing both expansions will require significant increases in tariffs, foreign grants, or direct subsidies from the GOL.

Regulation

There is currently no regulation of the water and sanitation sector in Lesotho. In the past, WASA has played a role in requesting tariff adjustments from the GOL, but, for the most part, the sector has been effectively unregulated. Currently, few aspects of service standards and tariffs follow predefined principles and rules. Monitoring of WASA and DWRS is also weak—though this will change for the former if the proposed Performance Agreement is successfully negotiated and implemented. The Performance Agreement will set an interim regulatory framework for urban water and sanitation services. Regulation and performance monitoring of the DRWS, however, will still be lacking.

There is no doubt that some form of regulation will be needed to enable potential PPI contracts in Lesotho. Indeed, the greater the participation expected of the private sector, especially investment, the clearer the definition of water service and resource regulation required from a legal and regulations procedure perspective. For example, in tariff regulation, the regulator should have detailed written procedures for the way in which tariffs are established, adjusted, and modified; tariff dispute mechanisms between operators and the regulator should be clearly defined and made operationally viable without prejudice toward either party; and clear procedures should be set out to address consumer complaints.

In the short to medium term, it is likely that regulatory priorities in the water sector will focus on urban water and wastewater services—i.e., regulating the tariffs charged and standards of services delivered by WASA. As most of these will in fact be part of the proposed Performance Agreement, any water sector regulator should initially focus on ensuring that these terms effectively lead to improving service performance in the long term. Such a regulator should also play a role in monitoring the performance of the parties to the agreement. This type of role would fit well within the multisector regulatory agency concept proposed in Chapter 2.

Regulation of rural service provision would benefit initially from a "light-handed" approach. For example, water supply standards are needed throughout the country, but the level of service should likely be tailored to the affordability levels of the target population. Tailored service levels will result in tariffs that meet the ability and willingness of consumers to pay.

In existing water resource (as distinct from water services) regulatory activities, the DWA reports to the Minister of Natural Resources, while the NES reports to the Minister of Tourism, Culture. and Environment. However, both are responsible to the Cabinet. The OWC will become responsible for both water resource and water service regulation as its capacity improves.

Capacity building of the regulatory body should be a priority, but in developing this capacity the water sector can probably learn from the telecommunications experience and gain from cooperation (another benefit of a multisector regulator). In any event, regulation must evolve as part of general legal and institutional reform of the sector.

Future regulatory challenges for the sector include:

- Creating and implementing an independent regulatory body. This involves enacting the laws that define the location of this agency within the GOL's structure, how it would be funded, its staffing, and its regulatory and enforcement powers, among others. While this agency is being created, the Water Commissioner can fulfill this role.
- Reviewing and further developing tariff and performance standards terms of WASA's Performance Agreement to ensure that these create the conditions for effective long-term improvements.
- Developing light-handed regulations for rural services.

Recommendations for the Water and Sanitation Sector

The anticipated institutional reforms must be implemented as proposed, together with the development of suitable human resource capacity. Further clarifications of roles and functions across all components of the water and sanitation sector will be needed.

The revision of water laws and the further development

of policies should remain a matter of urgent priority for this sector. This will clarify the legislative environment for potential investors.

The shortage of raw water supply should be alleviated by arranging for release of raw water into the Mohokare River from LHWP reserves. This will require coordination of the affected utilities and powerful motivation to the GOL. Cost benefit studies of the options should be made and operational methodologies developed.

Alternatively, the final effluent of the Ratjomose plant could be considered as a suitable feedstock for a water reclamation plant that would provide nonpotable water to adjacent industries. This would permit diversion of potable water to other consumers and would offer an opportunity for significant PPI in the form of a BOT project for both wastewater treatment and water reclamation.

Given a greater assurance of supply of raw water, the potable water production capacity and coverage of distribution networks in Maseru should be increased.

WASA must raise tariffs for both water and wastewater services and improve its operating efficiency to become a financially sustainable company. Given increased levels of production and sales, WASA will be able to improve its capacity utilization and financial performance.

Cost recovery tariffs should be introduced to make rural water supply services self-sustaining.

Access to non-grid sewage services such as VIPs and conservancy tanks is reasonable, but sewage collection and treatment is inadequate in urban areas. PPI solutions for domestic customers should continue to be explored using private contracting and/or leasing.

No regulator exists for water and sanitation. Proposals for a multisector regulator should be revisited. This would provide a consistent regulatory approach to cover all sectors and support economies of scale and human resource utilization.

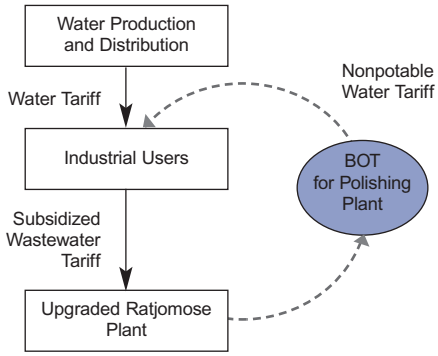
These recommendations and progress to date on each one are described further in **Table 29**.

Opportunities for PPI

In principle, the current low level of investment, resources, infrastructure, and skills in the water sector constitutes a fertile environment for the introduction of PPI. However, the conditions for a full-scale PPI in water and sanitation are not present—i.e., solid and reliable institutional, policy, and regulatory frameworks (e.g., cost recovery tariffs). Good first steps towards a possible wider use of PPI in the medium to long term are being taken—these include the proposed reforms, and particularly the Performance Agreement between WASA and the Ministry of Finance.

In the nearer term, the most likely candidate for some form of PPI is the reclamation of nonpotable water. There are two options for PPI:

- WASA would contract out to a private company the development, financing, construction, and operation of a polishing plant (see diagram below) fed by the upgraded Ratjomose treatment plant. Revenues to the private operator would come from WASA, or directly from wet industries that would buy the nonpotable water from the plant. Wet industries would be willing to buy nonpotable water if it is substantially less expensive than the tariff currently charged by WASA for potable water.



- A second option is to raise water and wastewater tariffs to a level at which it will be less expensive for industries to self-select internal water reuse solutions. Industries would then find it less expensive to treat their own wastewater and reclaim the effluent than pay increased water and wastewater tariffs to WASA (see diagram below). These

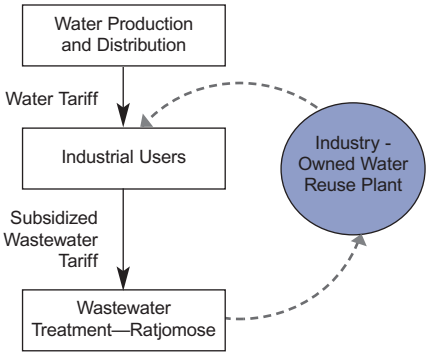


Table 29. Recommendations and Progress to Date

RECOMMENDATION	COMPLETED	INITIATED	NOT STARTED	KEY IMPLEMENTATION CHALLENGES
1. Implement anticipated institutional reforms as proposed	Creation of Commissioner for Water and PPSU	• Local government decentralization expected to be completed with electoral components in 2004 • Review of LHDA staff and functions	• Capacity building for local government water services • Establishment of regulatory body for water • Establishment of Lesotho Environmental Authority	• Skills and rational tariff for local government • Skills for regulator • Resources for Lesotho Environmental Authority
2 Review water laws and further develop policies	• Industrial Wastewater Policy • Environmental Act	• Regulations for Environmental Act • General review of all water laws	Rural coverage policies, technical standards and tariff policies	Skills, political will
3. Alleviate shortage of raw water supply	• Preliminary study of Maqalika Dam spillway and flooding impact • Associated relocation	• Study for alternative dam storage (Metolong) • Lowlands water supply and sanitation study (EU) (including concept of sewage reclamation for nonpotable supply)	• Planning for river releases • Design and funding for Maqalika dam and extraction pumps • Feasibility study for sewage reclamation option	• Coordination of departments • Performance agreement and IDA loan for Maqalika dam • Funds for Metolong dam • Low tariffs for water and wastewater
4. Increase water production capacity and coverage of distribution networks in Maseru	• Upgrade of existing Maseru plant to 45,000 m^3 per day output • Expansion of network to Thetsane industrial area (inner southwest area)	Networks to soputheast area of Maseru with BADEA loan for completion in 2004	• Installation of networks to northeast and outer southwest areas of Maseru • Creation of potable water production water plant (up to 20,000 m^3/day) at Maqalika	• Networks extension depends on raw water availability and funds • Plant depends on Performance Agreement and IDA loan
5. Raise tariffs for both water and wastewater services	U.K. Deprtment of International Development tariff study option 3 selected	Water tariff plan in draft Performance Agreement, based on existing debt load	• Sewage tariff analysis not started • Water tariff not yet approved or raised	• Signature of performance agreement • Study of sewage economics • Further development of detailed tariff increases
6. Continue to explore PPI solutions for non-grid domestic sewage customers	• Tariffs raised • Conservancy emptying tanker pilot	New tankering experiments	Long-term solution	• Tariff jump too fast, consumer resistance • Tankering service not yet economic • SA Co. solution rejected
7. Revisit proposals for a multisector regulator			OWC to consider concepts	Multi- or sector-specific debate

water reuse solutions could be adopted individually by industry or collectively to benefit from economies of scale.

There are two key elements underlying the success of this second option:

- First, defining the level at which tariffs should be set. In order to set this level WASA will need to understand the cost/benefit analysis that industries will make when tariffs are increased—i.e., understand the typical cost structure of industries and the flexibility of industries in adapting their work practices to reduce wastewater flows.
- Second, the ability of WASA to effectively enforce payment of higher wastewater tariffs. One disadvantage of this option is that raising industrial tariffs is in direct contradiction with GOL's policy of subsidizing industrial tariffs to promoting development of wet industries.

The GOL has also considered the development of the Metolong Dam as a candidate for PPI, but the feasibility of such an initiative depends on the ability of WASA to raise tariffs to cover the large costs associated with a privately financed, developed, and operated project of this magnitude.

7 Solid Waste Sector

Institutional and Market Structure

The solid waste sector is very rudimentary in terms of institutional structure, laws, regulations, and service provision at this time. This will present significant obstacles and delays to progress. Numerous interventions and changes have been made over the past decade, and, although these appear to have started with the best of intentions, they have all faded out before they were able to deliver substantive results. As the problems caused by non-performance in the sector become more visible, there are signs of renewed efforts from the Government of Lesotho (GOL) to achieve reforms, and a new legislative and institutional environment is becoming evident. But this will require a sustained effort to catch up with the long period of neglect, and considerable financial investment will have to be made before any impact is felt.

The policy and regulatory aspects of solid waste are under the jurisdiction of various GOL ministries. There is framework legislation, but there are no regulations or specific written policies to govern the sector.

The Ministry of Local Government has line responsibility for service delivery for solid waste collection and disposal through local government structures. Neither the ministry nor any other local government structure except the Maseru City Council (MCC) has operational capacity for solid waste collection and disposal, so most garbage is either burned or dumped at convenient sites. Only the MCC has any formal involvement in solid waste collection and disposal at this time, and this has been run down to a barely functional condition. The MCC's Department of Health and Environment is the executing agency responsible for solid waste services.

Currently, the Ministry of Tourism, Culture and Environment (MTCE) has responsibility for solid waste legislation and policy, and for overseeing activity in the sector. However, in the recent past, other ministries have in turn been in charge, namely the Ministry of Energy and Environment and, before that, the Ministry of Environment, Gender and Youth Affairs.

Within the MTCE, the National Environmental Secretariat (NES) holds the responsibility for generating environmental legislation and solid waste management policy. However, to better integrate the various ministries, departments, local governments, and other stakeholders involved in the sector, the GOL created a steering committee called the Committee on Waste Management (COWMAN). COWMAN functions on an ad hoc basis to deal with solid waste issues as they arise. It also meets to discuss solid waste policy and service-related plans. There appears to be no strict separation of roles and functions between policy development, regulation, and operation within COWMAN. In itself, this will provide obstacles to focusing responsibility and accountability within the sector.

In terms of the Environmental Act of 2001, it is anticipated that the Lesotho Environmental Authority will be established to take over the role of the NES. No progress has been made in this regard at this time, nor would it appear that any budget provision has yet been made to enable progress. No definite program or agency for implementation can be discerned.

In the past, the sector was assisted by DANCED, a Danish development agency, and some proposals to implement project-based action in the sector were made. However, the costs that would have been carried by the GOL were deemed to exceed the maximum allowed. As a result of a lack of progress with the GOL and due to a redirection to other matters in Denmark, DANCED withdrew from the project.

The Lesotho National Development Corporation is an important factor in the sector in its role as developer of serviced industrial land. The corporation organizes refuse removal for the companies established in its industrial development as part of its services to tenants. These developments exist in Maseru—for instance at Thetsane and Ha Tikoe—and elsewhere in Lesotho.

Solid Waste Sector Policies

The Local Administration Act of 1969 (and Urban Government Act of 1983) and Sanitary Services and Refuse Removal Regulations of 1972 provided the main legislative framework for waste management until recently. The Public Health Order also has provisions regarding waste disposal, but these laws primarily define service responsibilities. They do not include any standards for sanitary landfills, collection and disposal practices, treatment, waste separation, or other environmental and health matters.

However, following the African Ministerial Conference on the Environment in 1985 and the Brundtland Commission in 1987, Lesotho was one of the first countries in Africa to formulate the National Environmental Action Plan in 1989. The GOL endorsed the Stockholm Declaration and the 1992 Rio Declaration, and recognized the Southern African Development Community Policy and Strategy for Environment and Sustainable Development by establishing the NES in 1994.

The Environment Act of 2001 contributes to the legal framework for solid waste (as well as other matters, such as water). It indicates items for which standards will be developed, actions that are prohibited or require licensing, and penalties. But there are no regulations to define aspects of the law, nor is there significant institutional capacity to enable enforcement of this law; no selection criteria for refuse sites are specified, nor is there a classification system for hazardous and non-hazardous wastes that can be applied.

The Local Government Act of 1996 sets out the functions of local authorities and lists "Public Health (i.e., food inspection, refuse collection, and disposal)" as a local government responsibility. However, there is no indication how these local government organizations will carry out this task. Perhaps the waste management bill that is in preparation and scheduled for consideration in 2004 will provide more details regarding how local government will carry out its solid waste collection and disposal mandate.

Currently, there are no laws to govern private participation in the sector. Legislation and pertinent regulations may be necessary to define the role and responsibilities of private contractors, and the limitations on their activities. This would set out at least the minimum performance standards, frequency of collection, tariffs and billing methods, sanctions for noncompliance with regulation, the form of a regulatory authority, and some acceptable contract forms for refuse collection, litter picking, transfer station and landfill site management, hazardous waste management, etc.

Sector Performance

Provision of refuse collection services in Maseru is limited, and staffing tends to be from the health rather than an engineering, transport, or municipal operations background. Demand from the rapidly growing industrial sector appears to be strong, although reliable figures cannot be obtained at this stage. These companies are serviced through privately procured contracts with independent operators. The only landfill site in Maseru was not developed using any acceptable engineering standards and must be upgraded or replaced soon.

Lesotho generated about 143,000 tons of waste in 2001 with Maseru contributing about 37,000 tons, or 26% of the total. However, these data are by no means reliable, as there is no management information system in place that keeps track of disposal tonnage and costs.

There are two "formal" refuse landfill sites, Tsosoane (Maseru) and Maputsoe. Neither has been developed with any engineering design or environmental protection. Illegal dumping and scavenging from the sites is common. There are no tipping fees collected at these sites.

In Maseru, the MCC intermittently serves approximately 6 out of a total of 16 wards, where less than a third of the population are accommodated. Official refuse collection equipment (available in Maseru only) is in poor condition and is frequently unserviceable. The MCC owns one com-

pactor and up to six Tippaks. Tractor-trailer equipment is also in evidence. No statistics on equipment utilization and availability exist, and a program for refurbishment was planned for 2003 but remains unfunded. Burning refuse or dumping on middens are the most common method of disposal in Maseru and elsewhere in Lesotho.

The tariff charged for collection and disposal varies from 3 to 10 Maloti per month and is considered "marginal and symbolic," to quote the MTCE Project Proposal for Solid Waste Management. But cost recovery is in any event very low, being less than 2% in 1996 and only budgeted at 14% in 1997. No more recent data are available from the MCC. Industry is served by private sector collection and disposal on an as-needed basis, often as arranged by the Lesotho National Development Corporation.

Demand for adequate solid waste disposal, especially in Maseru and the urbanizing areas of the lowlands, will continue to increase. For instance, a denim factory in the Thetsane area is expected to produce three tons of dry waste per day, as well as a sludge output from its proposed sewage pretreatment plant, but there is no adequate site yet available for its disposal. This is a priority issue that the GOL, COWMAN, and MCC need to address immediately.

The concept and objectives of the DANCED Project described above, which has been subsequently revived by the MTCE through COWMAN, envisages the development of a landfill site in Maseru. This will cost approximately 43 million Maloti (US$5.38 million) to develop, including training, the collection system, development of the landfill site itself, and rehabilitation of the existing site at Tsosoane. This estimate excludes recurrent operating costs of up to 600,000 Maloti (US$75,000) per year.

Private participation in infrastructure (PPI) could be utilized to make progress in both the refuse collection in Maseru, and the development and operation of a landfill site. However, the GOL would have to consider retaining some existing risk factors to make these projects attractive to private sector investors. In particular, the current low level of tariffs and service coverage, unclear regulatory standards, and no resources for enforcement of regulations would all contribute to uncertainty and risk for an investor.

For instance, the investor is almost certain to face prospective market resistance through nonpayment and illegal dumping elsewhere, as potential customers are used to low tariffs and to dumping anywhere without sanction.

Regional operators may have the skills and experience to invest in Lesotho, but would have to be reassured concerning lingering resistance to investment from South Africa, the most likely source in this sector. So the GOL would be wise to attempt to enable partnerships with locally based investors where possible, perhaps from the transport sector.

Recommendations

- The legal and regulatory framework for the sector must be completed.
- Regulations to give effect to the Environment Act of 2001 should include practices and standards that are already applied in the region to ensure local relevance and applicability. Some degree of uniformity with South African legislation will make PPI from the region more attractive and more likely.
- A national solid waste management policy should be developed and implemented.
- The institutional structure of the sector and respective responsibilities should be clarified.
- Capacity to oversee the sector, enforce the act and regulations, and execute the policy must be created.
- The Lesotho Environmental Authority should be established as envisaged in the act.
- The concept of "polluter pays," which is frequently mentioned in project documents, should be enshrined in official policy, together with an approach to setting, approving, and promulgating tariffs.
- A realistic tariff structure and prices aiming for sustainability must be developed to enable ongoing delivery of services both for landfill and for collection.
- The introduction of tariffs should be supported by a transitional program to enable service users to adjust to new costs over a short period.
- Landfill tipping charges should be introduced, but not without policing and enforcement measures to prevent illegal dumping in more unsuitable and possibly dangerous areas.
- The MCC should develop its customer database to enable the collection of revenue from all residents who are served. This will bring much-needed income to develop the collection system and will start to establish the concept of realistic payment for this service (i.e., tariffs based on cost recovery).

- MCC should make arrangements to provide capacity to collect refuse from targeted customers regularly and sustainably. This might be by purchasing suitable equipment and implementing its own collection system.
- Alternatively, in the absence of sufficient GOL funding and skills, the MCC should consider other options such as outsourcing and PPI.
- With potential PPI projects, GOL expectations should not start too high, and it should expect to provide much of the funding initially and transfer risk appropriately.
- A new landfill site, utilizing acceptable engineering standards, should be developed as soon as possible for Maseru, and the existing site should be closed.

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ISBN 0-8213-6205-4