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In the nineteenth century, a visionary leader, King Moshoeshoe I, whose ideals are still cherished by many in southern Africa, ruled Lesotho. Among his many attributes was strong advocacy for conservation. Reflecting his ideals, the Constitution proclaims in Section 36 that—

Lesotho shall adopt policies designed to protect and enhance the natural and cultural environment of Lesotho for the benefit of both present and future generations and shall endeavour to assure to all its citizens a sound and safe environment adequate for their health and well-being.

(GKL 1993)

This commitment has been reaffirmed more recently by the Minister of Finance, Development and Planning (and Deputy Prime Minister) in his public address in commemoration of the International Day for the Eradication of Poverty in 1999:

Given the mammoth task of redressing the poverty situation in Lesotho, we all agreed to focus on five priority areas between 1997 and 2003. The five areas are as follows: good governance, improvement in social services, improvement of employment and income opportunities, re-formulation of the Lesotho Highlands Revenue Fund, and environmental conservation.

A National Vision for Lesotho is currently being developed through a consultative process and should further confirm the increasing pre-eminence of sustainable development. The consultations are based on a commitment that,—

by 2020, Lesotho shall be a stable democracy, a united, prosperous nation at peace with itself and its neighbours. It shall have a healthy and well-developed human resource base. Its economy will be strong, its environment well managed, and its technology well established.

(GKL 2001)

The mountainous Kingdom of Lesotho, which is surrounded by South Africa, has a land surface area of 30,350 km². It has four physiographic regions, based on elevation and agro-climate, namely lowlands, foothills, mountains, and the Senqu River valley.

The lowlands form a strip of land 20- to 50-km wide along the western border with South Africa, and range from 1,500 to 1,800 m above sea level (masl). Although they comprise only 33% of the national territory, the lowlands are home to 80% of the population. The foothills, which range between 1,800 to 2,200 masl, form a narrow strip running north-west, adjacent to the lower mountain range. The foothills occupy 8% of the country and, like the lowlands, have a high population density. The mountains range from 2,200 to 3,482 masl. Although there is increasing settlement, the mountains are mostly used for summer grazing. They form the unique African alpine and subalpine habitats of the Drakensberg range. Over the eastern three-quarters of Lesotho, in an area known as the Maloti, the dissected basalt plateaus appear as mountain ranges and high tablelands. Lesotho is the source of the Senqu River system, one of the largest in southern Africa. The system’s three main tributaries rising in Lesotho are the Senqu (Orange), Mohokare (Caledon) and Makhaleng rivers, which together have an average run-off of 180 m3/s (Tams Consultants 1996). Table 1 shows the various physiographic regions in the country, the percentage of the land surface area each region covers, and its elevation.

Lesotho generally has a temperate climate. Some 85% of the annual precipitation of approximately 780 mm falls between September and April. Average precipitation is spatially unevenly distributed, ranging from 450 mm in the south and western lowlands to over 1,000 mm in the northern lowlands and eastern highlands. The rainfall pattern exhibits two seasons: the dry winter season, between May and August, and the wet summer season, between September and April. Temperature fluctuations are high and range from −5 to 36 °C.

Lesotho generally consists of a grassland biome with six grassland types (Low & Rebelo 1996). Table 2 (page 66) lists the different types of the vegetation and their characteristics. The diversity of vegetation is an indicator of ecosystem diversity, since vegetation influences the occurrence and distribution of other species.

<table>
<thead>
<tr>
<th>Ecological zones</th>
<th>Area (km²)</th>
<th>% of land area</th>
<th>Altitude (masl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowlands</td>
<td>5,760</td>
<td>19</td>
<td>1,500–1,800</td>
</tr>
<tr>
<td>Foothills</td>
<td>2,430</td>
<td>8</td>
<td>1,800–2,200</td>
</tr>
<tr>
<td>Mountains</td>
<td>19,730</td>
<td>65</td>
<td>2,200–3,400</td>
</tr>
<tr>
<td>Senqu River valley</td>
<td>2,430</td>
<td>8</td>
<td>1,400–1,800</td>
</tr>
</tbody>
</table>

Table 1: Distribution of physiographic regions

Figure 1: Average temperatures and rainfall at Maseru


*Also known as the Orange River system.*
Current and projected land use

The major land uses in Lesotho are the rangelands for livestock grazing, arable land for crop production, forested land (indigenous and afforested), and settlements. Small areas of land are used for mining or have been declared protected areas. Most of the land is used for livestock production, with 65% of the land in the mountain zone dedicated to this activity. Table 3 shows where the livestock are distributed with respect to the four physiographic regions. Grazing on rangelands is based on a communal system with free access for everyone. Under the land tenure system, there is no provision for private properties for grazing. Although there is still some level of control of land by the chiefs, this has declined in recent years because of political and administrative changes which have weakened their authority without compensatory placement of appropriate and effective local authorities, resulting in serious land degradation.

Arable agriculture is mostly practised in the lowlands under communal tenure although the Land Act of 1979 provides for individual agricultural leases.2

There is a declining trend in crop yields, despite past efforts to stem this through various programmes, resulting in a food deficit. The food deficit is also attributable to the 2% annual growth in population and poor crop husbandry — including low use of fertilisers and manure, and the use of inappropriate cultivars. Past attempts to increase maize and wheat production through the Food Self-Sufficiency Programme have not succeeded because of financial and other constraints which did not enable participation by a large number of farmers. Current initiatives to commercialise food production include Temo Holdings, a company formed to facilitate marketing of agricultural products to local, regional and international markets, and the Initiative for Development and Equity in African Agriculture (IDEAA).

Less than 1% of the country, namely an area of 34,685 ha, is under forest cover. Despite this limited coverage, the trees provide important socio-economic and ecological functions. However, their over-exploitation for fuel has placed them under extreme pressure and there have been no successful efforts for controlling their depletion.3

The Sehlabathebe Wildlife Sanctuary and National Park and the Masitise Nature Reserve are the only two legally established conservation areas. Together, they cover 7,680 ha which, at less than 1% of the country, is way under the 10% recommended as the minimum by the IUCN (World

Table 2: Vegetation types

<table>
<thead>
<tr>
<th>Vegetation type</th>
<th>Average annual rainfall (mm)</th>
<th>Altitude (m)</th>
<th>Temperature range (°C)</th>
<th>Area (km²)</th>
<th>Conserved (%)</th>
<th>% of land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Biome</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afro-montane Forest</td>
<td>700</td>
<td>1,700</td>
<td>n/a</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Grassland Biome</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remnants of Highveld Grassland types</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moist Cold Highveld Grassland</td>
<td>700–800</td>
<td>2,000</td>
<td>n/a</td>
<td>6,689</td>
<td>0.00</td>
<td>22.63</td>
</tr>
<tr>
<td>Moist Cool Highveld Grassland</td>
<td>1,600</td>
<td></td>
<td>–11 to 38</td>
<td>198</td>
<td>0.00</td>
<td>0.67</td>
</tr>
<tr>
<td>Wet Cold Highveld Grassland</td>
<td>900</td>
<td>1,750</td>
<td>–5 to 36</td>
<td>58</td>
<td>3.28</td>
<td>0.20</td>
</tr>
<tr>
<td>Mountain Grassland types</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afro-montane Grassland</td>
<td>–8 to 30</td>
<td></td>
<td></td>
<td>15,489</td>
<td>0.00</td>
<td>52.40</td>
</tr>
<tr>
<td>Alti-montane Grassland</td>
<td>1,000</td>
<td>2,500–3,480</td>
<td>–8 to 32</td>
<td>7,118</td>
<td>1.08</td>
<td>24.08</td>
</tr>
<tr>
<td>Moist Upland Grassland</td>
<td>650–1,000</td>
<td>1,400</td>
<td>–3 to 40</td>
<td>3</td>
<td>55.70</td>
<td>0.01</td>
</tr>
<tr>
<td>Total area</td>
<td></td>
<td></td>
<td></td>
<td>29,556</td>
<td>0.27¹</td>
<td>100.00</td>
</tr>
</tbody>
</table>

¹ The discrepancy (794 km²) between this figure and the land surface area of 30,350 km², is probably due to settlements.

² This figure increases slightly to 0.35% with the inclusion of new Lesotho Highlands Development Authority nature reserves and to 0.70% with Range Management Areas (registered Grazing Associations); land under traditional village management and protection is not on record (National Environment Secretariat 2000).

Table 3: Livestock distribution by physiographic region

<table>
<thead>
<tr>
<th>Livestock type</th>
<th>Number</th>
<th>Lowlands %</th>
<th>Foothillsa %</th>
<th>Mountains %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>580,000</td>
<td>33</td>
<td>24</td>
<td>43</td>
</tr>
<tr>
<td>Sheep</td>
<td>1,132,000</td>
<td>18</td>
<td>12</td>
<td>71</td>
</tr>
<tr>
<td>Goats</td>
<td>749,000</td>
<td>23</td>
<td>20</td>
<td>56</td>
</tr>
<tr>
<td>Horses</td>
<td>98,000</td>
<td>18</td>
<td>20</td>
<td>62</td>
</tr>
<tr>
<td>Donkeys</td>
<td>153,000</td>
<td>37</td>
<td>22</td>
<td>41</td>
</tr>
</tbody>
</table>

Source: Agrer (2000).

a Foothills and Senqu Valley combined.

Traditionally, chiefs and headmen were responsible for the allocation of land for cultivation, but this function has been transferred to Government-appointed Village Development Councils (VDCs) who have, in most cases, not worked harmoniously with the traditional leaders. The introduction of the VDCs has had negative impacts on the management of land resources because the councils are not trained on matters of governance and resource management, leading to ill-considered decisions such as allocating marginal lands and wetlands for farming.

Currently, there are three programmes aimed at planting trees. These are the donor-supported social programme, the Lesotho-Durham Link, and the Care Lesotho programme.
Conservation Union). Other areas have been designated nature conservation sites, but by mid-2002 had not yet been gazetted. Three more areas, totalling 4,012 ha, are currently being proposed for biodiversity conservation.4

Wetlands are important to the environment because they perform important hydrological functions.5 The wetlands of Lesotho are, however, losing these functions because of overgrazing by livestock, cultivation and diamond prospecting, as well as soil excavation and increasing accessibility due to the construction of new roads.4

Key environmental limitations

The key environmental limitations are terrain, drought and poor soils. Lesotho is a mountainous country with rough terrain characterised by steep slopes and deep canyons. These physical features restrict access, limit options for land use and make the country prone to erosion.

Frequent drought poses a serious threat to crop and livestock production. The most severe in the last decade was during the 1991–92 season and it greatly depressed income from the agriculture sector.

Generally, Lesotho has mineral-poor soils with an organic-matter content ranging from less than 1% to 10%, and this impacts negatively on both crop and rangeland farming. Soils of the higher mountains, although shallow in depth, are relatively more fertile than those in the lowlands because they have developed in temperate climatic conditions and tall grass vegetation and, therefore, have a higher organic content (Schmitz & Royani 1987). Soils formed predominantly from basalt – found mostly in the mountain region – have a significant quantity of organic matter and, although moderately productive, require careful management. The soils of the lowlands, which are used extensively for crop production, have less than 2% organic matter.

Key environmental impacts caused by development

Important environmental impacts have arisen from road construction, mining, human settlements, livestock and crop production, and industry.

Road construction

The current road network, which is mostly in the lowlands, covers approximately 5,000 km. Road construction can impact on the quality of the environment, especially when it is not properly planned – as typically happens in Lesotho.

While the bulk of the national road network is less than 30 years old, the combined environmental impacts of its development are alarming. Road construction has paid little attention to the protection of the environment or its improvement. The construction methods have tended to consider only engineering needs, with little regard to any other impacts. The environmental impacts of road construction and maintenance include soil loss, damage to cropland and unique ecosystems, the destruction and pollution of water sources – in particular springs6 and wetlands, loss of landscape integrity through indiscriminate dumping of construction materials, and rapid siltation of dams and ponds.

Socio-economic impacts associated with the development of roads include the development of settlements on arable lands and rangelands, and social problems that arise from the presence of a large number of male workers.

Almost all Lesotho roads were constructed in the absence of an environmental impact assessment (EIA) and, therefore, do not have environmental management plans.

Mining and quarrying

Major mining and quarrying activities in Lesotho include the extraction of diamonds, dolerite, sandstone, clay and river sand. There are currently two medium-scale kimberlite mining operations, namely the Kao quarry sites and the Kolo kimberlite deposits, as well as the smaller Lqhobong kimberlite deposits. Diamond mining is due to resume at Letseng-la-terai, having stopped due to unprofitability in 1981 after five years of operation. In addition to organised medium-scale operations, individual diamond-digging activities occur in several places.8 Over 600 permits have been granted for these small-scale operations.

Dolerite mining is mostly done during road construction although a quarry has been in operation at Morija since 1988. There have been complaints about the dust from the operation impacting negatively on human health and general well-being. Since there was no legal requirement for the company to produce an environmental management plan when the licence to operate was issued, it is not likely that the mining site will be rehabilitated when operations cease.
Quarrying for gravel is often undertaken by the Ministry of Public Works and Transport during road construction, resulting in environmental impacts in the form of pits. The problem of quarry pits is compounded by the fact that not only are they never rehabilitated, access to them is also not controlled—not even after the road project has been completed.

Until recently, only one company cut sandstone. However, since the change in government policy to use sandstone for building, there has been a marked increase in small-scale producers. The environmental impacts of these activities have not been assessed, but dust and change in aesthetic quality of the land are apparent problems.

Clay for the production of bricks is mined primarily at two sites. The ecological impacts of clay mining include increased erosion at the pit site, which muddies the run-off.

The extraction of river sand for building is most prevalent in the lowlands, where the demand is greatest. The extraction of sand, even for commercial purposes, is not regulated. River-sand extraction accelerates soil erosion due to the disturbance by heavy vehicles and equipment.

Crop and livestock production

Soil erosion is the key environmental impact on crop productivity. It is estimated that up to 2,000 t/km² of soil and 0.2–1.0% of arable land are lost to erosion each year (Chakela 1999). Other environmental impacts caused by arable farming are pollution due to the use of chemicals, loss of biodiversity, and loss of soil fertility as a result of mono-cropping maize and sorghum, which has been practised over the last century.

The lack of effective management has negatively affected the quality and quantity of livestock productivity. Between 1987/88 and 1991/92, cattle production increased from 24% to 37%, whereas sheep production decreased from a high of 43% in 1989/90 to only 29% in 1991/92. The productivity of goats has remained stable.

Current stocking rates suggest that the carrying capacity of the land has been exceeded. Data for 1972/73 show that rangelands were overstocked by 41%, which increased to 75% by 1986/87 (Motsamai 1990).

Almost 25% of rangelands are in poor condition, whereas the remainder are considered to be in fair condition only.

Another indicator of rangeland deterioration is the encroachment of the invasive Karoo shrub, *Chrysocoma* spp., covering 359,680 ha—approximately 10% of the rangeland in the mountain areas, and 16% of the entire rangeland area in the country.

The quality of the life of the people who depend on livestock has also deteriorated, with the number of people living below the poverty line increasing from 49% in 1990 to 71% in 1995 and down to 65% in 1999 (Sechaba Consultants 2000). According to the World Bank (UN 2000), the country’s real gross domestic product (GDP) per capita was US$1,860 in 1997, placing Lesotho among the world’s 50 lowest-income countries (UN 2000).

Settlement

While about 86% of the population resides in the rural areas, the remaining 14% lives in urban areas, predominantly Maseru (Bureau of Statistics 1996). There is, however, a growing trend in urbanisation, at an annual rate of 4.3%. Although most of the investment has been in Maseru, there is pressure on both infrastructure and services. The major negative environmental factors associated with urbanisation include encroachment onto agricultural land, difficulty in providing social services and infrastructure, and poor physical planning as the system has become overwhelmed by the large number of people, resulting in poor solid-waste management and pollution from industry.

Pollution

Industrial pollution, largely from activities in Maseru and Maputsoe, is an emerging but serious problem. Other sources of pollution are old vehicles and scrap, litter and effluent discharge from textile manufacturing industries. Currently, there is little water pollution in the mountains because human settlement is limited. There is a possibility of chemical pollution from acaricides at cattle-dipping sites, as well as from agricultural fertilisers and pesticides at most irrigation schemes. Most of the discharges from agricultural and industrial activity flow into the Mohokare (Caledon) River, which forms the western border with South Africa.

Major transboundary environmental impacts

Two major projects, namely the Lesotho Highlands Water Project and the Drakensberg–Maloti Transfrontier Conservation and Development Project, will have major transboundary impacts on Lesotho.

The Lesotho Highlands Water Project Agreement with South Africa was signed in 1986, and provides for the construction of the Katse, ‘Muela, and Mohale Dams to provide water to South Africa and hydroelectric power to Lesotho during two stages of the first phase (Phases 1A and 1B). The decision to undertake the project was founded on sound environmental principles, but Phase 1A was completed without a properly conducted EIA. However, through lessons learned from Phase 1A and pressure from interest groups, engineering design and environmental and social impact assessments were undertaken simultaneously during Phase 1B. The project has...
provided lessons on how to carry out development whilst recognising the needs of the environment and society.

The objectives of the planned Drakensberg–Maloti Transfrontier Conservation and Development Project are to conserve the exceptional biodiversity of the Maloti area along the eastern border with South Africa. The project also seeks to preserve the cultural heritage of the area whilst harnessing its economic potential. It will, therefore, seek to improve the lives of the local people through the development of ecotourism opportunities.

Socio-economic profile

Main economic activities

Lesotho has experienced a period of good economic growth over the last two decades. Annual GDP growth averaged 4.2% from 1980 to 1989, and rose to 5.2% from 1990 to 1997, largely due to growth in the manufacturing sector and the Lesotho Highlands Water Project. GDP growth declined by 5% in 1998 because of civil unrest, drought, and reduced capital inflows due to the completion of Phase 1A of the Lesotho Highlands Water Project. It was projected to increase to 43% in 2002.

The economy depends directly on the use of natural resources, with the main economic activities being agriculture, construction, manufacturing and government services. Total agricultural contribution to GDP has increased slightly from previous years, reflecting the continuing importance of the sector. The contribution of agriculture to GDP increased from US$33.249 million in 1992 to US$83.24 million in 1999. In terms of percentage increase, the contribution of agriculture to GDP remained at 15% over the same period. Government services and construction contribute most to GDP (17% each), while manufacturing contributes 14%.

Projected growth areas for the future

Future growth is likely to be in the manufacturing industry, especially textiles. The secondary sector contributed 41.3% in 1999, compared with only 17.4% by the primary sector, of which agriculture increased only slightly between 1992 and 1999. The United States Africa Growth and Opportunity Act (AGOA), which allows textiles to be imported from Africa, is expected to lead to an increase in production and increased employment in the sector. Although the Government plans to increase the manufacturing industry’s contribution, the failure rate of industries is high, largely because the Basotho have not yet mastered the skills required for running a business.

Agriculture, mining and quarrying may continue to lag behind the service and the manufacturing industries in terms of future growth. Current trends indicate that agriculture has been stagnant, but this could change with the Government’s increasing emphasis on commercial production for the export market. The international airport has already undergone structural remodelling in order to handle the expected increase in cargo.

The construction of roads, which is funded through the Lesotho Fund for Community Development, will also continue to be a significant activity. Substantial funds for this (US$55 million annually) are available from royalties from the sale of water to South Africa.

Key socio-economic limitations

Poverty, HIV/AIDS, and a lack of environmental awareness could undermine the achievement of sustainable development. Combating poverty ranks among the Government’s key strategies because poverty is now recognised to have long-term implications for sustainable development. Poverty is largely attributable to unemployment, which was estimated at 23.5% in 1996 (Bureau of Statistics 1996). However, this estimate varies significantly from a 1998 study which suggests a figure of 40.5% (UN 2000). While unemployment affects a wide cross-section of the population, it is higher for women. The increase

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1 US$1 = M10.5 (Lesotho Maloti), as at May 2002.
2 Press conference with the Minister of Industry, Trade and Marketing on 4 May 2001, on the occasion of the AGOA’s launch in Lesotho.
3 Crops planted are paprika, garlic and asparagus.
4 Human immunodeficiency virus / acquired immune deficiency syndrome.
in unemployment has largely resulted from the poor performance of the South African economy, particularly the mining sector, which previously employed about half of the Lesotho labour force.

The prevalence rates for HIV/AIDS are estimated at 26.5% for the total population and at 35.3% for adults (UN 2000). The higher infection rate in males (40%) than in females (30%) might be attributable to the high numbers of male migrant workers.

The prevalence of HIV/AIDS has increased child mortality as a result of mother-to-child transmission (Moteete 2001). The number of orphans is also increasing, with estimates ranging from 85,000 orphans to 117,602 in 1999 (Ministry of Health and Social Welfare 2001). Many of these children are reported to be living without proper care, protection or education. The Government has budgeted M20 million (US$2 million) for HIV/AIDS-related programmes.

**Environmental awareness**

In 1997 it was estimated that 10% of the population had become aware of environmental issues (Institute of Development Management 1997). Given protracted efforts by non-governmental organisations (NGOs) and Government since then, it is likely that the proportion has increased. Nonetheless, more work still needs to be done in this area.

### Table 4: Environmental legislation

<table>
<thead>
<tr>
<th>Law*</th>
<th>Key elements</th>
<th>Authority responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colony of the Cape of Good Hope Bees (Protection) Act, No. 9 of 1869</td>
<td>Its application is doubtful</td>
<td>n/a</td>
</tr>
<tr>
<td>Laws of Lerotli of 1903b</td>
<td>Soil conservation</td>
<td>Ministry of Forestry and Land Reclamation</td>
</tr>
<tr>
<td>Sale of Game Proclamation, No. 5 of 1939</td>
<td>Prohibits sale of game, biltong, hides, skins and flesh of game</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>Wild Birds Proclamation, No. 43 of 1940</td>
<td>Prohibits sale or export of the plumage, skins or flesh of game</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>Uranium and Thorium Control Proclamation, No. 6 of 1946</td>
<td>Control regarding the search for disposing of and exporting uranium, thorium and allied natural substances</td>
<td>Ministry of Natural Resources</td>
</tr>
<tr>
<td>Game Preservation Proclamation, No. 33 of 1951</td>
<td>Licence required for hunting royal game: bald-headed ibis, sacred ibis, white stork, vulture, secretary bird, vaal rhebuck, roo rhebuck, klipspringer, reedbuck</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>(a) Protection of Fresh Water Fish Proclamation, No. 45 of 1951</td>
<td>Permit required; explosives, chemicals, poisonous or injurious substances, wire, and cane are prohibited in freshwater habitats</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>(b) Fresh Water Fish Regulations 1951 (HCN 112/1951)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historical Monuments, Relics, Fauna and Flora Act, No. 41 of 1967</td>
<td>Prohibits destruction of or damage to any fauna or flora, as well as removal from its habitat or from Lesotho without permission</td>
<td>Ministry of Tourism, Environment and Culture</td>
</tr>
<tr>
<td>Mining Rights Act, No. 43 of 1967</td>
<td>Only as regards water associated with mining operations</td>
<td>Ministry of Natural Resources</td>
</tr>
<tr>
<td>Local Administration Act, No. 13 of 1969</td>
<td>Control over the burning of rubbish and grass, and the removal and disposal of refuse and effluent</td>
<td>Ministry of Natural Resources</td>
</tr>
<tr>
<td>Weeds Eradication Act, No. 18 of 1969</td>
<td>Destruction of noxious weeds or plants detrimental to agricultural uses</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>Land Husbandry Act, No. 22 of 1969</td>
<td>Management of land, soil conservation, management of water resources and proper irrigation, prevention of poor agricultural practices</td>
<td>Ministry of Forestry and Land Reclamation</td>
</tr>
<tr>
<td>Roads Act, No. 24 of 1969</td>
<td>Protection of roads from abusive dragging of sledges, ploughs, timber, or heavy materials</td>
<td>Ministry of Public Works</td>
</tr>
<tr>
<td>Industrial Licensing Act, No. 27 of 1969</td>
<td>Lacks any environmental consideration</td>
<td>Ministry of Industry, Cooperatives Trade and Marketing</td>
</tr>
<tr>
<td>Sanitary Services and Refuse Removal Regulations LN 36 of 1972</td>
<td>Maintenance of cleanliness in business areas</td>
<td>Ministry of Tourism, Environment and Culture</td>
</tr>
<tr>
<td>Public Health Order, No. 12 of 1970</td>
<td>Prevention of anything injurious to public health</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Precious Stones Order, No. 24 of 1970</td>
<td>Complements the Mining Rights Act, 1967</td>
<td>Ministry of Natural Resources</td>
</tr>
</tbody>
</table>
Lesotho has several pieces of sectoral environmental legislation. One of the few which make EIAs mandatory is the Mines and Minerals Act of 1996 – an EIA is a prerequisite for obtaining mining rights.

A review of legislation undertaken in 1991 is indicated in Table 4. This analysis and review of laws revealed overlaps, inconsistencies and gaps, and recommended the drafting of a comprehensive environmental legislation framework. This was prepared following the first Earth Summit in Brazil in 1992, with lessons drawn from other African countries.

The National Environment Secretariat prepared a new environmental policy that was approved by Cabinet in 1996, following wide stakeholder consultations. Subsequently, the Environment Act, No. 15 of 2001, was passed, with Section 122 (2)(g) providing for the Minister of Environment, Gender and Youth Affairs to make regulations for EIAs. These regulations were due to be gazetted by early 2003. Although the Act’s commencement date has not yet been gazetted, some of its provisions, such as guidelines for undertaking EIAs, are already in use.

Both the policy and the Act will support sustainable development by subjecting projects and activities that impact on air, water, land, animals, plants and minerals to EIA. Although

<table>
<thead>
<tr>
<th>Table 4: Environmental legislation (continued)</th>
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<tr>
<td><strong>Law</strong></td>
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<tr>
<td>(a) Dangerous Medicines Act, No. 21 of 1973</td>
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<tr>
<td>(b) Dangerous Medicines Regulations LN 32 of 1975</td>
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<tr>
<td>National Parks Act, No. 11 of 1975</td>
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<tr>
<td>Aviation Act, No. 32 of 1975</td>
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<td>Urban Sewerage Regulations LN 1 of 1977</td>
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<td>(a) Water Resources Act, No. 2 of 1978</td>
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<td>(b) Water Resources Regulations of 1980</td>
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<td>Forest Act, No. 11 of 1978</td>
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<tr>
<td>(a) Land Act, No. 17 of 1979</td>
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<tr>
<td>(b) Land Regulations LN 15 of 1980</td>
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<td>Town and Country Planning Act, No. 11 of 1980</td>
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<tr>
<td>Forest Regulation LN 36 of 1980</td>
</tr>
<tr>
<td>Range Management and Grazing Control Regulations LN 39 of 1980</td>
</tr>
<tr>
<td>(a) Road Traffic Act, No. 8 of 1981</td>
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<td>(b) Road Traffic Regulations LN 84 of 1981</td>
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<tr>
<td>Mine Safety Act, No. 4 of 1981</td>
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<td>Urban Government Act, No. 3 of 1983</td>
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<tr>
<td>Lesotho Highlands Development Order, No. 23 of 1986</td>
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<td>Lesotho Housing and Land Development Corporation Order, No. 12 of 1988</td>
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<td>Mines and Minerals Act, 1996</td>
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<td>Environment Act, No. 15 of 2001</td>
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*a* LN = Legal Notice.
*b* Named after the ruler of the time.
current legislation is limited to EIA, it would be useful to explore the application of other complementary techniques such as environmental health assessment, ecological risk assessment, cumulative effects assessment, and strategic environmental assessment to policies, legislation, development plans and programmes (Tjela 2002).

The Act does not stipulate whether the Lesotho Environment Authority (LEA) should impose charges for reviewing EIAs, but there is provision for the establishment of an Environment Fund for meeting the LEA’s operational costs. The proponent meets the costs of the EIA as part of the development costs, but they are often reluctant to do so, even though such costs have never exceeded 1% of the project costs (Mokuku 2002).

Existing environmental institutions

Apart from identifying key environmental problems and initiating the review of legislation, the 1989 National Environmental Action Plan (NEAP) recommended an institutional framework to effectively coordinate the management of environmental issues. In 1994, the National Environment Secretariat was established under the Prime Minister’s Office as the main environment coordinating institution. The Secretariat has been instrumental in preparing the National Action Plan (NAP) to implement Agenda 21. The NAP included aspects from the NEAP, and reflected the priorities agreed on at the Summit.

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13 These were overstocking and range management, soil erosion and loss of fertility, hazardous agricultural chemicals, loss of natural and historical heritage, unplanned urban expansion and settlement, and pollution.
14 With the assistance of the United Nations Development Programme (UNDP).
15 Agenda 21 is an action programme for sustainable development based on the integration of economic, environmental and social issues. It was agreed upon in 1992 at the first Earth Summit in Rio de Janeiro, Brazil.
The National Environment Secretariat (NES), which was moved to a newly created Ministry of Environment, Gender and Youth Affairs in 1988 and then to the Ministry of Tourism, Environment and Culture in 2003, is responsible for administering EIA. Within the Government, the Ministry of Development Planning is responsible for coordinating development policy programmes and projects. A Project Appraisal Committee, under the Ministry of Development Planning, reviews project proposals before their inclusion in the public sector investment programme – the Committee’s guidelines require EIAs for major projects. The Government plans to institutionalise the Project Appraisal Committee so that its decisions will be enforceable by law. This would strengthen the consideration of environmental issues during project review. To further support the National Environment Secretariat, Environmental Units have been designated in sectoral ministries to review projects.

Figure 5 shows the organisational structure within which the EIA process is currently carried out. Input from other project appraisal bodies could contribute favourably to environmental management if there was better intersectoral collaboration and consideration of environmental issues (see Table 5). For example, a survey of the environmental conditions of hotels and lodges throughout Lesotho suggested that some of them should not have been issued with the annually renewable licences to operate; although copies of the report were submitted to the relevant authorities four years ago, nothing has been done about it to date.

Proposed environmental institutions

The Environment Act of 2001 proposes a new institutional structure which had yet to be established by early 2003. Under the new arrangements, a National Environment Council, comprising several ministers, a wide cross-section of stakeholder representation, and chaired by the Prime Minister, will also be established. The Council will have the responsibility for developing environmental policy and ensuring coordination among stakeholders engaged in environmental protection.16

The LEA will be the executive arm of the Council and the principal agency responsible for managing the environment. The LEA will replace the National Environment Secretariat. While the LEA will be the sole legislated reviewer of EIAs, it may call upon a Technical Advisory Committee to review and advise it on any environmental plans and EIAs for major projects and activities, as listed in the schedule of the Environment Act of 2001. There are no legal provisions for decentralisation or outsourcing the administration of the EIA process.

Provision has also been made for a tribunal that will hear appeals against decisions of the LEA. It will have three members — a legal practitioner who shall chair, an individual with a degree in environmental law and an individual with experience in environmental issues.

Table 5: Permits and licences required by law in Lesotho

<table>
<thead>
<tr>
<th>Permit or licence</th>
<th>Authority</th>
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<td>Building</td>
<td>Municipality</td>
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<tr>
<td>Mining or quarrying</td>
<td>Ministry of Natural Resources</td>
</tr>
<tr>
<td>Hotel, restaurant or liquor shop</td>
<td>Ministry of Tourism, Environment and Culture</td>
</tr>
<tr>
<td>General trading</td>
<td>Ministry of Industry, Trade, Cooperatives and Marketing</td>
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<tr>
<td>Environmental impact assessment</td>
<td>Lesotho Environment Authority</td>
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<td>Waste disposal</td>
<td>Lesotho Environment Authority</td>
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<tr>
<td>Effluent discharge</td>
<td>Lesotho Environment Authority</td>
</tr>
<tr>
<td>Pollution</td>
<td>Lesotho Environment Authority</td>
</tr>
</tbody>
</table>

Institutional capacity

Government environmental institutions do not have the capacity to deal effectively with EIAs because of staffing problems. The National Environment Secretariat currently has three officers in the EIA Division, who have other responsibilities such as the management of capacity-building. The staffing situation is not likely to change in the short term because, although legislation provides for the establishment of the LEA, a budgetary provision has not yet been made to fund a larger number of positions. There is, nevertheless, a low staff turnover in the EIA Division, with the loss of only one staff member since its formation in 1994.

Similarly, the Environmental Units in the sectoral ministries currently do not have the capacity to help the Secretariat review EIAs, ensure that their ministries comply with the requirements of the Environment Act, and prepare annual ‘state of the environment’ reports for their sectors. This is because they, much more than the Secretariat’s EIA staff, have many other responsibilities, and environmental issues are not treated as part of their core functions.

Land suitable for farming is becoming increasingly scarce in Lesotho.
National NGOs are few, and are affected even more by a lack of capacity. Despite that, with the assistance of international partners, they were very active in raising issues for consideration during the Lesotho Highlands Water Project (LHWP).

Within the private sector, there is a high dependence on foreign consultants. This, together with the exodus of skilled professionals in search of better opportunities in other countries, makes the current human resources situation unsustainable.

Current capacity problems could also be addressed through more twinning arrangements within the subregion, especially with South African organisations and institutions and SAIEA. Training consultants should facilitate the process of reviewing and approving EIAs. DANCED (Danish Cooperation for Environment and Development) has conducted a number of training sessions for Secretariat staff and members of Environmental Units in line ministries, parastatal organisations and NGOs. In addition, there are prospects for improving capacity through greater involvement in training by the University of Lesotho as well as the planned Institute of Science and Technology.

Experience in EIA
Lesotho has limited experience in applying EIA. In fact, the only major project in which it has been used is the LHWP. This happened despite the fact that the project preceded not only the establishment of environmental institutions in the country, but also the promulgation of national EIA legislation. The decision to use EIA during the project was influenced by the Lesotho Highlands Water Project Treaty, which provided for environmental protection, World Bank requirements, and international trends in environmental management (Tshabalala 2002).

Following problematic experiences from the construction of the Katse Dam (Phase 1A), such as the lack of interaction between engineers and the environmental scientist, positive changes were made to the EIA process. The Secretariat played a much more active role in the subsequent phase (Phase 1B) with the technical assistance of the UNDP and UNESCO.

Quality of EIAs
The quality of EIAs and the approaches taken to do them have varied because of limited experience and the absence of guidelines. A workshop was held in 2002 which aimed at setting minimum qualifications for environmental consultants. The Secretariat has also recognised the need to institute a system of accreditation to ensure high-quality reports (Puling, pers. comm. 2002). In this regard, lessons may be drawn from the establishment of an Interim Certification Board recently set up under the auspices of the southern African Institute for Ecologists and Environmental Scientists (SIAE&ES) in collaboration with the International Association for Impact Assessment (IAIA) and other organisations in South Africa.

Since the environmental consultants and the Secretariat are both still going through a process of learning, it would be beneficial, in the interim, to invite internationally experienced reviewers for large projects.

Public participation
Despite attempts to target specific interest groups, there has been little participation by the public and government institutions in the EIA process. This results from a lack of appreciation of the role of EIA in development and insufficient information about proposed development projects, which comes from the absence of a culture of public debate on developmental issues. Guidelines on public participation are being prepared to address this problem and EIA awareness-raising campaigns are planned.

However, in order to assure greater participation and interest in the use of EIA, there is a need to promote it to

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17 The EIA was managed by a staff member from the Lesotho Highlands Development Authority. Specialist studies were done by expatriate consultants who included Basotho on their teams as required by the Authority.


19 Ms B Puling, Member of the National Environment Secretariat.
stakeholders as a development tool and to continue to target specific groups. The Environment Act empowers individual citizens to challenge inappropriate environmental decisions in the courts and this might encourage the public not only to do so, but also to take a keener interest in the entire process.

Environmental management in general could also benefit from greater sharing of information, particularly with decision-makers, who are often not familiar with national and regional environmental issues.

**Impact of EIA**

Currently, EIA does not significantly influence decisions. It acts largely as a mitigation exercise because the option of stopping projects is not considered. This is due to the fact that many projects such as the LIWP, roads and building structures are considered to be of national, political or strategic importance, or crucial for poverty reduction and industrialisation. These imperatives override serious consideration of any potential negative environmental or social impacts. Furthermore, projects are generally also implemented in a rush, making it unlikely that EIAs would be thorough.

Figure 6 shows the procedural steps for EIA, as legislated in the Environment Act. Although the procedures will only become formally effective once the legislation is in force, the Secretariat has adopted them all except the use of a tribunal.

In the next ten years, it is expected that a clear and nationally accepted vision will guide the country towards sustainable development. As a result, a greater number of policies, programmes and projects in several sectors could undergo an EIA or strategic environmental assessment (SEA) process. These sectors could include water, mining, urban and rural development, agriculture, processing and manufacturing industries, natural resource conservation, waste management, and communications, energy, electricity and transportation infrastructure.

**Media**

The National Environment Secretariat has held a number of information and environmental awareness workshops to date, including one specifically for the media, to encourage media practitioners to promote debate on environmental issues. This objective has been achieved only to a limited extent because political issues in the media have greater prominence than issues of sustainable development. Nonetheless, the recent increase in newspapers (previously 6, now 15), news magazines (previously only 1, now 2) and radio stations (previously 1, now 7) as a result of the liberalisation of the media provides an opportunity which could be harnessed.

Under the Environment Act, notice of the issue of an EIA report has to be published in the local media in order to elicit public comment.
The key successes relating to the development of EIA have been the inclusion of environmental protection in the Constitution and the passing of the Environment Act, with its provision for the establishment of the high-level intersectoral Lesotho Environmental Council.

Because of limited experience in applying EIA, Lesotho offers useful — albeit relatively few — lessons for EIA practice, amongst which is how to manage large and complex projects, such as the Lesotho Highlands Water Project. The EIA conducted for Phase 1B of the Project serves as a model for carrying out an EIA: it underlined the importance of a clear process with ongoing involvement by all stakeholders, especially NGOs. These valuable lessons are being applied to other studies.

Many challenges remain, as listed below:

- As in many developing countries with numerous priorities, sustainable development issues are not at the top of the development agenda. This results from a lack of understanding of their importance rather than a deliberate disregard for environmental and social issues. There is a need for information dissemination to correct this perception.
- Although several intersectoral committees have been established and have been provided for under the Environment Act, coordination remains weak.
- Public participation and transparency in the EIA process needs to be further improved. Government commitment to good governance, which is supported by legislation, will go a long way in providing this and should be facilitated by the fact that Lesotho has one of the highest literacy rates on the continent.
- There is a need to go beyond project EIA and ensure that government policies and programmes such as the policy on poverty alleviation are subjected to a strategic environmental assessment in order to give proper direction.
- There is a need to demonstrate to decision-makers the critical importance of sustainable development, by providing accurate information on resource trends and costs as well as on the role of environmental resources as life-support systems. Data for this could come from the second ‘state of the environment’ reporting process currently under way.
- Although Parliament only passed the Environment Act in 2001, there is concern that it may not be implemented immediately as there are no financial provisions in the current year to establish the institutional structures, namely the National Environment Council, its Board, the Lesotho Environment Authority and specialised ‘Technical Working Groups’. Without adequate capacity and support, these institutions cannot make any meaningful impact.

For EIA to be effective in Lesotho, a culture of public debate and participation needs to be developed.
Appendix 1: Case study

Lesotho Highlands Water Project, Phase 1B (Mohale Dam)

**Description of the project**

The Lesotho Highlands Water Project (LHWP) Agreement was signed with South Africa in 1986. The Agreement provides for the construction of three dams — the Katse, Muela and Mohale — to supply water to South Africa’s Gauteng Province and hydroelectric power to Lesotho. Electricity will be generated by a 72-MW plant at Muela, and 70 m³/s of raw water will ultimately be delivered.

The LHWP will be implemented in at least four phases over approximately 50 years, in line with projected water demand in South Africa. Phase 1A involved the construction of the Katse Arch Dam with its appurtenant facilities, the Muela Hydropower Complex, and approximately 82 km of tunnels for water transfer and delivery. Phase 1B, which is currently under way, involves the construction of the Mohale Dam — completion is targeted for 2003. The costs for Phases 1A and 1B are US$2.5 billion and US$1.5 billion, respectively.

**Alternatives**

The alternatives that were considered before the project was started were —
1. the Caledon Cascade Scheme, involving the diversion of water from the Orange River to the Vaal system through 19 dams
2. a canal scheme from the Orange River to the Vaal system
3. water transfer from the Zambezi River
4. water transfer from the Tugela River
5. the desalination of sea water
6. reducing irrigation, and
7. converting wet-cooled to dry-cooled power stations.

**EIA process and impacts**

The EIA process for the Mohale Dam used some of the lessons learnt from Phase 1A. These involved —
1. scoping and identifying important environmental aspects through public meetings and a definition of the study area
2. data collection and analysis
3. impact assessment, and
4. preparation of a management plan.

The issues investigated were —
1. the freshwater environment
2. streams and river flows
3. aquatic habitats
4. rare and endangered aquatic species
5. the terrestrial environment
6. rare and endangered terrestrial species
7. the socio-economic environment, and
8. sexually transmitted diseases.

Some of the expected impacts were the removal of people, improved access to the remote highlands, and increased government revenues from project royalties.

**Key features**

The key features of the EIA for Phase 1B, which resulted in the affected people feeling less disadvantaged than those affected by the Katse Dam, were the following:
- The establishment of Area Liaison Committees to carry out detailed consultations in the project area
- Timely preparation of a comprehensive EIA and environmental management plan
- Development of a detailed resettlement plan with the people affected
- Maintenance of a close liaison with the NGOs (which resulted in a Memorandum of Understanding) and with the National Environment Secretariat and
- Establishment of Field Operations Units to respond rapidly to compensation claims. As a result, a resettlement and development programme was carried out before construction started.

Completion of the Mohale Dam is targeted for 2003.
### Appendix 2: Useful contacts

#### Key government officials dealing with EIA

<table>
<thead>
<tr>
<th>Contact</th>
<th>Ministry</th>
<th>Address</th>
<th>Telephone</th>
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<th>e-mail</th>
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</tr>
</tbody>
</table>
**Key NGOs and community-based organisations (CBOs) dealing with EIA**

<table>
<thead>
<tr>
<th>Contact</th>
<th>NGO/CBO</th>
<th>Address</th>
<th>Telephone</th>
<th>Fax</th>
<th>e-mail</th>
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<tbody>
<tr>
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**Key academic institutions dealing with EIA**

<table>
<thead>
<tr>
<th>Contact</th>
<th>Institution</th>
<th>Address</th>
<th>Telephone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

**Useful websites**

- Lesotho Environment Authority [www.lea.org.ls](http://www.lea.org.ls)
- Lesotho Highlands Development Authority [www lhda.org.ls](http://www lhda.org.ls)
COUNTRY REPORTS

References and other key publications


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