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KINGDOM OF LESOTHO

NATIONAL ENVIRONMENTAL ACTION PLAN

June, 1989

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PREFACE

The intention in drafting a National Environmental Action Plan is to provide a framework for incorporating environmental considerations into the nation's economic development and to focus and facilitate the co-ordination of the nation's environmental endeavours. The Plan identifies the areas of environmental concern which are of the highest priority and specifies the actions necessary to address these areas. It defines a National Environmental Policy for Lesotho and lays out the institutional and legislative structures required to implement that policy.

This National Environmental Action Plan should be regarded as a "living document" which can be modified in the future as necessary to conform to the changes expected both in the natural environment and in socio-economic conditions of Lesotho. Periodic updating of action programs and new opportunities for enhancing the environment will lead to continuing revisions of the Plan.

The preliminary version of the National Environmental Action Plan was prepared on the basis of the preparations for and discussions at the International Conference on Environment and Development held in Maseru from 12-15 April 1988, together with a careful scrutiny of the full texts of the many background papers which were prepared for the Conference. The preliminary draft was translated into Sesotho and circulated to all the District Development Councils and widely elsewhere throughout the country.

In addition to comments received from Government, from the Districts, and elsewhere in Lesotho, the principal documents used to expand upon the preliminary version were the Fourth Five Year Development Plan (1986/7-1990/91 Fiscal Years), released after the April Conference, and the Ministry of Agriculture paper dated August 1988 and entitled "Agricultural Production and Marketing Policies and Management of Soil, Water and Forestry Resources to promote Increased Productivity and Improved Nutrition in Lesotho".

After a second draft had been circulated for comment, a High Level Technical Review Meeting was held in Maseru on October 25-27, 1988. Over 70 experts from Lesotho government and non-government agencies plus international environmental specialists revised the document for the final form presented here.

Chapters 1-4 give the background to the environment and development issues in Lesotho, describe the main problems and outline existing Government policy in key areas. The Five Year Plan is frank in admitting that environmental policies and programmes have, in the past, failed to achieve the objectives set for them. The challenge is to improve coordination of efforts being made by different Ministries, as well as the modification and strengthening of some programmes in the light of experience and the introduction of new

initiatives to address problem areas not at present covered. The emphasis in the Environmental Action Plan is, therefore, on establishing an appropriate institutional structure and policy framework (Chapter 5) and on defining actions to address specific issues (Chapter 6). While Chapter 1-4 are mainly descriptive, Chapters 5 and 6 adopt a prescriptive tone, focussing on the actions which need to be taken, and thus constitute the main part of the Plan.

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CHAPTER 1

INTRODUCTION AND BACKGROUND

This National Environmental Action Plan comprises the thinking of literally hundreds of persons from Lesotho plus the experience of experts from around the world. It is closely related to the Fourth Five Year Plan and the reader is referred to that document for details of the history of development in Lesotho. The timescale considered herein is purposely longer term than five year planning. Although many actions concerning the environment are urgent and will be taken now, the Plan recognizes the need for patience and fortitude since important actions require changing human and bureaucratic behaviour.

Proximate causes for environmental degradation are only part of the understanding necessary to deal with these problems - the Plan searches for underlying and primary reasons why human use degrades the resource base. The search illustrates the multi- disciplinary approach required for understanding why, especially, rural people do what they do. An interdisciplinary approach -- an "ecology of disciplines" -- must be employed to learn these underlying factors.

What has been lost cannot be conserved or protected; it must be restored, therefore, much emphasis is given to reclamation and rehabilitation while recognizing the inexorable changes in the environment from natural forces.

The scope of this document is broad. The word environment encompasses:

- the quality of air and water as related to human health;

- the condition of natural systems of soil, water, vegetation and animals as related to sustainable productivity;

- the preservation of wild life and their habitats, cultural and religious sites, and natural beauty;

- the ambience of human settlements and social settings as related to quality of life;

- the exploitation of non-renewable resources as related to maintaining environmental quality.

1.1 The Country

Lesotho is a landlocked country of some 30 thousand square kilometres, completely surrounded by the Republic of South Africa. It is situated at the highest part of the Drakensberg escarpment of the eastern rim of the South African plateau. The land itself is classified into 4 physiographic regions (see Map 1).

The lowlands:

These range from 1400 to 1800m in elevation, and consist of a belt varying from 20 to 50km in width along the western border. About 80% of productive arable lands are in this region, as is consequently the bulk of the human population. In this area rocks are generally erodible sandstone. Soils tend to be shallow and highly erodible especially in duplex formations, i.e. in areas where a non-permeable clay layer lies beneath the shallow sandy soil cover.

The foothills:

These have elevations ranging from 1800 to 2000m and form a narrow strip running northeast to southwest and lying adjacent to the lower mountain range. This land covers 8% of the country and supports a high population density.

The Senqu Valley region:

This region has elevations ranging from 1400 to 1800m, it is the major grassland area and marked by shallow soils. The population in this region largely depends on livestock and mixed farming.

The higher mountain region:

The mountains range from 2000 to 3400m and are primarily used for summer grazing. Rock formations are mainly basalt.

1.2 Resources

The country's principal resources are its land, water and people. The potential and actual agricultural utilisation of the land are described in some detail in Section 1.4. Natural resources besides the land, of which only 13% is arable, are limited. Mineral deposits are few and generally uneconomic. The only obvious unexploited resource for export is water which is due to be sold to South Africa through the Lesotho Highlands Water Project.

The scenic beauty of the country is a major asset for tourism. The country is rich in historic relics ranging from stone age cultures through the era of the Bushmen with their cave paintings, to the founding of the nation over 150 years ago. These historical reminders still remain, though threatened through neglect and vandalism, but the country's wildlife, once abundant in numbers and species, has dwindled to a poor remnant today.

Map 1: PHYSIOGRAPHIC REGIONS

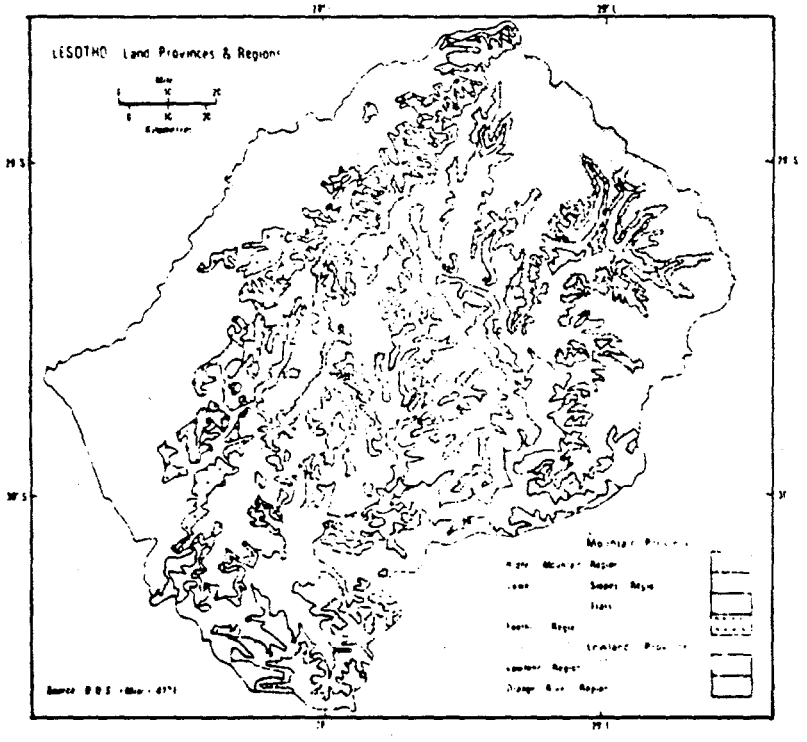
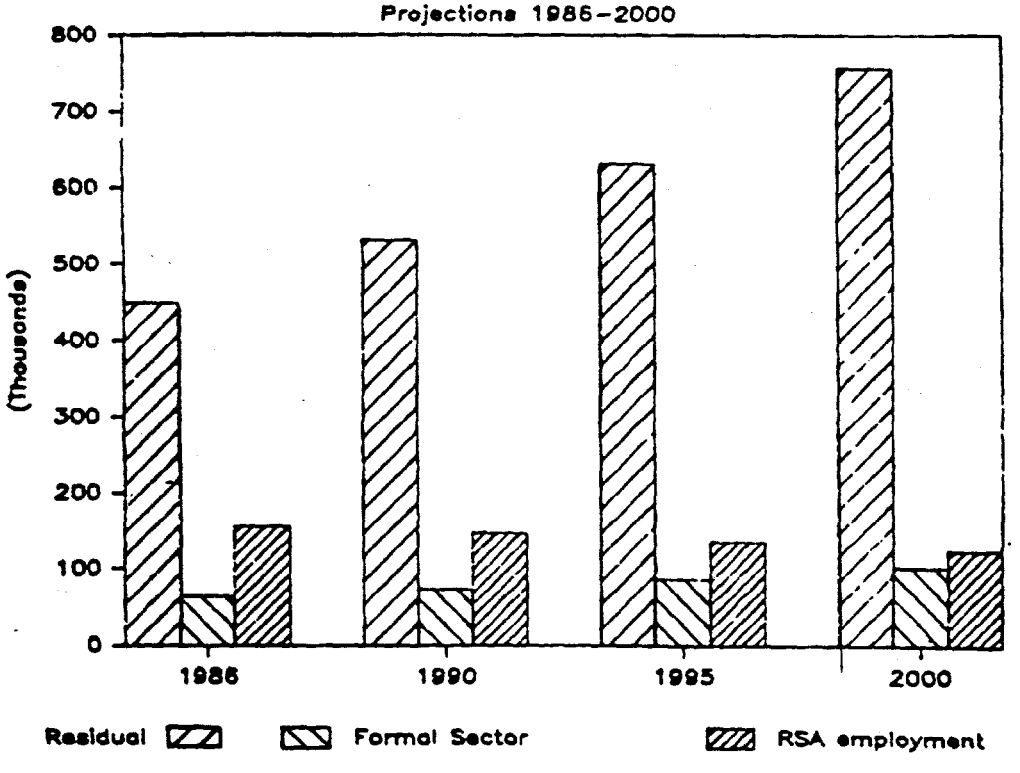


Figure 1: STRUCTURE OF LABOUR FORCE



Floral diversity is being progressively reduced, primarily by overgrazing and indiscriminate burning, as well as by indiscriminate cutting of remnant woody vegetation, gathering of wood for fires and handicrafts, cutting of grass, especially from the spongy areas, and cutting and digging of medicinal herbs and various endangered species. The preservation of historical relics and the re-establishment of the diversity of fauna and flora that once existed have a bearing on the potential for expanded tourism, but are of greater significance to the nation as its culture and heritage.

The total population of the country was enumerated at 1.6 million in the 1986 census, with an annual growth rate of 2.7%. A significant portion of the workforce is employed outside of the country, the number of migrant workers at the time of the census being estimated at 130 thousand. Employment in the modern sector of the domestic economy is characterised by acute shortages of managerial, professional and technical skills in all spheres. Two of the indicators of these shortages are vacancies in Government posts and the relatively large number of expatriates holding high and middle level positions in the economy. In all, the modern sector only provides employment for about 6% of the total labour force. Approximately 84% of the total population are resident in the rural areas and depend to a greater or lesser extent on agriculture for their livelihood. Population density in the rural areas varies considerably across the country, as is shown on Map 2.

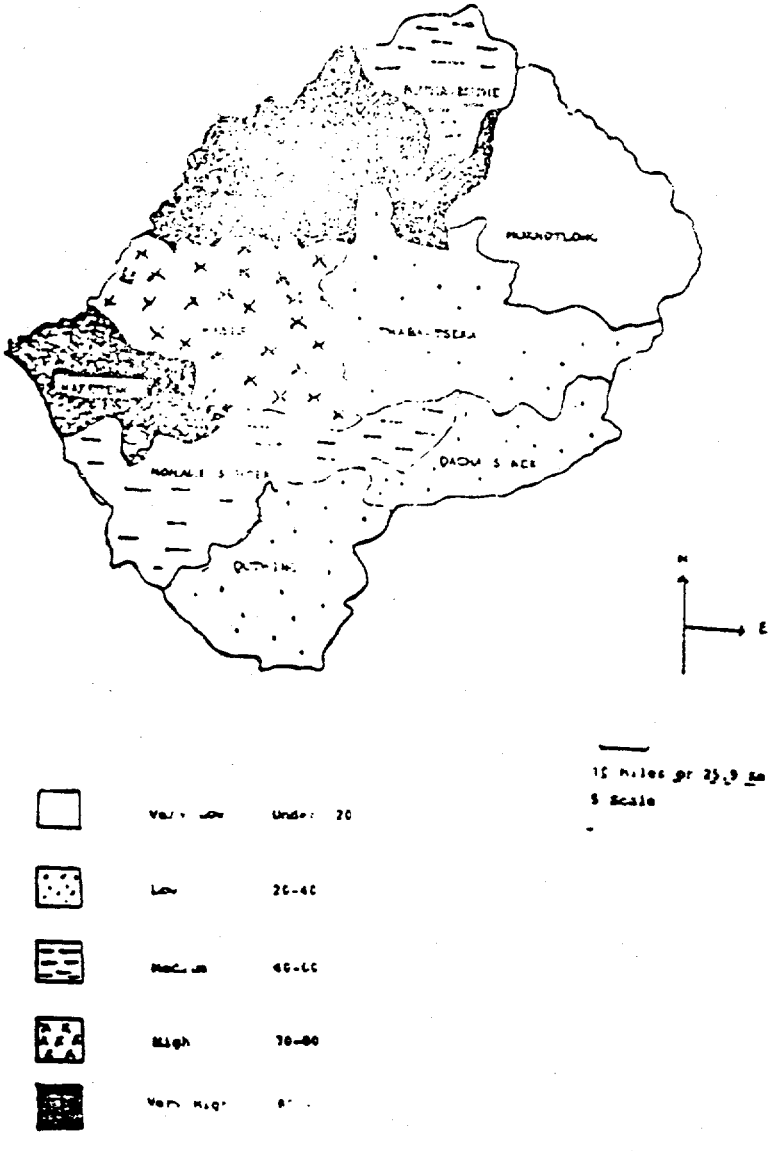
1.3 The Economy

Average per capita income was about M740 in 1985 (US $330m), putting Lesotho into the category of least developed countries. It is notable that the Gross National Product of Lesotho is substantially larger than the Gross Domestic Product (GNP of M1188 million at market prices in 1985, as against GDP of M581 million), due to the remittances of the migrant workers. A related characteristic of the economy is that the value of imports of goods and services is greater than GDP (M798million as against M581million in 1985). The Government's principal source of revenues is Lesotho's share in the funds accruing to the South African Customs Union (SACU).These figures emphasize how vulnerable the economy would be to any disruption of present migrant labour practices in South Africa.

Even without policy changes occurring, prospects for growth in recruitment of Basotho mineworkers are poor, as are employment prospects in the formal domestic economy (see projections in Figure 1). Agriculture will therefore have to provide for an increasing proportion of the population. In that regard, recent declining trends in agricultural yields are a major source of concern. While agriculture presently accounts for less than 10% of GNP, in socio-economic terms it is the key sector and may become

increasingly important if more people are forced to depend on the land. At the same time, it is in agriculture that the most pressing environmental problems are to be found. To examine this interface between economic and environmental factors, a more detailed introduction to agriculture and rural land tenure practices (as compared with other sectors) is warranted, and is given in the next section. This provides the context for the discussion of Government's present agricultural and environmental policies in Chapter 4, and additional measures proposed in Chapter 6.

Map 2: DISTRICTS AND POPULATION DENSITY



1.4 The Agricultural Sector

Lesotho has the climatic conditions for the annual cultivation of most temperate zone crops including maize, sorghum, wheat, beans, peas, vegetables and fruits such as peaches, apricots, cherries and apples. Rainfall averages from 400-500 mm pa in the southern lowlands increasing to 700-900 mm pa in the northern lowlands with most mountain areas experiencing higher rainfall. The potential for commercial crop production is greatest in the lowland areas which contain more than three quarters of the total arable land. Some arable agriculture takes place in the mountain areas, but most crops grown are for home consumption or sale in local informal markets.

Average temperatures and rainfall are usually adequate for production of most temperate crops, but localized drought conditions during the growing season, and the likelihood of severe frosts even into the summer months, pose obstacles to reaching maximum agricultural crop potential and thus increase the risks associated with crop agriculture considerably above what would be indicated from the prevailing average conditions.

In the past, most rural households have had family members involved in relatively stable migrant employment at wage levels well in excess of income available from subsistence or most commercial agricultural activities. In recent years, a smaller proportion of the population has found migrant work, so this pattern has begun to change, with conditions being exacerbated by growing population and consequent growing pressure on the land. Average farm holdings of households with land allocations have declined to less than 1,4 ha per household as population has increased, while landless rural households have increased from 13% of the rural population in 1970 to over 25% in 1986.

The rapid expansion of off-farm employment in the mid 1970's resulted in an increase in disposable income for rural households and a decrease in the resident male labour force available to carry out agricultural production activities. Close integration with the nearby South African economy provides access to a wide range of fresh and processed foods at competitive prices which are increasingly purchased by rural households. The result has been a decline in the intensity of traditional subsistence production and the slow development of commercial production as the attractiveness of agricultural income sources to rural households with small land holdings has declined relative to increased consumer buying power generated by off-farm earnings.

The operation of traditional land tenure practices has resulted in the concentration of most agricultural land allocations in the hands of elderly heads of households, most of whom are women. This has a positive public welfare effect as it provides these rural residents, many of whom have limited sources of income, with the

basis to provide for their own livelihood. However, most of these households have few, if any, of the other resources required to efficiently operate their fields and most produce well below their maximum potential, with many fields lying fallow each year.

With the generation of off-farm employment opportunities not keeping pace with the continued expansion of the rural labour force, there is a growing number of younger, male headed households being formed each year. There is a potential for increased participation in commercial agricultural production if land and credit are made available. At the same time, there is potential for female headed households to expand the intensity of production for household maintenance needs and for commercial crop production, including horticultural products. Government is designing policies and programmes to provide a framework and support for both increased commercial and household production from both groups.

1.5 Livestock Holdings and the Environment

The same economic and demographic forces influencing the decline in crop production for household maintenance have affected production and sale of livestock products. Livestock are held for a number of social and economic reasons. Small stock, sheep and goats, are held primarily for their economic ability to produce annual income through the sale of wool and mohair and to provide a source of red meat. Large stock provide draft power for crop farming, milk, and a store of wealth which is available to meet major expenses associated with payment of school fees, providing marriage dowries and other in-kind expenses associated with social occasions.

The numbers of both large stock and small stock have tended to increase during the 1980's, but the number of Basotho holding livestock has declined with major grazing herds becoming more concentrated in the mountain areas among fewer owners. This has led to an erosion in the equitability of traditional communal range grazing practices, which found their initial justification in the fact that most rural households owned livestock and were entitled to free use of public communal grazing land which was managed through the Chieftainship system. Today, only about half of the rural households own livestock. The other half is able to derive little, if any, benefit from the previously equitable range land tenure practices. Government policy regarding rangeland utilization is now oriented to restore equity, thereby renewing the viability of village life and strengthening the rural community resource base.

With increased stockholdings, combined with the onset of a general period of below average rainfall, which reduced rangeland recovery capability, a relentless further deterioration of an already fragile and eroded land base occurred throughout rural Lesotho, but

especially in the southern districts. It is in this context that the Government is now seeking to expand upon and make more effective environmental programmes, and to make these an integral part of agricultural programmes.

In earlier periods when the population pressures on the limited land base had been less pervasive, many animals were moved from winter grazing in the lowlands near the owner's residential areas to summer range land areas located in the mountains. These mountain "cattle post" areas, allocated and controlled by the Principal Chiefs, have been the basis for control over grazing rights of livestock holders for many years. Increasing population pressures on the limited landbase in the lowlands, combined with greater concentration of livestock ownership among fewer households and the increase of livestock holders permanently resident in the mountains, have eroded the equity and efficient management of traditional transhumance practices as they relate to both lowland and mountain livestock holders.

A dominant feature of these transhumance practices is that allocation of cattle post rights has been by historical precedent and relationship to the lowland Chieftainship Wards. This has resulted in the present mosaic of grazing rights amongst livestock holders, quite unrelated to their residential proximity to allocated grazing areas. It has led to a relative discrimination of cattle post allocations against livestock holders who are permanent residents in the mountain areas. For the same reason, effective enforcement of grazing rights, through issuance of permits and implementation of programmes designed to maintain range land viability have become increasingly difficult to administer. Government policy is now intended to rationalise cattlepost adjudication procedures and to arrest environmental degradation through restoring effective management of public rangelands.

1.6 Development Strategy and Planning

The accentuation of development problems despite the achievements since independence, has led to a fundamental reassessment of Lesotho's development strategy. The new approach emphasizes human development within a cultural context, putting man at the centre of development, with economic growth and technological change being means, and not ends in themselves. Development is to be more inward looking or endogenous, emphasising self-reliance, self-sustenance and harmonious advancement as goals.

This is reflected in the Fourth Five Year Development Plan, covering fiscal years 1986/87 to 1990/91. The main strategic objectives of the Plan which emphasize basic needs, employment and rural development, are to:

- accelerate development with a view to meeting more adequately basic needs, and achieving a more equitable distribution of national wealth;

- maximise national income and employment; and

- reduce the poverty level through rural development.

The Plan emphasizes the need to strengthen the role to be played by Village, Ward and District Development Councils. Through these institutions, it is intended that people at the local level will become involved in the planning process.

Many of the sectoral goals and policies of the Plan focus on issues central to achieving economic growth while restoring environmental stability and quality. The problem is precisely that such issues cut across the responsibilities of different ministries, making it difficult to achieve the necessary coordination to make the various programmes really effective. This issue is addressed in detail in Chapter 5, where the suggestion is also made that in future national plans should have less of a macro-economic and sectoral focus. By giving more emphasis to environmental factors, and adopting physical regions as the principal units for planning purposes, rural development policies would be more likely to achieve the economic goals set for them, while at the same time would incorporate a greater element of environmental restoration and conservation. The success of such a reorientation of national planning would depend on the decentralised development council system becoming effective.

CHAPTER 2

ECONOMIC DEVELOPMENT AND THE ENVIRONMENT

2.1 Sustainable Development

The International Conference on Environment and Development held in Maseru in April 1988 marked an important step for the country in grappling with the close interrelationship between the environment and socio-economic development. While national environmental consciousness in Lesotho is as old as the emergence of environmental problems during the colonial period, the Conference was held in the context of the growing international awareness of the environment-development nexus. Through staging this Conference, Lesotho has made its own contribution to deepening global and regional understanding of the issues and of formulating more soundly based development strategies for the future.

Amongst African countries, the need to incorporate environmental concerns more thoroughly into economic planning was given formal recognition in the Lagos Plan of Action, which was adopted in the Nigerian capital in 1980 following the first Economic Summit of Heads of State. The process was taken a step further in the 1985 Cairo Conference of African Ministers of the Environment, leading to environmental issues being given prominence in the African Priority Programme of Economic Recovery which was adopted by the OAU Heads of State and Governments in the same year.

Within the Southern African Coordination Conference (SADCC), the Lusaka Declaration of 1980 pointed out that the livelihood of the majority of the people of Southern Africa is threatened by environmental degradation, which undermines the farming and animal husbandry on which they depend. With Lesotho being the country considered to be most seriously affected by ecological imbalance in the region, the SADCC Council of Ministers in November 1981 assigned the Kingdom of Lesotho the role of coordinating soil and water conservation within SADCC.

At the international level, the culmination of a series of initiatives to tackle the global environmental and development issues was the publication in 1987 of the report of the World Commission on Environment and Development entitled "Our Common Future". The primary concern of the commission's report, reinforcing the message of the 1980 World Conservation Strategy, is with sustainable development. The definition given is as follows:

> "Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs."

The Chairman of the Commission, the Prime Minister of Norway, Mrs. Gro Harlem Brundtland, in opening one of the hearings in Harare in 1986, observed that,

> "There are many dimensions to this idea of sustainability:
>
> "First, it requires the elimination of poverty and deprivation.
>
> "Second, it requires the conservation and enhancement of the resource base which alone can ensure that the elimination of poverty is permanent.
>
> "Third, it requires a broadening of the concept of development so that it covers not merely economic growth but also social and cultural development.
>
> "Fourth, and most important, it requires the unification of economics and ecology in decision making at all levels.
>
> "This may sound obvious, but until recently, conservation of the environment was perceived as something external to the development process...Environmental protection and development, far from being in conflict, are in fact closely interdependent, locally, nationally, regionally and globally" (cited by Minister of Planning, Dr. Sefali, in his address to the International Conference on Environment and Development in Lesotho, 1988).

2.2 Lesotho's Environment - Development Crisis

In Lesotho, the organic link between the environment and development is all too clear. As was described in Sections 1.3 and 1.4, a higher proportion of a rapidly growing population is each year becoming more dependent for a livelihood on the land while environmental degradation is resulting in declining agricultural productivity in respect of both crops and livestock. Furthermore, access to land, ownership of livestock and resulting incomes are becoming progressively more skewed, accentuating the severe inequalities which already exist.

The main environmental problems will be described in some detail in the next Chapter. Seen in the context of the international development-environment debate, with such a serious imbalance between rapidly growing population and declining capacity of the national economy to provide income and employment, the impoverishment of the country's land base takes on the dimensions of a crisis. In Lesotho's case, the question of "sustainability" is a matter of concern for the present population and not just for future generations.

CHAPTER 3

LESOTHO'S MAIN ENVIRONMENTAL PROBLEMS

3.1 Overstocking and Range Management

The most widespread and evident environmental problems of Lesotho are directly or indirectly related to overstocking. Estimates of overstocking of rangeland vary from 150 to 300% of estimated carrying capacities. Continuous and uncontrolled grazing has resulted in progressive deterioration in the condition of the rangeland, which is manifest in the increasing loss of vegetation cover, depletion of the more palatable species of grasses and their replacement by woody shrubs (such as the Karoo shrub, sehalahala). The July 1988 resource survey by the Conservation Division of the Ministry of Agriculture found the condition of only 12% of the rangeland to be "good" or "excellent", the remainder being "fair" (73%) or "poor" (12%). Other estimates of range condition are far less optimistic. Unless stocking rates can be dramatically reduced and range management policies made effective, deterioration will continue at an increasing rate.

Analysing the underlying causes of environmental problems such as overgrazing is complicated by the fact that causes and consequences of the different environmental problems are closely interrelated. For example, crop residues are consumed by animals due to the traditional right that stockholders have to graze their animals on the stubble after harvest. Overstocking is resulting in the increased consumption of crop residues that should be essential for improvement of soil fertility and soil structure, thereby contributing to further erosion. At base, this factor arises because of the system of land tenure, which is not only contributing to environmental degradation, but is no longer fulfilling the equitable social function for which it was intended. As the proportion of the people holding cattle has declined, a situation has arisen where stockholders have increased their individual welfare by increasing stocking rates, transhumance and overgrazing, this being at the expense of society as a whole, which has to bear the substantial costs of soil erosion and land degradation.

The major part of direct rangeland degradation in Lesotho is due to sheep and goats, and is greater in the foothills and mountains. In the lowlands, cattle are a more significant cause of degradation than sheep and goats, due to their effects or conservation works (such as Terraces).

3.1.1 Diagnosis of the Problem

The proximate causes of rangeland degradation in Lesotho are overstocking, poor livestock management and poor rangeland management. However, the main underlying causes are:

1. Population expansion. In an economy where people are, for both socio-cultural and economic reasons, heavily dependent on livestock, population expansion has led to a significant increase in the total number of livestock on the range. It has also reduced the area of rangeland available by increasing the land area committed to other uses.

2. The communal land tenure system in which individuals have almost unrestricted access to rangeland has led to overstocking, by enabling these individuals to ignore most of the costs of grazing. The result of privately rational behaviour is widespread rangeland deterioration. This affects the choice of draft power as well as the numbers of smallstock grazed.

3. The communal land tenure system also makes it difficult for individuals to raise loans for investment in, for example, high quality breeding stock, thus threatening the genetic pool of livestock and necessitating larger herd and flock sizes needed to yield a given income.

4. The communal grazing system also makes livestock breeding and health control difficult if not impossible

5. The current legislation governing stocking levels is ineffective due to the weakness of enforcing institutions, and, historically, erosion of the power of the chiefs, and the lack of political will.

6. Unstable and irregular marketing arrangements have provided a disincentive to increase offtakes. This problem has been exaggerated by the disinvolvement of private sector marketing agents, after marketing was brought under government control.

7. Insecurity of ownership of livestock due to stocktheft has led to the undesirable concentration of livestock around kraals, again with adverse effects on the range.

8. Finally, and potentially most important, the lack of alternative investment opportunities available to harness, has compelled many to maintain larger than desirable holdings of livestock.

3.2 Soil Erosion and Fertility Loss

The most visible aspect of the country's environmental degradation is the denuded landscape scarred by gullies or dongas. In fact,

however, only a relatively small proportion of the land (5%) has been made unusable due to the intrusion of dongas. Soil loss from sheet and rill erosion is far more significant in quantitative terms (soil losses pa of 15 million tonnes from croplands and 23 million tonnes from rangelands, as against less than 1 million tonnes in gully erosion). No attempt has yet been made to quantify the direct economic costs of this level of soil loss. However, just to replenish the associated lost soil nutrients with artificial fertilizer would require the expenditure of hundreds of millions of Maloti. The real economic damage is even higher, because even if artificial replenishment were possible, it would not adequately compensate for soil organic matter.

The dire state of land degradation and related environmental problems is particularly evident in the lowlands, but is also present in the foothills and the mountain zone. Human population is high in the lowlands, and even with a moderate livestock population as compared with the highlands, there is extensive overgrazing and soil erosion, and rapid deterioration of both water and soil resources. The plateaus and hill slopes are marked by signs of heavy erosion by the agents of water and wind, leaving behind bare bedrock, clay pans and stony soil lacking in humus. Dongas contribute by flushing the water and soil from the country thus washing away arable and pasture lands; this also has the effect of increasing the rate of siltation of reservoirs and ponds constructed for water storage.

Civil works structures also make a significant contribution to erosion and soil loss in some areas. Roads cut through steep and unstable or erodable areas create significant erosion. In the lowlands and foothills there are a number of areas where farmers' efforts at land husbandry (bents, terraces, etc.), and even tree plantations have been damaged by gully and sheet erosion initiated by careless road construction.

In addition to physical causes of erosion and the direct effects of overstocking, there are several underlying factors which lead to both soil loss and deterioration in fertility. It is to address these underlying causes that policy measures need to be directed. The shortage of household energy sources provides a good example. Most people in the rural areas, and to an extent in the urban areas, have been using indigenous shrubs for fuel, due to the lack of trees. Many parts of the country now have virtually no trees or shrubs. Besides rendering the landscape bare and unsightly, the elimination of indigenous shrubs and trees removes nutrients from existing soil, inhibits new soil formation, and contributes to soil erosion. The same result comes about through farmers using animal dung and crop residues as fuels instead of ploughing them back into the soil to increase fertility and improve soil structure. The situation is then exacerbated by monoculture and inappropriate tillage and husbandry practices.

Most of the factors underlying Lesotho's soil erosion and fertility loss are the same factors which underlie the country's overgrazing and range degradation. Section 3.1.1 above provides a more detailed diagnosis of such factors.

3.3 Hazardous Agricultural Chemicals

The previous two sections have described the chief environmental problems affecting agricultural production. Other problems which have arisen in the agricultural sector include the improper use of chemicals, in particular hazardous pesticides. There is a lack of information and of legislative powers in this area, as a result of which harmful substances, banned in other countries, have been finding their way into Lesotho.

3.4 Loss of Natural and Historical Heritage

As noted in Section 1.2 above, Lesotho's cultural and historical heritage is threatened by neglect and vandalism, and its natural heritage of wild flora and fauna has been very seriously depleted. Even its heritage of scenic beauty is threatened in places through the impact of road and transmission line construction, and through pollution.

By virtue of its topography and climate, Lesotho has Alpine conditions virtually unique in Africa, with species of flora and fauna that are limited to this area. However, the pressure of the expanding human population with concurrent impacts from factors such as severe overgrazing and uncontrolled burning have seriously depleted the natural heritage of Lesotho's Alpine areas as well as its lower lands. Concern about the destruction of indigenous plant species goes beyond the direct affects on the quality of rangeland already described. From a broader environmental perspective, the preservation of genetic diversity -- faunal as well as floral -- is recognised as an international priority for a variety of reasons, among them development and improvement of cultivated plants and domesticated animals, as well as the broader considerations scientific advance, technical innovation and the security of industries that use living resources.

A further aspect having more evident direct economic benefit is the role of indigenous fauna, flora, natural beauty and cultural heritage in attracting tourists to the country. Tourism and the conservation of a nation's natural and cultural heritage are very closely linked, and many other countries in Africa have found that a well managed natural and cultural heritage have provided the foundation for an economically important tourist industry.

However, Lesotho's natural and cultural heritage has been severely degraded by -- and is under continuing and increasing pressure from -- the underlying factors discussed earlier in this Chapter. In

addition, there are virtually no effective institutional arrangements to conserve and manage it.

3.5 Unplanned Urban Expansion and Settlement

The widespread encroachment of human settlements on an unplanned basis into agricultural land has been another contributory factor to declining agricultural production. Farmers have tended to respond to such incursions into agricultural lands by claiming grazing land for agricultural production, further overburdening carrying capacity and exposing new areas to increased erosion. However, it is also recognized that the fenced areas around the settlements often shelter abundant tree and other vegetative growth, in contrast to the unprotected and often barren lands around them, which further emphasizes the importance and urgency of achieving reforms in landuse planning, agricultural land tenure and land management.

3.6 Pollution

More generally, urban development without proper planning has introduced a new set of environmental problems, including careless disposal of wastes such as motor car wreckage and beer cans, air pollution from the burning of coal and water pollution from the disposal of wastes into rivers used as sources of drinking water. Inadequate pit toilet systems in urban areas have become a health hazard in spreading diseases. Industrial pollution is also a growing problem. Industrialization is highly desirable for Lesotho, but without proper planning and controls it will bring increased risk of air and water pollution.

At present there are no effective arrangements in the country for pollution regulation, setting of effluent standards, or monitoring of compliance with them.

CHAPTER 4

EXISTING GOVERNMENT POLICIES AND PROGRAMMES

4.1 Introduction

The intention of this chapter is to identify the principal Government policies and programmes designed to address problems in the environment-development nexus, which are already in place. This involves not just conservation measures in the narrow sense, but developmental policies which have a significant bearing on the environment. To a large degree, these policies and programmes are included in Lesotho's Fourth Five Year Development Plan. The policies identified are to be related to the underlying causes of environmental problems, particularly those identified Sections 1.4, 1.5, 3.1 and 3.2. above. The adequacy of these existing policies and programmes is addressed in Chapters 5 and 6, where suggestions are made about where reinforcement and/or additional measures are required.

4.2 Agricultural Policies

The Government's agricultural policies are focussed on increasing production and marketing of agricultural crops, livestock and livestock products in a manner consistent with the conservation of the land base. Specifically, in the Fourth Five Year Plan period (1986/87-1990/91) Government plans to:

- train and educate households in the proper preparation, preservation and storage of food;

- develop comprehensive watershed management programmes in order to integrate water and soil conservation activities, including soil rehabilitation through the use of improved production techniques to expand output of both crops and livestock;

- promote intensive livestock production in the lowlands to conserve the land resources necessary for crop and fodder production; and

- encourage controlled grazing through the creation of Grazing Associations, whose responsibility will be to prevent overgrazing and improve rangelands and, hence, livestock productivity.

Consistent with Government's general policy of decentralisation, production and marketing programmes are being carried out at district level. Recognising that it is only when communities have

been fully involved in planning and implementing measures that rural development initiatives have proved successful, Government is mounting at village level a programme of applied research involving the "farming systems approach". Particularly in respect of conservation, measures which build on familiar concepts and do not require large inputs of cash, labour or land lost to production, are intended to be carried out by the farmers. Such modest approaches are believed to be more likely to prove effective than more ambitious schemes which promise larger returns on paper, but which have frequently failed in the past, due to a lack of local support and involvement, and failure to produce adequate benefits to the participants.

As a means of simultaneously increasing household incomes and relieving pressure on the land arising from the conventional cropping and livestock practices, a particular focus of policy in the current Plan period is technical assistance with horticultural crops and intensive livestock production, including poultry, rabbits and fish. The major thrust of this is to improve the nutritional status of households with limited cash resources and to this end the supporting education and extension work at the district level will include advice on the preparation and storage of these items for home consumption. There will also be an emphasis, however, on the development of local market facilities and services in the districts, particularly to handle fresh perishable produce such as milk, eggs, fruit and vegetables. Taking this a stage further, where adequate channels to "off season" northern markets can be established, production of exotic "niche" crops such as asparagus, strawberries and snow peas will be encouraged.

To facilitate these forms of production, Government is promoting the development of irrigation where feasible, including farm ponds for supplemental irrigation. In large commercial-oriented schemes, investment costs will be shared if there is a clear public as well as private benefit to be gained. Government will also develop drainage and other water control measures where necessary.

4.3 Land Use Policies

To meet the commercial cropping, livestock development and environmental conservation objectives within the agricultural sector, significant changes in land use practices are recognised as being essential. At one level, the policy issue is the promotion of land use best suited to the climatic zone and soil type. This will result in adapting some of the land now used for the production of maize or sorghum to other crops or to fodder and forage production for winter feed. Intensive livestock production and stall feeding of cattle is being encouraged in the lowlands, while range grazing should become increasingly limited to mountain regions.

At a more profound level, the achievement of these changes requires coming to grips with the historical and cultural role of land and land rights amongst the people. During the Third Plan period (1980/81-1984/85), an attempt was made to do this through legislative means, principally the 1979 Land Act and the 1980 Range Management and Grazing Control Regulations. The current Plan is forthright in admitting that, despite the years of experience now gained, it has proved very difficult to effectively implement these measures.

The Land Act of 1979 provides for long term security of tenure under a lease system, where use rights are clearly defined and protected. Provisions of the Act empower Government to declare certain areas as Selected Agricultural Areas in which only specified agricultural activities can take place, thereby allowing consolidation to provide economically viable units. Where these are not being properly used, reallocation of land rights to landless people interested in productive agriculture is possible under the Act.

The intention in the present Plan period is to formalise existing share and lease practices and to encourage private contractors with the resources and willingness to farm to increase their contribution to the farming sector. Optimum land use will be promoted by providing incentives for land-holders who lack resources necessary to farm effectively to enter into fixed period lease and rental arrangements with contractors who will be able to more efficiently expand commercial agricultural production. Subleased lands will be consolidated to realize important production efficiencies needed to match higher incomes in the non-farm sector. It is expected that implementation of this policy will increase economic utilisation of existing fallow land, increase yields on current crop land which is inefficiently used and provide the basis for landless, male headed households to engage in productive, income-producing crop agriculture. A higher level of soil conservation practice will also be implemented as the lands are brought into full production.

The purpose of the Range Management and Grazing Control Regulations, gazetted in 1980, was to control grazing on rangelands and encourage destocking. During the previous Plan period, area-based projects which included grazing control, pasture rotation and stock reduction, did not produce the required results despite being backed by the 1980 Regulations. The main reason identified in the Plan for this has to do with the social organisation associated with the cattle posts. For effectiveness of range use, there must be an intimate link between the villages and the rangeland, whereas the present situation is one where the cattle post rangelands are located away from those who control them. Control lies not with a single village or group of villages under a single headman, but with cattle-post owners and users from different villages.

A major thrust of Government policy in the present Plan period is the reorganisation of cattle posts. It is envisaged that this will offer opportunities for the enforcement of the Grazing Control Regulations, while encouraging villagers to collectivise their interests to reduce stocking in an area where they all graze their animals. Policy is also oriented to strengthening livestock associations, to improving livestock through better breeding and to training herdboys in animal husbandry, vaccinating and culling livestock.

To tackle overstocking directly, a grazing fee system is to be enforced. It should have the effect of creating a cash need which will induce farmers to market their stock. To facilitate this, assistance is to be given in developing slaughter and marketing facilities. The grazing fees collected will provide the income base for District and Village Councils to make effective decentralized planning and development. If the funds are used by the Councils to improve the economic wellbeing of non-cattle owning village residents, it will also be possible to move towards the objective of restoring the equitable sharing of the benefits of using the rangeland resource.

4.4 Soil Conservation, Forestry, Tree Planting and Management

Since 1935, the approach adopted to arrest soil erosion has been mainly structural, in the sense of the massive effort expended in developing terraces, contour furrows, silt traps, diversions, waterways and the construction of structures in dongas. The emphasis in Government policy is now shifting, however, to biological conservation methods, applied with the socio-economic context taken fully into account. Authors such as Greenfield (in a paper presented at the Conference on Environment and Development in Lesotho) have pointed out "conservation construction costs are tremendous and, unfortunately, only provide temporary measures. However, vegetative soil and water conservation measures are not only extremely cheap (less than one tenth to one hundredth of the cost of constructed banks and waterways), but the farmers can do the work themselves.

In this regard, Government is giving special priority to the development of tree planting and management to achieve conservation and environmental protection objectives. Planting and managing of trees is an integral part of overall production/conservation programmes designed to increase both crop and livestock production while maintaining, for posterity, a stable soil and water resource base. The emphasis is on achieving the necessary symbiotic relationship between production objectives and conservation and environmental objectives which are necessary to achieve voluntary cooperation and involvement from rural residents affected by this policy.

New afforestation sites will also be developed, using labour-intensive methods, to control erosion and encroaching desertification. During the Third Five Year Plan period, all planting, tending and harvesting of trees in local forests was coordinated from Maseru Headquarters. Local communities were encouraged to maintain an independent and direct interest in planting, caring and harvesting of tree stands for community use under advice from the Conservation Division.

During the current Plan period, the recently established Forestry Division is expanding this programme. The four major objectives set are to:

- encourage individuals and communities to plant trees close to where they are required;

- encourage planting of tree cover on marginal croplands to provide natural windbreaks for cropland, stabilise grass lands for pasture, and rehabilitate eroded areas for productive use;

- encourage the planting of tree cover to control the spread of dongas; and

- develop, through effective extension education activities, a positive attitude toward forest development.

This expanded programme provides the basis for self-sustained and continued growth of tree plantings, and of nurturing of young trees, throughout the country under local initiative. The target is to increase the afforested area from the present 10 thousand hectares to 17,5 thousand hectares by 1990/91. Due to the multiple objectives of government-directed planting in Forest Reserves, the new programme requires a diversification of species so that trees more appropriate to programme objectives are introduced to promote the social forestry concept.

4.5 Energy Policy

One of the main causes of the depletion of the biomass resource is the excessive use of traditional fuels in open fires. It is estimated that about 1,2 million tonnes of biomass consisting of wood, shrubs, dung and crop residues are being burnt in rural areas every year. Studies have revealed that, with the prevailing level of consumption and reproduction, all indigenous firewood will have disappeared in the first decade of next century.

In response to this precarious situation, Government is seeking to formulate and implement a consistent policy, which in particular aims towards improving the energy situation in the rural areas and reducing dependence on external energy supplies, especially

commercial energies. The following strategies for achieving these objectives are being pursued:

- exploitation of resources which cause little or no environmental damage such as hydropower and renewable energies;

- broadening of the supply base through the implementation of afforestation programmes; and

- promotion of energy conservation in urban and rural areas.

Government emphasis is on alleviating the energy problems of the majority of the people living in the rural areas.

4.6 Fauna, Flora and Historical Heritage

Government recognises that severe pressure on the land for human use and the lack of adequate protection have militated against the natural fauna and flora, while historical monuments and relics are threatened, intentionally or unintentionally, with defacement. The responsibility to maintain and enhance these resources has rested with the Ministry of Agriculture. However. in view of the inadequacy of the existing efforts, a review of the situation was carried out and the resulting recommendations are incorporated in this plan (see especially Section 6.5 below).

4.7 Other Areas of Existing Policy Affecting the Environment

There is a wide range of policies, falling under a number of Government Ministries, which have a bearing on the environment, to which only brief reference can be made in this document.

In respect of the Lesotho Highlands Water Project, a preliminary environmental impact survey has been carried out. The responsible ministry is charged with ensuring that, at each stage in the execution of the project, the environment will be taken fully into account.

In the water sector generally, Government policy is to improve conservation and utilisation practices, and ensure that clean drinking water is made readily available to all communities.

In respect of mining and quarrying, it is Government policy to reverse the previous practice of leaving open dikes which reduce vegetation cover, promote soil erosion and diminish the aesthetic appearance of the country. Similarly, greater attention is to be paid to achieving proper drainage when road construction takes place.

With regard to industry, Government is concerned about increased air and water pollution, particularly near heavily populated areas. The dumping of beer cans, scrap metal, and the wreckage of motor cars is also to be addressed.

CHAPTER 5:

INSTITUTIONAL AND POLICY FRAMEWORK

5.1 A National Environmental Policy for Lesotho

The basic principles of Lesotho's environmental policy are:

1. To assure all people living in the country the fundamental right to an environment adequate for their health and well-being.

2. To use and conserve the environment and natural resources of Lesotho for the benefit of both present and future generations, taking into account the rate of population growth and the productivity of the available resources.

3. To conserve the cultural heritage and use the environment and natural resources of Lesotho for the benefit of both present and future generations.

4. To maintain stable functioning relations between the living and non-living parts of the environment through preserving biological diversity and respecting the principle of optimum sustainable yield in the use of natural resources.

5. To reclaim lost ecosystems where possible and reverse the degradation of natural resources.

6. To establish adequate environmental protection standards and to monitor changes in and publish relevant data on, environmental quality and resource use.

7. To require prior environmental assessments of proposed activities which may significantly affect the environment or use of a natural resource.

8. To ensure that environmental awareness is treated as an integral part of education at all levels, and that this knowledge is used in the planning and implementation of development activities.

9. To ensure that the true and total costs of environmental use and abuse are borne by the user, i.e., the "polluter pays" principle.

It is necessary to recognise that the sustainable output of the country's renewable natural resources will have to rise at a faster rate than the rate of population increase if the objective of improved living standards, on the basis of the country's natural

resources, is to be achieved. Only by much better management of these resources, improving and conserving their productive potentials, combined with the effective control of population growth, could this objective be achieved.

Strong participation of rural communities in formulating and executing development programs is best secured by emphasizing to them that lasting plant-production benefits (rather than conservation benefits) are the primary aims of assistance programs. Improvements in organic matter, soil structure and the volume of plant materials in, on and above the soil promote increased output, while simultaneously and automatically achieving better conservation of water and soil. Another important principle is that, to the extent possible, their problems should be tackled in the order of priority which they consider important. Two further principles are that, initially, people should be helped to do better what they are already trying to do; and that initial interventions should be guaranteed to be successful in showing quick, perceptive and relevant benefits. The basic elements which are needed are:

- changes in agriculture and livestock polices and programmes, particularly in respect of a substantially improved extension service, to raise farmer incomes and provide incentives for conservation measures to be adopted;

- effective changes in land tenure so as to make possible the introduction of rational land use planning at the local level;

- measures to achieve reduction in the population growth rate; and

- economic diversification and industrialization based as far as possible on local resources and appropriate technologies;

As is clear from Chapter 3, many of these elements are already in place in Government's existing policies and programmes. It is, however, recognised that efforts in fields such as soil erosion control, livestock management, wildlife conservation and land tenure have been largely ineffective. The failures of previous attempts to implement conservation policies have been due to lack of co-ordination, lack of effective interdisciplinary approaches, insufficient resources, failure to establish suitable institutional structures, failure to incorporate the communities affected into the planning and execution process and thereby to take cultural and sociological factors into account, and finally resistance by vested interests. It is with renewed determination that the country is now seeking to overcome these obstacles.

One of the most visible forms that the changed approach will take

is in the establishment of new institutions to resolve conflicts and to improve inter-ministerial coordination of environmental policies; this is analysed in the next section. Of the other factors identified as requiring change, the one on which most emphasis was placed during the Environment and Development Conference was that of meaningful public participation. In the words of the pre-conference report of the Mokhotlong District:

> "It has to be noted that it is only when the people are consulted that they regard it as their duty to support all national programmes.
>
> "Public gatherings (pitsos) are an accepted convenient form of consultation. But pitsos should be used to exchange views and not to give orders.
>
> "Implementing civil servants should be aware that the success of government programmes or projects is in the hands of the people, regardless of how good such projects are. Early peoples involvement is of paramount importance to ensure success."

It is significant that Government policy documents now lay considerable emphasis on working closely with the people specifically in the manner recommended in the Mokhotlong document.

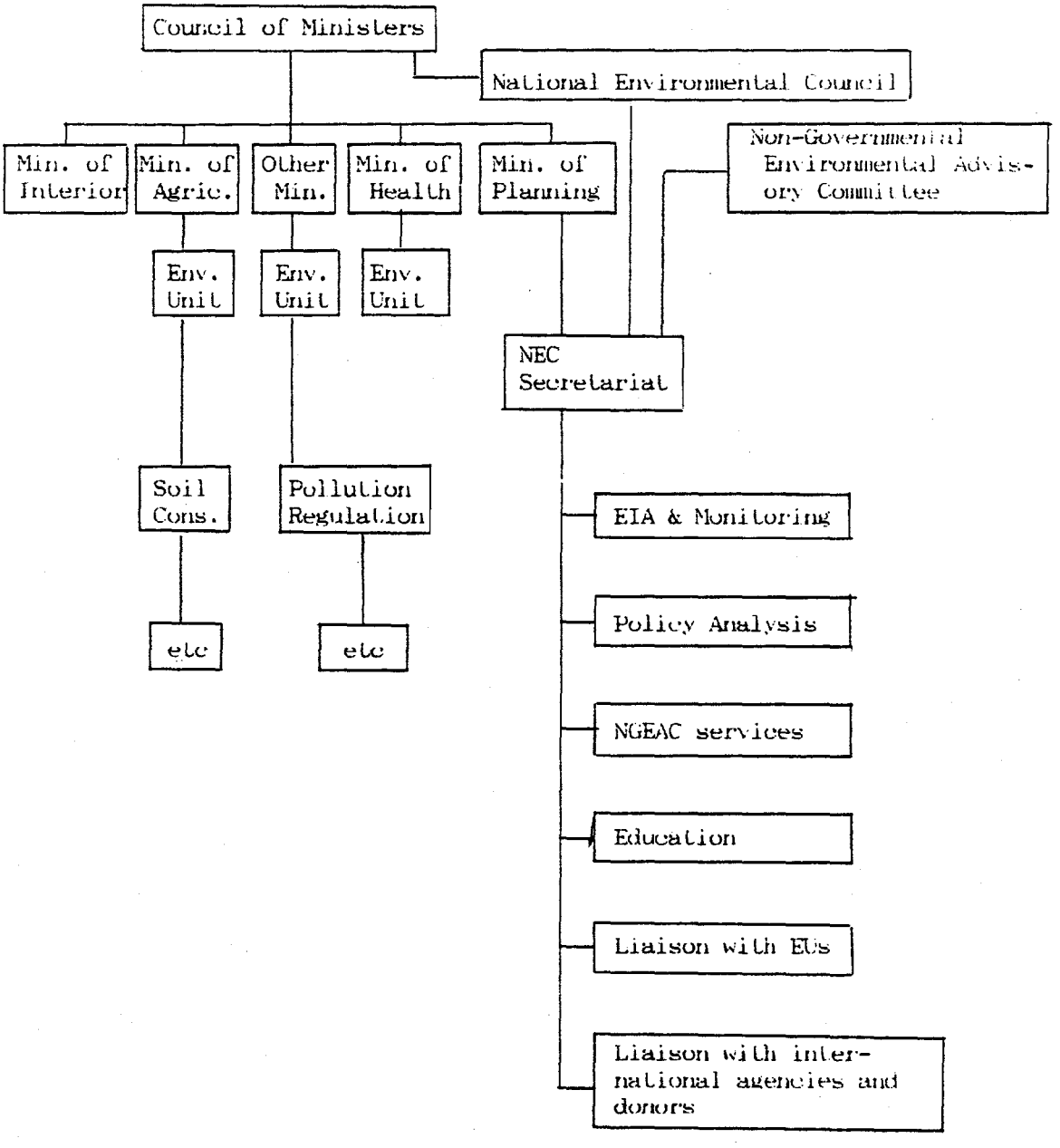
5.2 Institution Building

As has also been the experience in other countries, many of the difficulties that Lesotho has encountered in dealing with environmental problems have arisen because of the multi-sectoral nature of those problems and hence the cross-cutting ministerial responsibilities in the implementation of policies.

Conflicts about environmental matters arise from jurisdiction over land and water resources, competitive uses of the environment, differing priorities and time tables for environmental activities, and allocation of budgets.

The need for a more forceful and early articulation of environmental concerns in planning and policy-making is required, as well as improved coordination in the implementation of policies.

Fig. 2 Institutional Framework for Integrating Environmental Concerns into Economic Development



Government is organized into units by sectors, but environmental considerations cut across all sectors. Consequently, a major objective of this framework is to provide the necessary inter-sectoral integration and coordination.

Government does not believe that the creation of a Ministry of the Environment is a useful response to this need. Such a Ministry might accentuate the tendency for environmental issues to be thought of as being separate from wider issues of economic and social development. Instead, the formation of a National Environmental Council (NEC) is proposed, to make policy and coordinate the activities of government ministries at central and local level, NGO's, the private sector and District and Village Councils.

The NEC is to be an independant body from Government's operational ministries. To give it the necessary authority, however, the NEC should be at the ministerial level. Within the line ministries, to ensure that environmental concerns are more fully integrated into routine work, it is further proposed that there should be an environmental officer in every sector, or, in the larger ministries, an environmental unit. Working within the framework of environmental policy and the guidance of the NEC, these units would have the responsibility of ensuring that all sectoral programmes take environmental elements fully into account.

While in some cases environmental goals compete with other national goals and objectives, in most cases environmental considerations are complementary to and provide important support for other governmental objectives. Indeed, environmental factors cut across the sectoral governmental missions and can provide the conditions necessary for their sustained success. Governmental organization must be based on this relationship and must foster it. Therefore, the functions of the new environmental institutional framework include:

- coordination of agencies and governmental actions at all levels;
- communication and liaison;
- conflict resolution and national trade offs;
- education and public information;
- environmental impact assessment;
- advice to economic development policy planning and management; and
- monitoring of environmental quality.

At the local level, democratic participation and control should be assured by a meaningful degree of decentralisation to District, Ward and Village Councils. It is intended, first, that these councils become local authorities with executive powers over issues of development and conservation, and second, that this will be backed by diverting technical and financial resources to the rural areas. A vastly expanded rural development extension service is to be the primary mechanism through which such support is to be effected. Chiefs will continue to play a central role both through their ex-officio chairmanship of the councils, as well as their traditional roles in mobilising the people for community action.

In summary, it is a three-tier structure which is envisaged for implementing the National Environmental Action Plan:

- at the national level, the National Environmental Council (NEC) which makes policy, resolves conflicts and directs the Secretariat;

- environment units within government ministries; and

- at the local level, District, Ward and Village Development Committees.

Fig.2 diagrams the new organizational framework in a general way with particulars of staffing and procedures left to be worked out as appropriate. The NEC is seen to be a sub-unit of the Council of Ministers. Its members are those Ministers most concerned with environment and natural resources and its Chairman is chosen from that group. A Non-Government Environmental Advisory Committee (NGEAC) is appointed by the NEC Chairman. Its members are chosen on basis of their own wisdom but also to assure inputs from District Development Councils, chiefs, the University, private sector and NGOs. A NEC Secretariat (NECS) serves both the NEC and the NGEAC. It is located in the Ministry of Planning for efficiency in integrating environmental concerns into the development process.

5.3 Functions of the NEC Secretariat (NECS)

The main functions of the NECS are to serve the NEC to:

- facilitate the resolution of conflicts among agencies as to the use of environmental resources and assist the trade offs among competing national goals

- develop programmes and strategies at all levels to educate and make the public aware and conscious of environmental problems, their causes and their critical impacts on prospects for economic growth, as well as measures required to redress

(where possible) the degradation of natural resources and the preservation of the nation's historical and cultural heritage;

- coordinate environmental units in line ministries as to policy and strategy formulation and implementation in all sectors;

- ensure that the environment is treated as an integral part of the planning process including future national Five Year Development Plans

- recognize the role of women in relation to environmental management and foster their custodianship

- monitor the actions of donor agencies, NGO's, the private sector, and private groups in the design and implementation of projects which have an impact on the environment;

- require and take responsibility for prior environmental assessments of proposed activities which may significantly affect the environment or use of a natural resource;

- develop guidelines for consideration of environmental aspects in designing all development programmes and projects by both Government agencies and the private sector;

- review environmental legislation, identify shortcomings and make recommendations to the responsible authorities for improvements and more effective enforcement; and

- serve the NGEAC and facilitate its activities.

Additional responsibilities will be assumed once the NECS is operational, one suggestion being the annual publication of a comprehensive review of the "State of the Environment in Lesotho".

The NECS is to be given a statutory mandate and authority to communicate directly with any unit of government on environmental matters.

It is to be stressed that the execution of programmes targeted to address specific environmental problems (as detailed in Chapter 6) will remain the primary responsibility of the operational ministries, with the NEC being created to play a coordinating role. The above list of responsibilities of the NECS also includes a number of items of a more general nature which together constituted a policy framework on the environment. These items are discussed in more detail in the remaining sections of this chapter, the emphasis being on actions that are required to be taken by NECS itself, as well as operational ministries, to make the overall national environmental policy effective as soon as possible.

5.4 The Non-Governmental Environmental Advisory Committee

The participation of many non-government groups in implementing this National Environmental Action Plan is essential. A statutory basis will be given to the Non-Governmental Environmental Advisory Committee (NGEAC) in order to assure an official and continuing mechanism for gathering the ideas and opinions of a wide variety of Lesotho interests. Members of the NGEAC will be appointed by the Chairman of the NEC and will include representatives of the chiefs, local development councils, the university community, NGO's, and the private sector. The NEC Secretariat will facilitate the activities of the NGEAC which will be given the mandate to initiate proposals as well as to respond to governmental policies and programs.

5.5 Environmental Education and Awareness

Environmental education and awareness are fundamental to the implementation of environmental activities and sustainable use of renewable resources. This entails putting in place the various means necessary for providing skills and knowledge continuously to the many categories of people involved in implementing environmental programmes. What is needed now is to create a programme of on-going education and mobilize information to the people for development and sound use of natural resources. All age groups should be included: adults through pitsos, group meetings, literacy campaign materials, radio and newspaper articles; younger people through the more extensive inclusion of environment and development issues in school curricula, this being supported by school community-oriented conservation activities.

5.6 National Planning, Economic Diversification, and Environmental Management

A successful development strategy for the future of Lesotho will be one that restores and sustains the renewable natural resources on which the economy so much depends.

To-day we are witnessing a vicious circle of population pressure, poverty, food deficit and degradation of the environment. Faced with immediate needs and lack of resources (land, capital, skills) the urban and rural poor often can not afford to invest in technological solutions for long-term conservation measures.

The National Planning process will therefore seek the complementarities between strategies to help the poor and the small farmers, promote sound environmental management, and contribute to sustainable development. In the long term the promotion of economic development, protection of the environment and alleviation of

mutually supportive objectives.

erm, however, these objectives may not always be d conflicting choices may arise. In such situations ional and environmental planning that carefully mplications of alternative strategies will form the decisions that will provide for the most appropriate

l the government will build on the experience with the agement approach to ensure the full integration of considerations including natural resource management o-economical planning. Moreover, sector plans will be and consistency sought between national policies and l management actions at the national, district and s.

tion and land capability exercises are to be carried out ntry. These guide not only the direct use of natural but also the direction of population policy for funding balance between population and resource use.

promising foundation on which the NEC should attempt to rect assistance to the Ministry of Planning and planning hin operational ministries could usefully take the form NEC arranging for environmental training courses for staff.

should make its voice heard in the debate on ways of ng economic diversification which, directly or indirectly, duce pressure on the land and other natural resources. In ontext, it is to be noted that the national priority of ing environmental quality, means that wherever possible, new rises which are complementary to the rural development , i.e.which either supply items needed as inputs to the rural my, or which use agricultural outputs as raw materials, should couraged.

POPULATION POLICY ISSUES

rapid growth of population is not in itself an environmental blem, but is a fundamental underlying cause of the pressure on ources, which, in turn, is resulting in increasingly severe ironmental degradation. Although the country's population owth rate if 2.7 percent per annum is not as high as in many her African countries, the limited land base and other resources e not enough to cope with the rate of growth, and it is highly nlikely that agricultural production can e stepped up to a level hat can sustain the growing population. The general economic growth rate of the country is also not able to keep pace with population growth, resulting in not only less food per capita but also fewer job-opportunities for potential job seekers.

demographic structure of the population and limited land base in Lesotho make it imperative that non-farm jobs continue to be created in sufficient number to ensure a steady increase in living standards for the rural population.

It is therefore prudent also to consider other factors which may be effective in putting the country on to a sustainable development path. But such strategies must not lose sight of the reduction in the population growth rate as a pre-requisite.

Furthermore, if the population growth rate remains unchecked, the scarce available resources will be utilized mainly in seeking to satisfy the most basic needs instead of providing for improvements in the standards of living and economic development.

Since population growth is a factor of fertility and mortality, consideration of population issues should especially include fertility, which affects the health status of both mothers and children and their chances of survival, and sustainance of quality of life.

At the Environment and Development Conference, it was evident that not all of the representatives from the rural areas shared this perception of the implications of the present rate of population growth. Some participants seemed to assume that economic growth can readily be adapted to accommodate any increase in number of job-seekers in non-agricultural employment, while the measures identified to restore the land and revitalise agriculture will serve to increase standards of living in the rural areas. The contrary view is based on a realistic appraisal of the extent of environmental degradation and the very limited prospects for rapid growth occurring in other sectors, even if optimistic assumptions are made about Lesotho's relations with the outside world. In view of this difference of opinion, policy making in this area needs to be given careful attention.

The Ministry of Health is of the opinion that a coordinating council for all population activities should be established. The NEC could well take the lead in bringing this about. Besides the Ministry of Health and NGO's such as the Lesotho Planned Parenthood Association (LPPA), the initial membership should include the Ministries of Agriculture; Interior, Chieftainship Affairs and Rural Development; Youth and Women's Affairs; Employment, Social Security and Pensions; Education; Planning, Economic Affairs and Manpower Development.

5.8 Special Needs of Women

The women of Lesotho face the special problems engendered by the unusually high proportion of men working in South Africa. When the men return on leave, they do not wish to be working, and thus make less of a contribution to the development of their home areas than the women feel they should and the country urgently requires. Women's continued legal status as minors has negative results in terms of the decisions which need to be taken to develop the country, but which tend to be delayed until the men return to give their consent.

In view of the wide ranging implications of the cultural and social attitude to women not only for the women themselves but for the society as a whole, it is recommended that the NEC work towards the strengthening of Government and non-government agencies working with and for women. Despite the advances that have been made and the number of women who now hold significant positions of responsibility, the NEC should consider commissioning a comprehensive study to examine and recommend on changes in legal and institutional structures which would bring about more widespread changes in the lot of women while being accepted by men. In particular, land tenure rights for women should be scrutinised, in view of the bearing this issue has on development and the environment.

5.9 Involvement of Non-Government Organisations

It is widely recognised that in rural development and conservation of natural resources, NGOs can play an extremely important complementary role to that of central and local government. In particular, people's organisations, reflecting their own felt needs, such as farmers' groups, workers' organisations, women's groups, adult education groups and business peoples' organisations have been and will continue to be the focal points for action on the ground. In addition, all other development oriented voluntary organisations should also be encouraged. The NEC should play an active role in mobilizing and working with all these NGO's, particularly in the NGEAC. The NEC should:

a) explore the potential role of NGO's in the implementation of environmental programmes;

b) draw upon the experience and expertise of NGO's to develop the skills needed for environmental activities at local level;

c) gain the ability of NGO's to use participatory approaches; and

d) identify the constraints and opportunities and provide for the incentives necessary to make NGO's more effective.

5.10 Environmental Impact Assessments

While there are some "informal" environmental impact assessment (EIA) methodologies currently practiced, the Highlands Water Project is the first project in Lesotho to have been subjected to a specified, explicit EIA process. This large project adds to the urgency for creating a new environmental institution. It is recommended that a formal requirement be established to ensure that EIA becomes an integral component of all economic feasibility studies of projects which will have a significant effect on the environment. The responsibility for seeing that EIAs are conducted satisfactorily should be assumed by the NECS, while the national institutions which are to carry out such investigations should be strengthened. For projects and programmes where a formal EIA would not be justified, NECS should nonetheless ensure that environmental factors have been adequately taken into account. EIA should not be regarded as delaying or diverting development; indeed this assessment information often reveals new opportunities for economic growth while protecting the renewable resource base and environmental quality.

5.11 Environmental Legislation

While there is a series of existing laws relating to the environment (Annex 1), these have developed individually over the past century in response to specific perceived needs. Consequently, there is some degree of overlap and inconsistency, and there are many areas of environmental concern which are not addressed by existing laws. In order to deal effectively with the environmental and natural resource issues facing Lesotho today, the nation requires a comprehensive environmental legislative framework.

The NEC should initiate a comprehensive review of the legal needs of the nation for environmental management and protection, and on the basis of that, develop a comprehensive framework of environmental legislation. The first step would be to carry out a national inventory of existing legislative texts, including regulations, and the administrative machinery in force, making a checklist and matrix for the classification of all the sub-categories of environmental and natural resource related law. This should be followed by a careful study of the problem areas identified on a case by case basis, with a view to identifying and filling in gaps, removing overlapping and conflicting provisions and updating the laws to respond to the socio-economic needs of the present and the future. Laws should be designed to promote sustainable use of natural resources, rather than just seeking to offset damage already done to the environment. It should be recognized that many laws impact the environment, even though they do not specifically address environment or resources.

Following from this, the enactment of a "framework" or "umbrella"

law will be necessary. Such a law would, inter alia:

- provide a legal basis for the NEC, NECS and NGEAC, particularly assuring adequate authority for the needed coordination functions.

- identify the objectives of the legislation

- specify the institutional framework for the formulation, implementation and monitoring of environmental legislation and regulations frame thereunder

- include provisions for the delegation of rule-making powers to local authorities

- contain provisions regarding the enforcement of legislation and regulations, including penalties for non-compliance

- set out procedures for the approval of any activity which may be deemed to have an environmental impact

It must be stressed, however, that although legislation is necessary, it is neither a panacea nor sufficient of itself to create and sustain environmentally sound plans, projects and national development. The success of any legislation depends on its implementation. Such implementation, in turn, depends both on an effective governmental structure and most particularly, on the public's acceptance, which is the consequence of their participation and the realization that the legislation reflects people's needs and aspirations.

CHAPTER 6

SPECIFIC ENVIRONMENTAL ACTIONS

6.1 Reclamation and Sustainable use of Rangeland

6.1.1 Existing Policy Elements

The main agreed policy objective for livestock and rangeland management (see section 4.2 and 4.3) are the following:

1. To enhance resource management through:

   - the development of an appropriate structure of economic incentives;

   - the development of Grazing Associations and the reinforcement of existing institutions;

   - the implementation of the National Adjudication Programme.

2. To improve livestock productivity through:

   - the promotion of intensive livestock production in the lowlands;

   - the promotion of extensive livestock production in the highlands;

   - the education in better management practices of farmers, herdboys and animal production extension officers;

   - the promotion of appropriate stocking levels.

3. To improve livestock marketing through:

   - the involvement of the private sector in marketing and ancilliary operations;

   - the greater frequency and reliability of sales;

   - strengthening of marketing organization, including the development of export channels for livestock products.

4. To facilitate the development of other investment and employment opportunities in the rural economy.

Each of these policy objectives recognises and responds to the underlying causes of range degradation discussed in 3.1.1.

6.1.2 Action required to meet these objectives

The specific actions required to meet each of these policy objectives should include the following:

A. Stocking Rates:

Overstocking is currently the greatest single source of environmental concern in Lesotho. It also impinges on every aspect of rural development.

Since available rangeland is currently being reduced through the commitment of land to other uses such as woodlots, village expansion, cropland, and dams, without any concomitant reduction in livestock numbers, the problem will get worse before it gets better.

The solution to overstocking will require the coordinated effort of all the Divisions of the Ministry of Agriculture, as well as government ministries. It is recommended that additional effort be given to improving such coordination in the terms of reference drawn up for the NEC, and to reach agreement with donors on a coordinated approach to achieve the above programme.

Since a reduction in stocking levels will mean some reallocation of resources from the Livestock section, it is important that a broad based approach be adopted to the creation of alternative opportunities, whether in the highlands or elsewhere in Lesotho.

The Range Management Division should set target stocking rates and livestock management programmes, on an area by area basis, in conjunction with Chieftainship Affairs in the Ministry of the Interior, and after full local consultation. These should be subject to periodic review, and should provide basic data for actions to achieve each of the policy objectives.

B. Enhanced Resource Management

1. The Ministries of Agriculture and the Interior should jointly institute and administer a system of grazing fees. Initially, a fixed grazing fee (for large and small grazing animal respectively) should be levied on livestock owners, to encourage them to take account of the costs of grazing communally owned lands. The funds generated should be collected by the Village Development Councils and used for local development projects, for the maintenance of existing livestock development facilities, and for the administrative costs of the programme.

2. The Range Management division should implement a procedure of on-going consultation with District Development Councils, chiefs and farmers/livestock owners to include them in the analysis of

rangeland conditions and the development of the new programmes.

3. The Range Management and Animal Production Divisions should give priority to forming Grazing Associations to administer the Range Management Areas, to undertake improved range and livestock management programmes, and to develop marketing facilities. Wherever possible Association should be established on contiguous blocks.

4. The Range Management Division should, with Chieftainship Affairs, implement a National Range Adjudication programme designed to inventory and recommend changes that should enhance the management of grazing areas. This will be in consultation with principal chiefs, village chiefs and livestock owners.

5. Transhumance movements should be studied and efforts made to phase it out whenever this will lead to improvements in range management.

6. In addition to the above, the full structure of agricultural incentives should be studied with a view to identifying those incentives which have beneficial or harmful effects on livestock and range management practices, to enable corrective measures to be taken where necessary.

7. The cost of animal draft is implicitly subsidized by the communal land tenure system. Financial incentives should be offered to develop alternative means of draft power, such incentives include the early termination of grazing fee examinations.

C. Improved Training and Extension:

1. The Ministry of Agriculture in conjunction with the Ministry of Education should further develop and implement effective and innovative public education measures, including radio broadcasts and changes in the school curricula, to deal with improved livestock and range management as well as the more general question of the health of the rural environment.

2. Given the limited human and financial resources available to the government, the Ministry of Agriculture should fix priorities in the allocation and training of extension officers. Highest priority should be given to these areas with greatest development potential, and of significant environmental concern. This implies that livestock extension staff, and other appropriate groups, should receive additional specialised training and be offered stronger technical and logistic support.

3. The Animal Production Division should provide specialised training programmes and extension services to livestock owners to give them the necessary expertise to carry out the improvements in the livestock management referred to, and to educate farmers on the use of trees for both fodder and soil conservation purposes.

4. To meet its long term training requireme Department of Livestock Service should continue to makethe services offered by regional and overseas traind research institutions.

5. The veterinary division of the Deparof Livestock Services should expand veterinary services to peach district with an adequately manned veterinary clinimal health monitoring at all border posts should be impro

D. Improved Livestock Marketing:

1. The development of livestock marketing in L is necessary to reduce overstocking. This is currently inh by the very high transaction costs that result from cumbersor bureaucratic sale procedures. These procedures should be stread as a matter of urgency by the LPMS working the LMP.
2. Tax incentives should be offered to encourhe return of private agents to marketing of livestock in Lesc

3. A national livestock marketing informatiodio programme should be introduced to stimulate increased offtak the national herd and flocks.

4. The Department of Livestock Services shouldpand saleyard facilities and improve transport capacities.

5. In order to increase offtake it will be nesary to open export channels. The existing facilities of the Nional Abattoir and Feedlot Complex should be upgraded and certifi for export to international markets. Other market outlets shouldie used for the export of live animals.

6. The improved marketing systems and procedures may initially require special measures to achieve the needed initial destocking, but these should not be put in place on their own. They must be undertaken as part of a package of incentives/disincentives to assure that stocking rates remain at the intended lower levels. The recommendations of the Livestock Marketing task force (1987), such as increasing support to local traders, ensuring availability of babeisi forms etc, should be implemented. An import embargo may also be needed.

Long term measures need also to be considered to provide marketing incentives (financial and institutional) for maintaining lower numbers of more economically profitable animals. Other policies to achieve the same objective should also be investigated e.g. reinforcement of the provision of tractors for ploughing in the lowlands, assistance in achieving increased yields of milk and the subsequent marketing of dairy products etc. Some of these may require more active collaboration with the private sector.

7. Provide alternative investment channels to encourage those with cash to put their money outside livestock.

8. Develop alternative employment for herdboys and others affected by reduced stocking rates.

6.2 Enhancing Soil Fertility and Productivity on Croplands

6.2.1 Existing Policy Elements

The main policy elements already in place (see Sections 4.2 and 4.3) are to:

- adapt land unsuited, but now being used, for cropping of maize and sorghum, to other crops, including fodder crops, or for grazing or for trees;

- encourage lease arrangements on croplands, where lessors have the knowledge, resources and commitment to safeguard and enhance the fertility of the soil;

- promote improved production techniques for all crops, but particularly in respect of intensive horticultural production;

- establish irrigation facilities at locations where these can make a significant contribution to increased output;

- increase access to credit, for example, through Lesotho Agricultural Development Bank, to provide the finance for the above.

6.2.2 Action Required

Reinforcing, or in some cases qualifying, this set of policies, the following action points, having direct relevance to environmental issues, should be added:

1. Improve procedures for on-going consultations with the District and Village Development Councils, chiefs and farmers, to assure that they are directly involved in analysing the problems and developing and implementing the needed actions.

2. Encourage the replenishment of soil fertility with dung and plant residue.

3. Adopt a land tenure framework and leasing arrangements which encourage land improvements rather than degradation, and maintain the ownership of such lands in the interests of equity

4. Base recommendations of crop suitabilities on the research undertaken at local level

5. Express Lesotho-tested research in a form that is understandable by land users

6. Expand on the existing community monitoring system for yields.

7. Conduct research into agro-forestry systems, tree planting and use of indigenous tree species.

8. Develop a consistent approach to agricultural development within government and between government and donors, having regard to the nature, social and economic structure of Lesotho's farming communities.

9. Develop a consistent approach to subsidies, prices and marketing infrastructure to encourage raised production and the maintenance of soil fertility. Government policy should continue to ensure that the returns received by basotho farmers for their products appropriately reflect market based prices.

10. Make tree planting and management an integral part of all extension and support services to farmers.

6.3 Overcoming Energy Scarcity

6.3.1 Existing Policy Elements

The main policy elements already in place (see Sections 4.4 and 4.5) are to:

- exploit energy sources which cause little or no environmental damage, such as hydropower and renewable energies;
- broaden the supply base through afforestation;
- promote energy conservation in urban and rural areas.

6.3.2 Action Required

Reinforcing this set of policies, the following action points, having direct relevance to environmental issues, should be added:

1. Expand resources available to the Forestry Division to achieve a far more rapid rate of coverage of the country. Encourage the planting of trees on buffer strips, around homes and schools, along roads and in dongas. Educate people about the importance of returning nutrients to the soil and therefore of using firewood in preference to dung or crop residues as fuel.

2. Research and development of alternative energy technologies for dissemination to rural and low income households and finance the adoption of promising options, such as biogas digesters, solar water heaters and efficient stoves.

3. Introduce energy conservation measures and improve awareness among domestic and industrial users.

4. Where possible and economically justified, introduce rural electrification through extensions of the grid or mini-hydro schemes.

5. To achieve the above, manpower training programmes will be required as well as improved coordination between Ministries, particularly Water and Energy, Agriculture and Industry and NGO's.

6.4 Achieving Afforestation

6.4.1 Existing Policy Elements

The main policy elements already in place (see Sections 4.4) are to:

- coordinate tree planting and afforestation at the community level;

- encourage tree planting that is closely tied to soil conservation (e.g., trees for windbreaks on marginal croplands, in dongas, etc);

6.4.2 Action Required

Reinforcing, or in some cases qualifying, this set of policies, the following action points, having direct relevance to environmental issues, should be added:

1. The government budget allocation should increasingly be used to encourage the direct participation of rural communities in the planting, tending and harvesting of trees to rehabilitate degraded land and provide fuel wood and other wood products. To accomplish this, a greater proportion of the budget should be used to provide forestry extension services to rural residents and to expand government nurseries to provide tree stock for distribution and planting by local communities.

2. Mobilise communities for tree planting campaigns, not only in woodlots but on buffer strips, around homes and schools, along roads and in dongas. Ensure that planting is followed up with adequate nurturing of the young trees.

3. Place considerable emphasis on tree planting as wind breaks on crop land and on hillsides to reduce soil erosion and along river banks and dongas to stabilize ecologically vulnerable soil conditions. The preferred implementation strategy is to work closely with community leaders and village residents and involve them directly with tree planting and community forest development initiatives. Pilot projects should be initiated to introduce multi-purpose tree varieties for use as grazing and soil protection along with continued emphasis on plating of community forests to provide fuel wood and other wood products which can also encourage the use of dung and crop residues to recondition and stabilize cropland soils.

4. Ascertain the ecological suitability of exotic species in different parts of the country, while seeking to use indigenous species wherever possible.

5. Inculcate the concept of family and community forestry by adapting practices successfully followed in other countries such as Israel, China and Japan which encourage tree planting to commemorate family events. Building on local customs, traditional initiation schools should include as part of their final ceremony the planting of trees for the community woodlot or forest. it is suggested that a minimum of 1,000 trees be planted annually by each initiation school in this manner with trees supplied by the Forestry Division of the MOA.

6. Formulate a comprehensive National Forestry Policy.

6.5 Population Considerations

Lesotho does not have a formal population policy at present, nor governmental structure for dealing with population issues outside of the Ministry of Health. As described in section 5.7 above, the NEC should, as a matter of priority, take the lead in achieving implementation of the Ministry of Health's recommendations to establish a Population Council. This Council would coordinate the country's population activities, and initially it should consider the following list of specific action points:

1. While recognising the high value placed by society on children, the Government needs to put strong political backing to the formulation of a population policy.

2. An extensive programme of family planning education, involving rural health workers, the schools and the media, should be launched. Building on the awareness generated by the Environment and Development Conference, these programmes should present economic as well as health reasons for family planning. Encouragement should be given to going beyond prolonged spacing

between children to planning to have smaller families. Groups skeptical about family planning, including the church, should be encouraged to change their position on birth control measures.

3. A national forum, involving all the districts as well as Government agencies and all interested parties, should be called to discuss and agree on a National Population Policy. This would have to be clearly oriented towards the people and not be addressed to the "external" community, as has tended to be the case in the past.

4. Family planning is already an integral part of Ministry of Health services. One of the chief constraints at present, however, is a severe staff shortage to train health workers, not only in family planning but all aspects of family health. Once staff has been made available, established training procedures can rapidly be put into effect.

5. The Council should undertake a survey of projects and programmes which support the implementation of population policies, with a view to supporting relevant projects and programmes.

6. For women, family planning should continue to be provided as an integral part of maternal and child health services. Special programmes geared at men, including mineworkers, should be developed, with education possibly being combined with community based distribution of condoms. Such a programme would also be justified on grounds of containing sexually transmitted diseases.

7. The importance of women's groups to promote family planning should be recognised.

6.6 Maintaining and Enhancing Biological Diversity and Protecting Historical Monuments and Relics

The government agency responsible, the Ministry of Agriculture, intends during the current Plan period to develop Thaba-Bosiu, Sehlabathebe National Park, parts of Qeme Plateau and Ongeluksneck and several sites having bushman paintings and dinosaur footprints (see Sections 4.6).

Government is aware of the urgent need for reinforcement of its capabilities in this area. The following points are highlighted for action:

1. Institute surveys and inventory-taking by experts of the current status of the natural and cultural heritage of Lesotho. Particular attention should be paid to threatened species and to the question of the reintroduction of indigenous species now extinct in the Kingdom. Areas which could become national parks should be identified, particularly those which would encompass both

threatened plant species and historical relics or monuments.

2. Immediately secure all currently gazetted areas and sites through the deployment of wardens or guards as appropriate. Subsequently increase the protective forces and equipment to meet the security requirements of all conservation areas and sites resulting from the recommendations of the surveys of the previous paragraph.

3. Enact the proposed conservation legislation, the "Lesotho National Parks and Nature Conservation Act", which was drafted in October 1978 by the National Parks Administration in cooperation with the subcommittee on legislation of the National Parks Advisory Committee. Secure wildlife areas by law. Revise the law (Proclamation No.36 of 1969) protecting historical monuments and relics.

Devise instruments for implementing existing legal regulations to ensure that the instruments are effective. Examples here would include renewable use of some plants for medicinal purposes by doctors and penalty charges to anyone who destroys or mutilates, in any form, biological species which have been classified as endangered. The list of such species must be made widely known throughout the country.

4. Implement a training programme for present and future wardens and rangers. An experienced wildlife warden/ administrator should be recruited internationally to work with the Directorate for a reasonable period.

5. Initiate an educational programme to enhance public relations and raise public awareness. The status of wildlife, etc., as an essential part of national and international heritage should be emphasized, particularly in school curricula. Extension officers should be deployed in each district to promote public awareness and education on an on-going basis.

6. The development sector in which economic returns are most directly dependent on the quality of the environment is tourism. Consequently, the Wildlife Conservation section of the Ministry of Agriculture should be relocated to the Ministry of Tourism and the name of the Ministry should be changed to Ministry of Tourism, Wildlife, Sports and Culture.

7. Establish a Biological Research Institute to work in liaison with existing national and international research centres.

6.7 Countering Soil Erosion

As mentioned in Section 4.4, the emphasis in soil conservation policy has shifted from structural to biological control measures.

Most of the policy measures and action points identified in Sections 6.1 to 6.5 have a bearing on countering soil erosion. The points below serve to summarise and reinforce the main actions required:

1. Implement the actions listed for range improvement, increasing soil fertility, overcoming energy scarcity and increasing the growth of tree and other plant species in particular those aimed at:

- reducing overgrazing;
- increasing vegetation cover;
- planting trees, particularly in catchment areas and on bare hills;
- enhancing the variety of indigenous plant life;
- restoring the fertility and regenerative capabilities fo the soil.

2. Obtain statistically reliable quantitative data on the status quo concerning the above areas, and identify and examine alternative action proposals. Special encouragement should be given to measures which have multiple benefits such as intercropping, stall-feeding of lowland livestock etc.

3. Where beneficial, implement structural measures to arrest specific incidences of soil erosion, e.g. filling in of dongas in certain areas where this could obviate widespread further erosion; the building of terraces, water diversions, waterways, etc.

4. Encourage the more extensive adoption of conservation tillage techniques.

5. Encourage the proper management of eroded fields and marginal lands, e.g., through planting of perennial fodder and trees.

6. Involve people at the grass roots i.e. at the level of land users in the making of decisions on what anti-erosion measures they deem appropriate and in the implementation of those measures. In particular, this should involve:

- pitsos for decision making
- matsema for implementation

7. Discourage the cutting of shrubs and trees in ecologically vulnerable areas by implementing extension education campaigns supported by effective legal constraints where practical.

8. Require private sector firms engaged in mining or other commercial activities which results in leaving land exposed to erosion, to restore it to an environmentally sound condition.

6.8 Water Management

1. The Highlands Water Project will be a major factor in the economic development of Lesotho for decades. It will also have major environmental impacts in terms of roads, relocation of people, new opportunities for tourism and recreation in addition to the effects of the engineering structures. The EIA for the first phase of this project will provide training for Basotho officials as well as serve as a local example of this form of management information. Therefore maximum participation of all relevant agencies in the EIA is recommended.

2. There is a need to speed up an inventory of water needs and resources and to formulate from this a national water development masterplan. The plan should not be restricted to domestic water needs, but provide for use of water for irrigation, industry, construction, and hydro-electric power generation.

6.9 Land Management including Control of Urban and Rural Settlements

The Department of Lands, Surveys and Physical Planning and the Institute of Land Use Planning do not have sufficient manpower and resources to begin tackling effectively the long recognised problems arising from the proliferation of unplanned urban settlements. To reinforce the orientation of the Department, the following action points, having direct relevance to environmental issues, are noted:

1. The report of the Land Policy Review Commission can be the basis of a national debate on land tenure issues. One particular item for discussion is whether land should be treated as a national asset ie whether economic efficiency should be a requirement for land holding, this implying that access to land not being properly used would be transferred to another household, a policy which the Ministry of Agriculture is now examining. Following a thorough debate on this and related issues, Government should draw up a clear policy on land and land tenure and publicise this widely in the country in order to achieve public awareness.

2. As part of the implementation of livestock policy by the Ministry of Agriculture, hold widespread consultations with rural communities on land utilisation for grazing and for croplands. (see 6.1 and 6.2 above). Hold corresponding discussions with households which have migrated to urban areas.

3. Complete the drawing up of comprehensive rural land use plans and a National Settlement Strategy, incorporating the perspectives which emerge from consulting the people. Wherever possible, rather than move households occupying or using land which would be better suited to an alternative use, try to gradually change the land use patterns, adapting technically sound solutions to the views and needs of the people affected.

4. Put into effect existing legislation on rural and urban land use and physical planning, modifying and expanding laws if necessary. Require development project documents to give explicit attention to land tenure questions.

5 Offer training in the relevant disciplines both for central government officials and for chiefs and local development council members.

6.10 Urban Management and Establishment of Local Authorities

With the formation of the Maseru Town Council, the basis is being laid for effective urban management throughout Lesotho. The following action points, having direct relevance to environmental issues, should be noted under this heading:

1. Reinforce urban planning machinery to produce urban plans that are relevant to the country. Involve the local people in planning and management. Central Government should assist in setting up democratically elected town councils, drawing on the experience of establishing the Maseru Town Council.

2. Promulgate relevant urban management regulations including anti-pollution laws and town planning regulations. Establish plot layouts for urban areas to facilitate future provision of services.

3. Initiate programmes to provide and improve urban infrastructure (e.g. water reticulation, ventilated improved privy sanitation; rubbish, beer can and scrap metal disposal).

4. Promote programmes to encourage adoption of appropriate, minimal polluting energy sources, e.g. improved coal stoves in preference to open fires.

5. Provide necessary services from the Housing Department in the Ministry of Interior to the Lesotho Housing and Land Corporation.

6.11 Proper Use and Disposal of Hazardous Chemicals

Relatively little has been done about this issue in Lesotho, although Government is well aware of the need for action to be

taken. The following steps are recommended:

1. Draw up an inventory of chemicals presently in use in Lesotho, identifying dangerous and undesirable substances.

2. Establish guidelines for use or, if necessary, restrictions on the use of certain chemicals.

3. Disseminate information to the community on the dangers of chemicals in use, the new guidelines and regulations, and how best to make use of difficult chemical substances, dispose of containers, etc.

4. Encourage research and dissemination of information on Integrated Pest Management techniques.

5. Contact international bodies such as UNEP, WHO, and the OECD for information on the international transfer of hazardous chemicals and hazardous wastes.

ANNEX 1: EXISTING ENVIRONMENTAL AND LAND USE LEGISLATION

1. Bees Protection Act No. 9 of 1869

2. Wild Birds Proclamation No. 43 of 1914

3. Locust Destruction Proclamation No. 3 of 1925

4. Uranium & Thorium Control Proclamation No. 6 of 1946

5. Game Protection Proclamation No. 33 of 1951

6. Historical Monuments, No. 41 of 1967
   Relics, Fauna and Flora Act

7. Mining Rights Act No. 43 of 1967

8. Land (Procedure) Act 1967

9. Deeds Registry Act 1967

10. Weed Eradication Act No. 18 of 1969

11. Land Husbandry Act 1969

12. Public Health Order No. 12 of 1970

13. Liremo Control No. 23 of 1970

14. Development Projects Order No. 9 of 1973

    (a) Thaba Bosiu Rural Development Project, Legal Notice 11/73

    (b) Training for Self-Reliance Project, Government Notice 109/74

    (c) Khomokhoana Project, Legal Notice 43/75

    (d) Phuthiatsana Project, Legal Notice 11/77

    (e) Southern Perimeter Road Project, Legal Notice 16/81

15. Land Act 1973

16. National Parks Act No. 11 of 1975

17. Aviation Act No. 32 of 1975

18.Forestry Act No. 11 of 1978

19.Water Resources Act No. 22 of 1978

20.Administration of Land Act 1979

21.Husbandry Act 1979

22.Town & Country Planning Act No. 11 of 1980

23.Range Management & Grazing Control Regs. 1980 (amended 1986)