



Orange-Senqu River Basin

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Demonstration Project on Community Based Rangeland Management in Lesotho

Scoping Study

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UNDP-GEF
Orange-Senqu Strategic Action Programme

Demonstration Project on Community Based Rangeland Management in Lesotho

Scoping Report

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1. Background

1.1 Orange-Senqu Strategic Action Programme

The Orange-Senqu River riparian States (Botswana, Lesotho, Namibia and South Africa) are committed to jointly addressing threats to the shared water resources. This is reflected in bilateral and basin-wide agreements between the riparian States and led to the formation of the Orange-Senqu River Commission (ORASECOM) in 2000.

The 'Orange-Senqu Strategic Action Programme' Project supports ORASECOM in developing a basin-wide plan for the management and development of water resources, based on integrated water resources management (IWRM) principles. The Project will finalise the preliminary Trans-boundary Diagnostic Analysis (TDA). This final TDA will serve as the scientific basis for developing an agreed set of interventions under the framework of a basin-wide Strategic Action Programme (SAP) and associated National Action Plans (NAPs) in the riparian States. In addition, Demonstration Projects shall focus on:

- Community based rangeland management, with sites in Botswana and Lesotho;
- Environmental flows for the Fish River in Namibia and the Orange Mouth, shared by Namibia and South Africa; and
- Water resources management in the irrigation sector, with sites in Namibia and South Africa.

1.2 Rationale

Land degradation due to human activity is a critical trans-boundary concern in the Orange-Senqu River Basin, and particularly so in the catchment of the Senqu in Lesotho, which contributes nearly half of the Basin's surface runoff. Grazing on marginal grasslands, especially on steep slopes in Lesotho's mountainous highlands causes irreversible degradation of the vegetation and large-scale erosion. Remedying unsustainable management practices is a crucial step in improving conditions.

The Demonstration Project on community based rangeland management shall empower local communities to address landscape degradation resulting from overstocking and overgrazing by implementing locally designed measures. The Demonstration Project will rely on indigenous knowledge and understanding of the challenges of rangeland degradation, the importance of rangelands in traditional culture, and the awareness of degraded conditions, while also expanding alternate economic opportunities for communities. The wealth of experience gained from past rangeland initiatives and projects shall be duly recognised and built upon. More specifically, the Demonstration Project shall:

- Be consistent with broader Government policies and (ongoing) initiatives in Lesotho, but not a simple extension of ongoing work and so run the risk of being subsumed by it;

- Explore the nexus between poverty and environmental degradation, by targeting disadvantaged and vulnerable communities;
- Be set within a viable institutional framework and realistically attainable within the timescale and allocated budget;
- Focus upon rangeland management, but also explore alternative income sources; and
- Establish community based monitoring methodologies and management approaches that are replicable in other parts of the Basin.

1.3 Opportunities for collaboration

There are various opportunities for collaboration between the Demonstration Project and other recently started or soon-to-start initiatives. They include inter alia:

UNDP-GEF funded Sustainable Land Management Project

The Ministry of Forestry and Land Reclamation, Lesotho together with the UNDP Country Office Lesotho implements the ‘Capacity Building and Knowledge Management of Sustainable Land Management in Lesotho’ project (SLM Project). This four year project started in early 2010, and includes contributions from GEF amounting to some USD 1.7 million. The project will work in three thematic areas:

- Participatory models and techniques: Further develop replicable models and techniques that successfully overcome current institutional and governance barriers to sustainable land management.
- Capacity development: Improve local and national capacity for adapting and scaling up proven SLM models.
- Policy environment: Enhance awareness, dialogue, understanding and analysis of SLM best practice at resource user, community, local government, NGO and national government levels, to be reflected in the relevant policies, strategies and programmes..

Initial discussions with the Ministry and the implementation unit of the SLM Project led to the understanding that the SLM Project and the Demonstration Project under the Orange-Senqu Strategic Action Programme would be complementary in their approaches, where:

- The SLM Project was to work under the guidance of the Ministry from the District Councils to the Grazing Management Associations (GMAs) and then to the Grazing Committees; and
- The Demonstration Project would work the other way, from community formed Grazing Committees or Trusts, upwards – on the understanding of course that the GMAs, District Councils and Chiefs were all essential stakeholders. It would, however, be a more ‘bottom up’ approach, focusing on tangible improvements on the ground, and possibly facilitated/implemented by an NGO.

The project works in seven mountainous Community Councils in Maseru District, namely Nyakosoba, Likalaneng, Makolopetsane, Telle, Semonkong, Makheka and Ribaneng.

The United States Agency for International Development (USAID) funded 'Identifying climate change adaptation strategies and building capacity for adaptation in the Lesotho Highlands Mountain Catchments to improve the resilience of livelihoods and to sustain the ecosystem services functioning for the production of water.'

Under the framework of Lesotho's National Adaptation Programme of Action on Climate Change (2007), this project shall tackle the inability of communities in the mountain zones of Lesotho to adapt to climate change, which not only threatens their own livelihoods, but also the water yield from the catchments sustaining the Lesotho Highlands Water Project (LHWP).

The aim of this project is to build capacities of local communities, NGO networks and government departments in order to understand and adapt to the likely impacts of climate change in the mountain catchment areas. The initiative plans to achieve this by tackling the interrelated issues of poverty, environmental degradation and biodiversity loss. The two primary activity lines of the project are:

- Identify and implement interventions for adapting rangeland and catchment management by communities in the mountain zones in response to climate change scenarios to address environmental degradation and improving the resilience of local livelihoods.
- Build adaptation capacity at community, NGO network, and local and national government levels to respond to the impacts of climate change.

This project will be undertaken in four pilot catchment areas that have been identified by LHDA for piloting integrated catchment management:

- 'Muela catchment;
- Setibi-Mamohau (Katse catchment);
- Makopela-Mpeako (Katse catchment);
- Ts'iu-Koporale (Mohale catchment).

The project's duration is three years; it started in early 2011.

A potential collaboration between the Demonstration Project and this initiative could be sought at the field level.

2. Rangeland management in Lesotho

2.1 Physical geography and social context

Lesotho has a land area of 30,340km² and a population of 1.9 million in 2006 (census figure), estimated to be 2.1 million in 2009 (EIU, 2009). Three main geographical zones are often recognised: the lowlands (12%), foothills (22%) and mountains (66%). The lowlands form a strip of land 3 to 48km wide which runs the entire length of the country along its western border with South Africa, and range from 1,500 to 1,800m above sea level (masl). Although they comprise only 33% of the national territory, the lowlands are home to 80% of the population. The mountains range from 2,200 to 3,482masl, and while increasingly settled are mostly used for summer grazing. In between are the foothills, which are also densely settled and comprise plateau areas broken by montane spurs and river valleys (Bawden and Carroll, 1968). The entire country of Lesotho falls within the Orange River Basin, and contributes in excess of 40% of the basin's mean annual runoff.

The climate of Lesotho is mostly sub-humid and varies from semi-arid to humid, the average annual rainfall is 737mm but it is spatially and temporally highly variable. The rainfall pattern exhibits two seasons: the dry winter season, between May and August, and the wet summer season, between September and April. Temperature fluctuations are high and range from -5 to 36°C. Drought is endemic.

Lesotho is a grassland country and there is an almost complete absence of natural tree growth, which Acocks (1953) attributed to the dry and frosty conditions, but others regard as a 'fire sub-climax' (Bawden and Carroll, 1968). Decades of heavy stocking and veld fires have resulted in extensive areas of grassland becoming encroached with unpalatable Karroid shrubs (namely, *Chrysocoma tenuifolia* and *Aster fillifolius*) and visible degradation of the less resilient habitats has occurred (e.g. mountain wetlands and hillslopes). Most of the large mammals of Lesotho were eliminated over a century ago, although a few antelope species survive in protected and isolated areas (ORASECOM, 2009). Less than one per cent of Lesotho is protected, with two transfrontier initiatives with South Africa underway, the Maloti-Drakensberg Transfrontier Conservation and Development Area Programme and the Letšeng-la-Letsie Wetlands Protected Area in southern Lesotho.

The number of Basotho employed in South African mines fell from a high of 127,000 in 1989 to a low of 47,000 in 2005, mainly because of the declining profitability of gold mines, which absorb around 80% of Basotho migrants (EIU, 2009). The latter reports that since then a recovery in gold prices have led to 54,000 Basotho employed in 2007. Such a major retrenchment seems likely to drive some of the population back into traditional agricultural activities and particularly beef production (Agrer, 1999), although this has not translated into improved agricultural production or management.

2.2 Institutional context

For most of its history since independence in 1966, Lesotho has been a constitutional monarchy with a conventional, largely centralised administrative system of Ministries represented in a Cabinet. Many local government functions were fulfilled from independence until 2005 by the network of chiefs and headmen. These traditional authorities were responsible for land administration, receiving applications and allocating rights on joint behalf of the King and the Commissioner of Lands, a civil servant in the Ministry of Interior (now Ministry of Local Government). They were also responsible for allocation and revocation of land and grazing rights, and other natural resources management issues.

In central government, the Ministry of Agriculture has been responsible for most natural resource management activities through much of independent Lesotho's history. It established a Range Management Division (RMD) in 1979. In 2003 a new Ministry of Forestry and Land Reclamation (MoFLR) was established, comprising several sections of the Ministry of Agriculture and Food Security (MoAFS). These include the Range Resources Management Department, the Department of Forestry and the Department of Soil and Water Conservation. MoFLR now has leading technical responsibility for community based natural resources management.

A number of other ministries and agencies of the Lesotho Government have environmental responsibilities. The Department of Nature Conservation was initially also under the new MoFLR but was subsequently moved to the Ministry of Tourism, Environment and Culture (MTEC) as a division of the National Environment Secretariat (NES). The Ministry of Natural Resources co-ordinates the energy, water and minerals sectors. Its responsibilities include participation in ORASECOM and the Lesotho Highlands Water Project, and respectively the Lesotho Highlands Development Authority (LHDA).

Significant land reforms were introduced through the 'Range Management and Grazing Control Regulations No. 39 of 1980 which removed the powers of allocation of the traditional authorities and vested them into community based institutions such as Grazing Associations (GAs) that had clearly defined and exclusive rights to delimited Range Management Areas (RMAs), with the chief as an ex officio chairman. This has caused tension between the modern State and the traditional authorities (Selebalo, 2001) and appears to have been implemented in a way that has maintained the existing rural social structure, preserving the power of the chiefs and other rural elites (Johnston, 1996).

Several bilateral ICP projects and non-governmental organizations (NGOs) focus on sustainable land use practices that can enhance the livelihoods of the poor, such as organic farming methods and the indigenous Machobane Farming System of year-round multi-cropping and risk aversion.

2.3 Poverty alleviation

In 2000, Lesotho formulated a long-term vision, Vision 2020, according to which, *“by the year 2020, Lesotho shall be a stable democracy where the principles of good governance will be anchored on the respect of human rights, the rule of law, political openness, political participation and tolerance. This form of governance will be based on five pillars of democracy which include: supremacy of the will of the people, transparency, a devoted and efficient public service, justice for all and efficient chieftainship.”*

The Vision 2020 includes among others issues relating to natural resource management and food production, as a way of alleviating poverty.

The first Poverty Reduction Strategy Paper (PRSP) for Lesotho, covering the period 2004/2005 – 2006/2007, outlines national priorities and strategies to reduce poverty and promote equitable economic growth. It states that Lesotho is facing a great challenge, as poverty and inequality have been rising over the past twenty or so years, despite GDP growth rates above the regional average. In response to that, the PRSP sets out how the government intends to focus its efforts on fighting poverty in the years ahead. The PRSP was based on a three-year consultative process involving stakeholders nationwide.

The PRSP process, together with Vision 2020, has generated the following list of nine key national priorities:

- The HIV/AIDS pandemic;
- Employment creation;
- Food security;
- Deepening governance, safety and security;
- Infrastructure development;
- Promoting access to quality essential health care and social services;
- Improving the quality of and access to education;
- Environmental conservation; and
- Improvement of public service delivery.

The PRSP acknowledges past difficulties in reducing poverty and delivering essential services, and stresses the need for certain shifts in planning and implementation. The PRSP also requires constant monitoring and development of greater capacity. The paper also recognizes the role of the private sector and civil society in the implementation of the strategy.

2.4 Crop farming

Only 13% of Lesotho’s total land is considered suitable for crop farming, albeit on soils of low fertility and significant erosion potential. The climate presents the triple hazard of variable rainfall, severe hail storms and frost, which together with the steep slopes and poor soils makes much of Lesotho marginal for the production of its traditional staples (maize, sorghum, wheat and beans).

GITEC (1983) reports a decline in the area under (terraced) cultivation in the mountains and parts of the Senqu River Valley. They report that the mix of crops has changed over time with the area of wheat declining more rapidly than the other two grain crops, maize and sorghum., which are grown in the lower areas with sunny aspects. Virtually all ploughing is by oxen, harvesting by hand, and threshing of small grain by trampling of oxen. The oxen are typically in poor condition when required to plough, gaining some sustenance from maize stover around the village but otherwise suffering from a dearth of available forage. Fodder crops are grown on a very limited and diminishing scale.

The constraints to production in the arable sector are many and include inadequate cultivation and weed control, poor seed varieties, inadequate attention to time of planting, poor harvesting techniques and threshing methods and a lack of marketing facilities (GITEC, 1983).

Irrigation does not offer any quick solution for increasing crop production. As the latter point out, the area of potentially irrigable land is limited, the winters are too cold for most field crops, the high silt loads of rivers contribute to short effective lives for irrigation structures and pumping equipment, and there is a likelihood of salt accumulation problems if irrigating from the Senqu River (GITEC, 1983).

Few arable cultivation projects of the past have met their objectives. GITEC (1983) highlights the following reasons that help explain this:

- Poor uptake by farmers outside the demonstration plot areas because of the low benefit to cost ratios of the cropping systems.
- Over-optimistic goals and acceptance rates by farmers and under-estimates of the hazards of farming, e.g. crop losses due to soil erosion.
- High costs required to construct physical earth works to control soil erosion in relation to benefit perceived by the farmer.
- The incorrect assumption that the bulk of the rural population were committed farmers who were looking for methods of investing additional resources and labour in more intensive farming systems.
- Although arable land competes with the available grazing land, the requirement of oxen for draught power and the dependence of livestock, especially those in the village areas, for winter crop residues, are such that farming in Lesotho should be looked upon as an integrated system of crop farming and range management.

2.5 Rangeland management

Livestock has traditionally played a major role in the economy and social life of Lesotho. This includes cattle, merino type sheep, angora (mohair) goats, pigs, poultry, fish, horses and donkeys. In addition, for Basotho herders in Lesotho cattle are a special kind of property, a form of social wealth that is not readily converted into money. Sheep and goats are the main source of agricultural exports,

namely in the form of wool and mohair. Cattle provide draught power, meat, dung (fuel) and milk, while the Basotho pony and donkey constitute important modes of transport.

The traditional system of animal husbandry has evolved around a well ordered pattern of transhumance between the lowlands (winter) and the mountain grazing areas (summer). Grazing rights were allocated by chiefs. Under customary law neither residence nor cultivation in the cattle post areas of mountain grazing is permitted. Typically livestock from more distant villages join local livestock in the move to mountain cattle posts for summer grazing. In principle sheep and goat flocks move up to the cattle posts after the completion of spring lambing near the villages, whereas cattle move up in the mid-summer after completion of cultivation. Stock return after the first falls of snow in April or May. However, due to grazing pressure in lower areas some sheep and goats are known to spend the whole year 'at post', and due to broadening cropping patterns some cattle never leave the villages at all.

There is little doubt that the rangelands of Lesotho are heavily stocked. Estimates as to the extent to which the stocking rates in Lesotho might exceed carrying capacity vary considerably from 75% (Motsamai *et al*, 2002) to almost 300% (Bowie and Frank, 2001). The resilience of the rangelands to withstand heavy stocking varies considerably both spatially and temporally, and also according to the stock concerned and the nature and duration of grazing. It is therefore important to recognise considerable heterogeneity in the susceptibility of Lesotho's pastures to range degradation. For example, erosion is often prevalent on the north-facing steep slopes where the soil tends to be shallow and poor, while SMEC (2008) reports that animal movement on gentler sloping mountain 'noses' and ridge lines results in significant range degradation. These areas used to move animals to the mountain pastures and back create multiple paths along the slope which function as water channels during heavy rain. Animal movement then loosens the soil, creating further erosion.

It is clear that any attempt to redress rangeland degradation must involve tangible benefits to the land users themselves. For example in Mokhotlong District Quinlan (1995) found that most stock-owners struggle perennially to increase their holdings with little benefit, due to the combined effects of economic constraints and bio-physical conditions for rearing livestock. His research suggests that 5 to 10% of livestock were lost each year through climatic hazards, 4 to 5% to predators, 2 to 4% from disease and 2% from theft; and that 5% were consumed (Quinlan, 1995). In addition, gross survival rates, that is the percentage which survive from birth to adulthood, ranged from 7 to 20% depending on the species of animal. Furthermore, stock-owners suffered enormous losses, usually once a decade, from climatic catastrophe (Quinlan, 1995). Against such odds livestock owners will clearly be reluctant to entertain the idea of reduced stocking rates, as this would effectively raise the costs associated with these respective forms of stock loss.

2.6 Invasives and exotics

Bitterkaroo (Bitterbos, *Chrysocoma ciliata*) is the most striking invasive shrub in the sub-alpine tributary valleys where people have built 'winter' grazing posts, as it is unable to survive in the alpine areas

(Quinlan, 1995). Bitterkaroo is a dense, rounded indigenous shrub, with needle shaped sticky leaves that are bitter to taste. It is a natural component of the vegetation but becomes invasive after sustained heavy grazing and poor land management— for example as in parts of the Karoo. It causes alopecia in lambs and kids and goats, whereby a toxin in the plant is passed in the milk to the offspring, causing hair loss, pneumonia, diarrhoea and death.

Many exotic weeds are horticultural species that have escaped from cultivation, with riparian habitats particularly vulnerable. Some species such as eucalyptus trees, were introduced deliberately to help solve the fuelwood/timber shortages, but now present a threat to ecosystem functioning, because they use greater amounts of water than the natural vegetation. The Prickly Pear cactus (*Opuntia* spp), a succulent shrub native to Central America and Mexico, was introduced into South Africa in the early 1700s (Richardson *et al*, 2000) and has spread to Lesotho from there.

There are three species of wattle that have been introduced into southern Africa from Australia, with all three, the black wattle (*Acacia mearnsii*), the silver wattle (*Acacia dealbata*) and the green wattle (*Acacia decurrens*) found in Lesotho. The first two are difficult to tell apart, but together with the green wattle once regarded as the panacea to a fuelwood shortage and a useful provider of shade and fodder, they have become serious invaders. The banks of the Senqu River and its tributaries are strikingly lined with wattle, which coppices easily and produce copious amounts of seeds that can remain dormant for over fifty years - with germination stimulated by fire. Biological control agents are currently being tried in South Africa, but meanwhile streams go dry or experience reduced flows as wattle aggressively outcompetes native species, and communities bemoan its very presence.

2.7 Climate change

Climate change scenarios for Lesotho predict warmer climatic conditions, lower precipitation in spring and summer, and higher precipitation in winter. This will have serious implications for agro-ecological conditions. These changes will significantly impact on the livelihoods of the vulnerable rural communities in Lesotho, particularly those in the mountain highlands. These impacts will also affect the ecosystem functioning and the goods and services generated by the environment, particularly water production.

In the year 2000 Lesotho's Ministry of Natural Resources produced a National Report on Climate Change based on vulnerability and adaptation assessments which were undertaken for different sectors. According to this report, climate change will affect the rangelands, including grasses, trees, herbaceous plants and fauna found on the rangelands. Some of the other points raised by the report were:

- Degradation of rangelands due to shrub encroachment as a result of overgrazing and a high incidence of fires.
- Degradation of arable land and rangelands is a major problem which results in soil loss from the rangelands of 23.4 million tons and 15.4 million tons from arable land, per annum.

- Palatable grasses are being replaced by invaders such as the Karoo shrub (*Chrysocoma ciliata*) which is the best indicator of rangeland deterioration. This deterioration would affect a total number of 1,375 plant species, 250 species of birds, 50 species of mammals and 30 species of amphibians and reptiles.
- High temperatures and low precipitation would affect the vegetation belts of the montane, sub-alpine and alpine areas of the country. The Afro-alpine swamps would lose their hydrological functions because of the effects of climate change, which could be exacerbated by heavy grazing pressure on rangelands.

The report recommends that adaptation measures would have to include:

- Detailed studies and research on Lesotho's vegetation.
- Environmentally friendly considerations when undertaking road construction, diamond mining and livestock husbandry in order to achieve sustainability of the rangelands and their habitats.
- Empowerment, training and advice of communities on the control and management of rangelands. This would have to be coupled with exploration and promotion of traditional knowledge on natural resource management practices.
- Maintenance of a monitoring system for climate change impacts on rangeland conditions including livestock.
- Involvement of stakeholders at all levels in the formulation and implementation of policies regarding the management of rangelands.
- Capacity building for the communities to understand and appreciate the impact of climate change on their livelihoods, which are sustained by rangeland ecosystems.
- Rearing of livestock that would withstand and adapt to climate change scenarios.
- Sustainable utilization of the headwaters of watersheds in order to protect wetlands. This would guarantee their hydrologic functions including a continuous availability of flora and fauna found in these delicate areas.
- Adaptation options should be based on grazing policies formulated to limit livestock in accordance with the carrying capacity of the rangelands.

Lesotho has called for assistance to ease livelihoods of communities who are subjected to greater challenges due to climate change (Lesotho National Adaptation Programme of Action on Climate Change, 2007). However, up to now implementation of adaptation options on the ground is rather slow.

2.8 Previous studies and rangeland management projects

A number of related studies and range management projects have been undertaken in Lesotho over the years, with varying degrees of success, these include *inter alia*:

F-GEF: Feasibility Study of the Protection of Orange-Senqu River Water Sources ('Sponges' Project)

A study under ORASECOM, funded by the French Global Environment Facility (F-GEF) established a GIS-based inventory of wetlands in Lesotho. The study looked at: (i) the hydrological dynamics of wetlands and tried to establish the trends in water retention capacity in the wetlands; (ii) erosion measurement; (iii) methodological approaches to rehabilitation & restoration of degraded wetlands; and (iv) approaches to alternative livelihood options for wetland users.

Ministry of Natural Resources through the Department of Water Affairs and MCC/USAID: Wetlands Restoration and Conservation Project

One initiative under the US funded Millennium Challenge Corporation (2009 to 2013) targets the restoration and conservation of wetlands. The project pilots restoration activities in three areas: (i) Khalong-la-Lithunya in Botha-Bothe; (ii) Koti-se-phola in Mokhotlong; and (iii) Letseng-la-Letsie in Quthing. The five year initiative will include the installation of hydro-met instrumentation at the sites, explore grazing regime changes, and shall come up with best practice approaches. It is expected that with the restoration of wetlands integrity, and surrounding catchments, the communities will benefit as they will have access to revived wetlands systems and their products, such as craft making grasses, forage for livestock leading to productivity, and possibly increase in tourism as aesthetic quality increases.

Ministry of Agriculture, Marketing and Cooperatives and USAID: Range Management Project

The Range Management Division under this Ministry (which ceased to exist in 2003) had a major USAID-funded Range Management Project going in several areas of the country. The project was however, mostly donor driven. When the donor pulled out, the project also folded as the government did not have the resources to continue. The project was based on the Range Management Area (RMA) system, which required farmers to become members. Farmers who were not members of the RMA were excluded from livestock grazing, which in turn caused conflicts.

Lesotho Highlands Development Authority: Integrated Catchment Management Project

The Lesotho Highlands Water Project (LHWP) involves the capture and storage of water in Lesotho's mountain highlands, and transfer of this water to South Africa with the latter paying royalties. Whereas the LHWP's primarily contributes to water security and economic development in South Africa., it also significantly contributes to the economy o Lesotho.

The Lesotho Highlands Development Authority (LHDA) has a strong interest in the environmental health of the catchments of the Malibatso, Matsoku and Senqunyane rivers that feed its Katse and Mohale reservoirs, as well as the 'Muela area around its hydropower plant and tail pond. It has therefore launched an Integrated Catchment Management (ICM) project for these areas, running from 2005 to 2010 with a budget of USD 3.1 million. Five Pilot Catchment Management Areas have been established in Thaba-Tseka district, and CBNRM planning and institution-building are being promoted in these areas in association with Community Councils.

UNDP-GEF: Conserving Mountain Biodiversity in Southern Lesotho

This GEF-UNDP funded project operated in the three southern districts of the country, viz. Mohale's Hoek, Quthing and Qacha's Nek. This project was housed within the National Environment Secretariat of the Ministry of Tourism, Environment and Culture. Although its main objective was biodiversity conservation through the establishment of a network of protected areas, it had a range management component. This entailed the establishment of Village Grazing Areas (VGAs) and assisting communities within the project area to manage their rangelands on a sustainable basis, mainly with a view to protecting and conserving important biodiversity within these rangelands. A few VGAs were established, notably in the Mohale's Hoek district, and the locals trained to manage them. However, with regard to the rangelands, the same problem of resentment arose as these again operated on a membership basis. The problem was never resolved.

World Bank – GEF: Maloti Drakensberg Transfrontier Conservation and Development Project

Funded by the GEF through the World Bank, the Maloti Drakensberg Transfrontier Conservation and Development Project (MDTP) operated in both Lesotho and South Africa. The GEF grant for the project totaled USD 15.25 million. Activities began in 2002 and came to an end in late 2007. MDTP has been stimulating enhanced community based natural resources management in the high mountain areas along Lesotho's eastern and southern borders from Qacha's Nek district to Butha-Butha district, taking into account the new roles and authority of the Community Councils. It promoted the reformulation of selected Grazing Associations as Managed Resource Associations (MRAs) that would bring together organized groups of resource users such as livestock owners, medicinal plant collectors and handicraft makers to manage natural resources on behalf of, and with the legal authority of, Community Councils. An envisaged follow-on initiative, to scale up some of the interventions of the MDTP, with a particular emphasis on SLM and community woodlots never materialised.

2.9 Lessons in rangeland management

Breaking the cycle of low investment input, low productivity and low output returns that farmers in Lesotho are locked into has been the objective of livestock development projects since the 1950s. The close relationship between arable cultivation and livestock keeping in Lesotho has meant that most projects, even when they start out purely in one sector, actually end up covering both and are

perhaps better characterised as rural development projects. However, a broad contrast can be made between the earlier projects that emphasised livestock as the critical resource, and the more recent initiatives that have shifted attention to the management of the grasslands themselves (Quinlan, 1995). Even so, virtually all livestock related projects over the last five decades have included elements of improved breeding and marketing arrangements for the stock and their products.

Although the experiences of grazing management associations have varied considerably over space and time, considerable progress has been made. A body of literature summarises critical factors affecting grazing management operations:

Improvement of range condition and productivity:

- Reseeding: Veld restoration projects should be initiated through reseeded with indigenous commercial grasses (*Eragrostis curvula*, *Digitaria eriantha* and *Cynodon dactylon* (*Mobla*)) and locally harvested seed/mulch, for example *Themeda triandra* (*Sebké*), *Festuca caprina* (*Letsiri*), *Eragrostis capensis* and *Heteropogon contortus*. Brush packing, using *Leucosidea sericea* (*cheche*), has potential as a veld restoration technique and also addresses bush eradication. Although reseeded features prominently as a range improvement technique, there appears to be very little follow up on their overall performance.
- Fodder banks: Grazing conditions are difficult in winter and nutrition is inadequate due to concentration on grazing around villages, with insufficient use made of crop by-products, home-produced fodder, and protein mineral licks (GITEC, 1983). The latter as well as Atkins (1985) and CNRM (1993) emphasise the importance of sown pastures and fodder crops. However, much can be done to improve on this.
- Improved breeding: Four decades of breed improvement, with the focus upon Merino wool sheep, Angora goats and Brown Swiss cattle, while correct, has failed to produce the desired results. Owners prefer other types of breeds, are typically unable to acquire improved males and when they do are unable to prevent them mating with poorer stock in other herds. This results in Lesotho's small stock exhibiting poor reproductive performance compared with those in neighbouring South Africa (GITEC, 1983).
- Animal health: Insufficient attention is paid to dipping, drenching and vaccinating of all classes of animals. Dipping and spraying facilities are not maintained adequately (GITEC, 1983).

Range management:

- Rotational grazing and stocking density: SMEC (2008) describe rangeland management in Lesotho as a rotational grazing system with three grazing periods/areas. Areas close to the villages are used during the autumn/winter whereas alpine areas are used during summer. General management principles include: (i) Animals cannot be allowed to roam freely. Hence different grazing areas need to be mapped. (ii) Stocking rates must be kept in line with the carrying capacity of the range and available fodder resources. (iii) The time animals stay at a grazing area must be controlled. A grazing period of 7-14 days is recommended, the range needs to be rested for the remainder of the season. (iv) To ensure better utilisation of the

range it is recommended that cattle and sheep be grazed together, in a ratio of 1 cattle to 5 sheep.

- Integrated Catchment Management Approach (ICM): The integrated catchment management (ICM) approach adopted by SMEC (2008) within the Lesotho Highlands Water Project covers the catchments of Katse (2,572km²), Mohale (930km²), Matsoku (660km²) and Muela (60km²). ICM entails: (i) A philosophy of natural resources management based upon a consideration of whole natural ecosystems and a recognition that systems respond to disturbance or utilisation as systems and not as individual isolated components. (ii) A process of engaging communities and government in a 'people-oriented' partnership to achieve better natural resources management at the local catchment level, and which takes account of the needs and aspirations of the communities. (iii) A strategy and management plan incorporating environmental, social and economic considerations, based on a set of development objectives which are identified jointly by the community and government.
- Fire management: The setting of veld fires is a criminal offence in Lesotho but the indiscriminate use of fire is widespread and a major challenge to effective grazing management. Burning is not advised to stimulate growth for early season grazing and may only be used to get rid of excess biomass, frequently before the first rain, a no grazing within 2 years of a burn should be observed (Tainton, 1999).
- Stock theft: Although an age-old practice it is increasing at an alarming rate. Stock theft could provide a major impetus to increased herding and stock management controls, and so a major impetus of farmers joining grazing management associations and the protection it may afford (Thulo and Rats'ele, 2001).

Wetlands:

- Wetlands information: Through the compilation of all available spatial data during the F-GEF Study it became evident that the details and quality of the information available as attributes and the metadata were limited and hinder an appropriate analysis of the wetlands conditions. Further field studies based on standardized inventory sheets would be useful. (F-GEF, 2008).
- Status of wetlands: Although wetlands show signs of erosion, the outflow water quality is good in terms of total dissolved solids, dissolved oxygen and pH. Livestock overgrazing and trampling and ice rats and moles are affecting the rate of erosion of the wetlands. According to Marneweck and Grundling (1999) cited in National Wetlands Management Programme (2005), the average water loss due to degradation is 36%. (F-GEF 2008).
- Management of wetlands: Proper management of wetlands rests on effective rotational grazing that allows the wetlands to rest. Proper grazing plans and implementation of these plans including physical inspection are crucial. The involvement of the Principal Chiefs, Local Government structures, herders and communities around the wetland areas in day to day management of the wetlands is important. This will require the development and implementation of strategies for periodic training and awareness-raising. To govern and guide wetland management it is necessary that a Wetlands Management Policy is formulated and enacted. (F-GEF 2008).

Marketing:

- Cattle: The national herd comprises a large number of old cows and oxen, which in combination with inadequate nutrition during the harsh winter months, results in high mortality and poor reproductive performance. The need to improve livestock markets is a common feature of all livestock development projects. Poor communication and infrastructure form a large part of the marketing problem, there are insufficient auction sales for live animals (GITEC, 1983).
- Small stock: Sheep and goat-owners struggle to realise the commercial value of their animals. The principal market is for wool and mohair, but there are restrictions on stock-owners' options to sell other products such as meat and skins (Ferguson, 1985). There are also bottlenecks in the wool and mohair system, such as non-removal of bales from wool-sheds, and excessive delays in payments (GITEC, 1983).

Alternative/supplementary income sources:

- Vegetable gardens, fruit trees: The risks of agricultural production seem to have prompted many rural households to maintain low-input methods. Fertiliser, water and improved storage facilities are required for intensive cropping of maize and for vegetable gardens. Fencing is essential in horticultural projects to stop destruction by livestock, and intensive horticultural and grain projects have high labour requirements. Few households seem able to bear both the cost and the risks involved.
- Wildlife, tourism and veld products: Despite the loss of its wildlife populations the mountain areas of Lesotho offer a potentially diverse array of tourism related activities, e.g. adventure tourism, walking, hiking, biking, birding, fishing etc. The development of income generating activities outside of the livestock sector would result in much needed economic diversification (Motsamai *et al*, 2002).

2.10 Recommendations

A few points have been noted out of this scoping exercise and should be taken forward into the design of the Demonstration Project:

- There does not seem to be any one system (or more) which is recommended or employed by the Department of Range Resources Management in Lesotho. In different parts of the country, livestock owners employ different systems, depending on how strong the area chief is. In some areas grazing in the rangelands is done on a "first come, first served" basis, while in others, it is the area chief who controls grazing. A "menu" containing several systems of rangeland management could be one way to go, with each item tried in a different part of the demonstration site, until one which seems to work is agreed upon.
- In any rangeland management project, the concerned community should be involved right from the onset of project identification and formulation, right through implementation so that they learn as much as possible during the course of the project. This will empower them to confidently own the project and assure its sustainability beyond external inputs.

- Training of communities on an on-going basis throughout the life of the project should be considered, again to get them ready to take over once the project is terminated.
- The question of conflict management must also be given serious consideration. Conflict can come in many different forms: between users of natural resources, as rangelands sometimes harbour a whole range of products, not only pasture grasses (e.g. thatching grass, medicinal plants, wild spinaches and others), and questions of access at different times of the year would have to be addressed, ideally by communities themselves.
- The different roles to be played by all stakeholders should be clarified right at the beginning. Channels of communication must also be established.
- Integration of other aspects of environmental management/protection (e.g. gully/donga reclamation, removal of invasive plant species and conservation of water resources) should be considered to go along with rangeland management.
- Although it can be a huge challenge, livestock owners sometimes keep animals of poor quality which are not very productive. A de-stocking programme could also be considered to go along with the rangeland management project. Farmers would be advised accordingly to de-stock poor quality animals. This would help to optimise rangeland utilisation.

3. Demonstration Project in Lesotho

3.1 Considered sites and issues

Based on discussions with Government agencies, ongoing projects in the sector and field visits five sites were considered:

- 1 Mount Moorosi;
- 2 Ketane/Qobong;
- 3 Semonkong;
- 4 Likalaneng;
- 5 Maphutšeng.



Figure 1: Considered sites for the Demonstration Project and community based rangeland management.

The issues considered at these sites included:

- likelihood of success and input of community for sustainability;
- potential for replication;
- current resources availability to the community;
- trends, challenges and conflicts existent in the area;
- potential for training local population to train others in neighbouring communities;
- inter-community tensions over resources, range land use and other issues;
- ethnic make-up as relevant;
- community leaders able and willing to accept responsibility for project implementation.

3.2 Mount Moorosi

Physical geography and environment

Mount Moorosi is in the foothills. At an altitude of less than 2,000m above sea level, Mount Moorosi Ward is about 50km from Quthing town, and is located along the Senqu River. A good tarred road leads all the way from Quthing to Mount Moorosi and beyond, making access to the area quite easy. Within the area itself the roads are rather rough, and during the rainy season could make access to certain points challenging.

Quite serious soil erosion can be observed at many sites, which no doubt is the result of the heavy overgrazing, coupled with inappropriate agricultural/farming practices. This soil erosion manifests itself in the form of gullies, which unless some rehabilitation work is started soon, will continue to grow, stripping the land of valuable soil. This, as well as the shortage of grazing lands, is indeed of great concern to the local communities. The situation is exacerbated by low and risky agricultural productivity due to erratic rainfall patterns.

Main agricultural activities

The main agricultural activities of all the four villages that make up Mount Moorosi include livestock rearing (cattle, sheep, goats, horses and donkeys, although small stock is predominant) and crop farming (maize, sorghum, wheat, potatoes, pulses and some fodder crops such as oats). There is some growing of fruit trees such as peaches, apples, plums and grape vines, although production could be enhanced with improved tree varieties and technical knowledge of the locals.

As far as livestock ownership is concerned, a FAO study (2008) indicated that almost every household in the area owns at least one type of livestock, although exact figures of total livestock numbers in the area were not available. However, for both large and small stock, there is very little good grazing in the area, as it has mostly been degraded due to overgrazing. The nearby Mokotjomela Mountain apparently used to offer excellent grazing, but due to overgrazing it is now heavily denuded and is not used for grazing anymore. Livestock has now been moved to another area south of Mount Moorosi, which for the time being still offers relatively better grazing.

Vegetation

The Mount Moorosi area is essentially grassland which is dominated by the local indigenous aloe (*Aloe ferox*), with a few scattered indigenous trees and shrubs, many of which are rapidly disappearing due to overexploitation. This includes overgrazing of the rangelands.

Many of the significant plant species of the area have either already been completely depleted or are on the brink of extinction from uncontrolled harvesting by the locals, and from further afield, due to their medicinal and associated commercial value. Indeed, according to concerned locals, many of the plants are sold by unscrupulous traders to markets outside Mount Moorosi, including in South Africa. The result is that the communities themselves do not benefit from these clandestine transactions.

Another big challenge is the use of some of the species, especially the wild olive (*Olea europaea* subsp. *africana*), of which there is plenty in the area, and the *Aloe ferox* for fuelwood by the locals. Another species in the area that is under constant threat is *Pelagornium sidoides*, which purportedly has valuable medicinal properties. The overexploitation of these species also happens to contribute to the disturbance of ecosystems in the area, destroying both flora and fauna.

The Mount Moorosi community is concerned that failure to stop the overexploitation of the natural resources of the area would certainly ensure more destruction of the environment, including unceasing soil erosion and depletion of water resources. Some areas here are almost devoid of plant and wild animal life. Many of the sites here would require the reintroduction of certain indigenous plant species.

Threat from veld fires is sometimes another problem in the area, especially in the rangelands, although this appears to be relatively infrequent compared to other areas in the country. The causes of the fires are not very clear.

There is also high unemployment in Mount Moorosi, and people resort to the use of natural resources (fuelwood and medicinal plant collection, and overgrazing) as a means of livelihood, a situation which has contributed to genetic erosion. However, the community has indicated that they would be willing and prepared to curtail the destructive use of natural resources and protect them were they to benefit from such protection and conservation. Some also indicated that assistance in the form of non-conservation and livelihood enhancing activities, yet which are supportive of conservation efforts in the area, would be welcome. These include beekeeping, homegardens and biogas production (to reduce dependency on the use of indigenous species such as the wild olive and *Aloe ferox*). The need for the preservation of traditional knowledge was also of concern to the community.

Institutional Setup and Constraints

Despite the fact that they have quite tremendous natural resource management challenges, including a shortage of productive rangelands, the community of Mount Moorosi is a very well-organized one.

A ward chief governs the area, in collaboration with the local Community Council. Since the area is made up of four villages, each with its own chief, the ward chief also oversees these four chiefs.

The four villages of Mount Moorosi are represented by a local Community based Organization (CBO) called Khotla-Moreneng. The CBO has a broad-based membership, which includes the chiefs of the four villages and their headmen, a member of the local Community Council and others from various sectors represented within the community, and also from as far away as Quthing. Every last Thursday of the month Khotla Moreneng hold their monthly meeting, to discuss progress on on-going projects and to introduce new issues.

Khotla Moreneng is currently engaged in a number of activities designed to improve the livelihoods of the community of Mount Moorosi. These include a men's group called Kopanang Bontate that looks after various development issues. There is also a committee charged with responsibility for potable water supplies in the area. This committee is also concerned with irrigated agriculture and homegardens, although there is not much currently happening in this regard. They have however held meetings with potential sponsors to start local production of, in particular, field crops such as maize and potatoes, as well as the establishment of orchards of a number of fruit varieties (peaches, apples and table grapes).

An issue that also came up during discussions with the Mount Moorosi community is the fact that some households own fewer livestock than others, and therefore would not be able to benefit as much from the rangelands. This potentially could be a source of conflict.

Furthermore, there are interest groups within Khotla Moreneng involved with the elderly, women and orphans. In the latter case, they have managed to get educational bursaries for more than 50 orphaned children in the area from an overseas organization.

The four communities that make up Mount Moorosi, as represented by their chiefs in Khotla Moreneng, have shown strong keenness for the project, and indeed one of them (Ha Moqalo) has already done excellent work of protecting *Aloe ferox*, and the range resources therein. In terms of fostering community participation and commitment to the improvement and better management of rangelands on a sustainable basis, Khotla Moreneng are willing, and would seem to be well placed to take active part in the implementation of the Demonstration Project.

Several Grazing Associations (Rangeland Management Associations) also exist. Their potential role in the Demonstration Project would need to be further explored.

3.3 Ketane/Qobong

Physical geography and environment

Lying at about 2,000masl, the Qobong Community Council includes Qobong and Ketane, the latter at the same altitude, although a little further away. This Community Council form the mountain area of Mohale's Hoek District. The terrain in these areas is quite mountainous, with the Qhoasing River near Qobong pouring into the Ketane River just a few kilometres before the latter flows into the Senqu in the same vicinity. Both areas are difficult to reach because of the poor quality of gravel roads. It takes about three to four hours to reach these areas from Mohale's Hoek.

The rainfall in these areas varies quite a lot, but on average it can be 400 to 500mm per annum, except in some exceptional years when it may go up to 700mm.

The summer temperatures are ranging from 18°C to 25°C during the day, evenings are much cooler. However, the winters can be extremely cold, quite often with snowfalls.

As in many parts of the country, rangelands are quite poor in the areas, mainly due to overstocking. Most of the mountain sides are almost bare, except in areas where people still collect thatching grass.

Many families keep some form of livestock, mostly sheep and goats. These are usually sent to cattle posts during the summer but come back during winter when it's too cold to keep them further up the mountains.

Institutional setup and constraints

Both Ketane and Qobong have their own chiefs and headmen. Whereas the cooperation of the traditional chiefs with the Local Government structures at the Qobong Community Council maybe difficult at times, both parties seem to work well together on development matters. However, as far as the management of natural resources is concerned, including rangelands, it seems everything is left to the chiefs.

Government departments, especially the Ministry of Agriculture and Food Security, are quite well represented, particularly in Ketane, although they cover quite a large area including Qobong in their extension work. The Agricultural Resource Centre, built with assistance from an IFAD-funded Sustainable Agriculture and Natural Resource Management Project, is also based in Ketane. It includes a number of agricultural officers.

At Qobong there is a women association that has built some rustic rondavels as accommodation for tourists and government staff. They also look after HIV/AIDS infected people and those who have been affected one way or another by the pandemic. They also produce skin ointments from locally found plants, for income generation.

Issues

The main issues in Qobong are the prevalence of the HIV/AIDS, which the women association seem to be managing quite well. Another issue is lack of formal employment opportunities, hence why they have embarked on a number of income generating activities. They are also concerned that their important indigenous plants are being depleted.

Previous and on-going initiatives and projects

Both Ketane and Qobong have benefited from a number of natural resource management projects in the past. The aforementioned IFAD-funded project is still operating, but is due to end by the middle of 2011. Another which is still operating is the Ministry of Forestry's Watershed Management Programme. The UNDP-GEF funded Sustainable Land Management Project has just moved in.

In the past Qobong has benefited from the Conserving Mountain Biodiversity in Southern Lesotho Project, another UNDP- GEF funded initiative. This project came to an end in 2004 after operating in the area for about seven years. There have been other initiatives in both areas, mostly related to health and education.

Tentative focus of a potential intervention

The Qobong Community Council has indicated that by the year 2011 they would like to have attained good health and stability for the community (i.e. both Qobong and Ketane). They would also like proper service delivery so that they could implement their set targets of: a tarred road from Seaka bridge to Ketane, a secondary school, access road to villages, potable water, and irrigation equipment.

3.4 Semonkong

Physical geography and environment

Semonkong is a remote village located in the southern central part of Lesotho. It nestles in a large amphitheatre between the Thaba Putsoa range and the mountains around the great Thaba Ntso (Black Mountain), to the west of the great Central Maluti range. This is where the Maletsunyane falls, the highest waterfall in southern Africa (falling almost 200 metres in a single drop), is located. Semonkong, 'The Place of Smoke', is named the characteristic haze created by the waterfall plummeting into the gorge.

The national flower of Lesotho, the spiral aloe (*Aloe polyphylla*), is restricted to steep basaltic mountain slopes. There are large areas of these pretty plants found around Semonkong.

Snow has been recorded all year round in Semonkong, although it is rare outside the period of April to October. The summer temperatures in the mountains rarely exceed 28°C and may drop below - 10°C in the winter.

Access to Semonkong from the Maseru passes through the university town of Roma, the road is gravelled and in fair condition all the way from Roma.

Because of the climate of Semonkong, it is difficult to grow certain crops for a good part of the year. Most of the farmers here are sheep farmers (for wool), although they do own other livestock such as goats and cattle. Most of the time sheep and goats are in the cattle posts, while cattle are usually kept closer to home as they are used for ploughing and sometimes for milk.

There are communal grazing areas, but these are not enough for the whole community as many farmers keep large numbers of stock, hence why they sometimes grow their own fodder.

The soils in Semonkong are quite fertile and do not require much fertilization. Potato production is excellent in this area. Other crops produced include maize, sorghum, beans, peaches and apples. They also grow some fodder crops such as fodder oats and lucerne.

Marketing for most other crops is done locally. However, the potatoes are sold in Maseru to the big supermarkets.

Institutional setup and constraints

Being one of the larger settlements Semonkong has recently been gazetted as a town; it has several smaller villages around it, each with its own chief. Traditional chiefs and Local Government work fairly well together.

Since it has been declared a town, most government departments are represented in Semonkong, including the Ministry of Forestry and Land Reclamation and the Ministry of Agriculture and Food Security.

Issues

The main issues in Semonkong seem to be lack of formal employment opportunities as well as the marketing of agricultural products, other than wool and potatoes.

Previous and on-going initiatives and projects

One of the best known projects to work in the area was the Semonkong Rural Development Project, an integrated development project active in agriculture, forestry and water resources management.

Current initiatives include those of NGOs such as Serumula and the UNDP-GEF funded Sustainable Land Management Project.

Tentative focus of a potential intervention

The main concern of the farmers of Semonkong is for the improved marketing of their crops. They feel that if they could get better marketing channels it would help to improve the economy of their village/town, and they would be able to hire others to work in their fields or look after their livestock.

3.5 Likalaneng

Physical geography and environment

Likalaneng is a community council located in the Maseru district. At over 2,000masl it falls within the mountains region of the country. It is located just past the Blue Mountain Pass and close proximity to Mohale Dam. The area falls within what was formerly designated as the Phase 1B area of the Lesotho Highlands Water Project (LHWP). The area is quite mountainous but has very little tree vegetation, the only trees being those planted by government.

The Senqunyane River runs right past Likalaneng and feeds into the Senqu further down.

Access is quite good; a tarred road leads all the way from Maseru.

It has a relatively mild climate during summer with temperatures between 20°C and 25°C during the day, but the nights can be quite cool even during summer averaging around 8°C.

Very few families own livestock in Likalaneng as many of them had to be moved from their homes in the Mohale catchment to Likalaneng, with compensation of some form (a new house, cash and grain for a number of years). Indeed, the community confirmed that there were very few rangelands that could be of use, and these could not adequately cater for the small numbers of livestock in this area. However, many showed interest in owning livestock. Also, very few families grow field crops. The crops grown include maize, sorghum, beans and some vegetable in the gardens.

Institutional setup and constraints

The Likalaneng Community Council includes more than 75 villages. Each of these villages has its own chief, and all of them are answerable to the ward chief. The ward chief works closely with the Local Government on various community issues.

Issues

The main issues in this community are HIV/AIDS and agricultural production. During construction of the Mohale Dam some years ago HIV/AIDS became a pandemic in the area. Recently a clinic was built for the community to address this problem. The issues relating to agricultural production stem from the fact that this is a mountainous area with very little arable land, a problem that was

exacerbated the impoundment of Mohale Dam. Unemployment also seems to be an issue to many, especially men, although it affects the whole family.

Previous and on-going initiatives and projects

The Likalaneng community was one of the major beneficiaries of the aforementioned Phase 1B of the LHWP. The benefits came in the form of job opportunities, infrastructure (tarred roads) and more than adequate compensation for those who had been relocated due to the impoundment of the Mohale Dam.

Current projects include the UNDP-GEF funded SLM Project. Other initiatives include those by World Vision and Action Against Hunger and focus on health and social issues. The Likalaneng Health Centre is an initiative that amongst others looks after those affected by HIV/AIDS.

Tentative focus of a potential intervention

Many of the farmers in Likalaneng have shown an interest in acquiring livestock. Some would like to engage in some form of income generating activity; for example, selling fruit and vegetables, and carpentry.

3.6 Maphutšeng

Physical geography and environment

At more than 2,000masl, Maphutšeng is considered to be in the foothills region of Lesotho. It is located in the Mohale's Hoek district, about 100km south-west of Maseru. It is a rather hilly area which has widespread soil erosion. It is right on the Maphutšeng River, which joins the Senqu a few kilometres further down.

Access to the area is difficult, as the road is gravelled but poorly maintained.

Maphutšeng is in one of the driest parts of the country. Most farmers in this area engage in communal garden production (vegetables and fruit trees), an approach introduced to them some years ago by a project funded by the Swedish International Development Agency (SIDA). Not many of them own livestock, as the rangelands are quite poor.

Institutional setup and constraints

There is a local Community Council which works with the chief of Maphutšeng. Relations seem to be quite good

Issues

The main concerns here are frequent drought conditions and rampant soil erosion. As in many other areas, unemployment comes up as an issue. The community would also wish to have their access road improved.

Previous and on-going initiatives and projects

A number of projects have previously worked in this area. The SIDA funded Farm Improvement with Soil Conservation (FISC) started in 1985, and later came the Production Through Conservation Project, which had two phases.

A current project is run by the NGO Growing Nations Lesotho, which teaches the locals to practice conservation agriculture, which presumably reduces soil erosion but increases crop yields.

Tentative focus of a potential intervention

Some of the potential interventions the community would like include conservation of natural resources, increasing the number of irrigation schemes and improving road access (road maintenance).

3.7 Site evaluation

<i>Selection criteria</i>	<i>Mount Moorosi</i>	<i>Kelane/Qobong</i>	<i>Senonkong</i>	<i>Likalaneng</i>	<i>Maphutseng</i>
1 - An effective community level structure already exists within the area. In particular, the chosen community should have a structure already in place to tackle natural resources management (grazing) issues – so demonstrating a willingness to tackle the problem; an acknowledgement of the problem’s seriousness, as well as proven administrative ability.	✓	✗	✗	✗	✗
2 - The site includes a variety of habitats, i.e. include winter and summer grazing areas which allow rotational grazing, and areas within the site are at different stages of degradation. This would allow meaningful replication in similar environmental settings elsewhere in the country.	✓	✓	✗	✗	✗
3 - Baseline data is available – time and budgetary constraints require this, although some targeted data could be collected.	✓	✓	✗	✗	✗
<i>Comments and recommendations</i>	The community developed an environmental protection plan, which includes conservation of their indigenous plant species, as well as other community development initiatives. Recommended site.	Two separate communities under one Community Council, however, the communities are not well organised. UNDP-GEF funded SLM project is active in this area.	Most of the community’s livestock is out in the cattle posts; the community is not well organised	The community is not well organized. Most prefer formal employment opportunities to crop farming and range management. UNDP-GEF funded SLM project is active in this area.	Not many animals in this area; the community prefer crop production to rangeland management.

3.8 Proposed Demonstration Project

Location

It is proposed that Mount Moorosi shall become the logistical centre of the Demonstration Project. Following sound watershed management principles the Project area shall, however, cover all upstream areas, as practical.

Objective setting

The Demonstration Project on community based rangeland management shall address water and land conservation issues, and alleviate poverty through a holistic approach based on integrated watershed management principles and the needs of the local people under the overall objective:

- Rangelands are sustainably managed, based on traditional knowledge and strengthened community based institutions and supported by alternative income generating options.

Expected outcomes and related indicators are clustered under three thematic headings:

- Environmental integrity: Rangeland conditions are improved through the decline of unsustainable grazing practices and the rehabilitation of degraded areas. (Stress reduction indicator: % reduction in degraded areas, baseline and end-of-project.)
- Social empowerment and equity: Community based institutions are empowered to manage their rangelands in a sustainable way. Vulnerable households are adequately represented in these community based institutions. (Indicator: focus group discussions, structured interviews, end-of-project.)
- Poverty alleviation and economic development: Alternate income sources, in particular those based on natural resources commodities, decrease the overall dependency on grazing for economic subsistence. (Indicator: % contribution of alternate income sources to average household income, baseline and end-of-project.)

Workflow with outputs and associated activities

Baseline:

- Use existing data and information sources to the extent practicable.
- Conduct a Participatory Rural Assessment (PRA). Issues to be covered include: land cover and land use; criteria for land degradation; current management practices; land tenure and land access; carrying capacity of rangelands; traditional institutions in natural resources management; potential for alternative income sources.
- Supplement PRA by community-specific socio-economic evaluation, covering: the social role of herds within the traditional culture and impacts on existing herding behaviours and beliefs regarding rangeland management; the economic importance of herding; the role of environment and environmental stewardship within communities; the economic impact of current overgrazing practices; the shifts in gender roles, if any, as a result of demographic changes in the region; and the potential for alternate income sources within the community.

- Conduct other targeted short studies, e.g. on alien invasive vegetation, as required
- Discuss land management issues, major challenges and potential solutions with community leaders and selected community members. Construct a causal chain analysis, identifying priority issues, and possible intervention areas.
- Concise technical report, establishing baseline for monitoring change, by mid 2011.

Strengthening of community based institutions:

- Forming a rangeland management committee, by building on existing community based natural resources management groups/committees/trusts. Ensure appropriate community representation and solicit community inputs to project design and implementation through regular meetings at community level. Solicit support of governmental line agencies, as appropriate.
- Deepen relationships between Local Government institutions (i.e. agriculture and forestry extension services) and the communities through practical work.
- Provide training to the committee and respective Local Government institutions on all aspects related to the Demonstration Project, including aspects of rangeland management; land degradation; flora and fauna identification; basic ecology; rudimentary climatology with climate change and adaptation issues; concepts of environmental stewardship, as well as monitoring and adaptive management principles and basic project management skills.
- Support community based management of rangelands with advice on technical and institutional aspects, as required.
- Gender mainstreaming; co-operate with UNDP Gender Mainstreaming in Transboundary Water Resources Governance Project (under preparation), as appropriate.

Management plan:

- Develop a holistic management plan using a participatory approach. The plan shall be based on traditional knowledge and institutional structures, as well as best practice and governance principles in CBNRM. It shall define rangeland management criteria, set objectives and annual targets to restore the land and manage an appropriate grazing regime and stocking density. The Plan will need to conform to local traditional systems, as well as national laws and regulations and will need formal support of governmental agencies responsible for oversight of range land management.
- Explore options for alternate income generating activities for communities to reduce pressures brought about by grazing. Analyse business opportunities for natural products including value chain analysis, provide economic valuations and estimate potential of natural products, analyse marketing.
- Consolidated management plan, adopted by the community and agreed upon by respective governmental authorities, by end of 2011.

Implementation:

- Physical implementation of measures related to environmental conservation and restoration, biodiversity conservation: These may include erosion control; re-seeding of denuded areas;

planting of fodder grasses and trees, in particular on marginal grasslands; eradication of alien vegetation; community based plant nurseries.

- Seek support and inputs from Local Government extension services in these activities (technical assistance, provision of grass seeds and tree seedlings, progress and impact monitoring).
- Conduct targeted research on technical/scientific issues as well as aspects of community based management, as required.
- Implementation of selected measures, 2011 through to 2013.

Monitoring, adaptive management and learning:

- Develop and implement a community based monitoring system. Incorporate innovative community based approaches (i.e. MOMS) and mapping technologies (i.e. cyber tracker) to cover land cover and degradation issues, grazing patterns and stocking densities.
- Track implications of alternate income source developments.
- Document traditional knowledge and best practice in relevant areas; document lessons learnt and their replicability.

3.9 Implementation arrangements and tentative budget

Implementation arrangements

The Demonstration Project shall be implemented by an Implementing Agent providing the following services:

- Implement all Demonstration Project activities.
- Conduct applied scientific research related to the rangeland management and community based natural resources management issues; draft respective scientific reports, papers, etc.
- Administrative management of the Demonstration Project, including management and disbursement of funds, monitoring and reporting, etc.
- Undertake other specific assignments relating to the Project, at the request of UNOPS.

The Implementing Agent must be a legal entity registered in Lesotho with the right to enter a contractual agreement with UNOPS. It can also be a consortium of legal entities where the lead agency is registered in Lesotho. It must have no history of legal proceedings related to fraud or corruption and an ability to work in English. The Implementing Agent can be any type of organisation (e.g. for profit consultancy firm or NGO) that fulfils the above eligibility criteria.

In June 2010 the Project called for Expressions of Interest. Applications were evaluated against the following criteria:

- A legal existence with a minimum of 3 years and a geographical eligibility.
- Knowledge and experience of natural resources management issues, in particular rangeland management issues; as well as community development.

- Track record of successful implementation of development projects in Lesotho, in particular projects on natural resources management and community development.
- Staff capacity and established office infrastructure in Lesotho (including field offices in project areas) to support the implementation of the Demonstration Project.

Tentative budgets

An estimated budget of some USD 300,000 will be required for the Demonstration Project's duration of 30 months. The below table provides a tentative breakdown of the allocated budget:

<i>No</i>	<i>Description</i>	<i>Unit</i>	<i>Unit costs (USD)</i>	<i>Quantity</i>	<i>Costs (USD)</i>	<i>Comments</i>
1	Staff costs					
	Technical advisor	Person day	400.-	150	60,000.-	International/regional TA; based in Maseru; part-time 20%
	Project manager*	Person month	5,000.-	7.5	37,500.-	Local PM; based in Maseru or district; part-time 25%; based on UN SB5/Q3
	Field officer*	Person month	2,600.-	30	78,000.-	Local FO; based at community; full-time; based on UN SB4/Q2
2	Field office expenses					
	Utilities and communication*	Lump sum per month	75.-	30	2,250.-	
	Transport*	km	0.50	30,000	15,000.-	4WD, 1,000km per month
	Subsistence*	day	15.-	300	4,500.-	For TA and PM, 10 days per month
	Field office and accommodation*	month	100.-	30	3,000.-	For field officer
3	Implementation					
	Materials*	year	40,000.-	2.5	100,000.-	E.g. seedlings, as per requirements
Total for demo project duration					300,250.-	

* Budget items under the Implementing Agent.

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