

UNITED NATIONS DEVELOPMENT PROGRAMME
PROJECT DOCUMENT

PROJECT NUMBER: BOT98G32/A/1G/99 – KEN98G32/A/1G/99 – MLI98G32/A/1G/99

PROJECT TITLE: Management of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid Zone of Africa

PROJECT SITE(S): Botswana, Kenya, Mali

DURATION: 5 years

ACC/UNDP SECTOR: 200/201 (Environment)

GEF FINANCING: US\$ 7,271,400

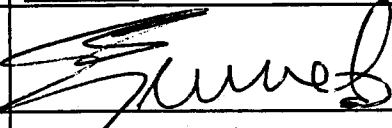
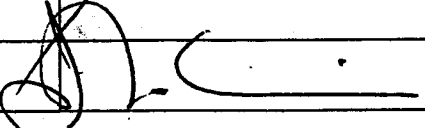
NATIONAL EXECUTING AGENCIES:
Ministry of Agriculture (Botswana)
Ministry of Environment and Natural Resources (Kenya)
Ministry of Environment (Mali)

<u>UNDP & Cost-Sharing</u>	
UNDP GEF:	\$7,271,400
Other	\$2,150,000
Total:	\$9,421,400

ESTIMATED STARTING DATE: April 2001

SUMMARY:

This project is a demonstration programme for biodiversity conservation and dryland ecosystem restoration in the arid and semi-arid zones of Africa. The project will combine community based indigenous knowledge, the findings of scientific research and past practical experience to rehabilitate degraded ecosystems and conserve biodiversity by developing sustainable natural resource management systems. A major goal of the project is to facilitate an exchange of knowledge and experience between three comparable but different situations and develop models, which can be transferred elsewhere within the continent. Technology transfer and supporting research will be a vital part of the project. This will be achieved by (i) strengthening appropriate indigenous management systems; (ii) developing integrated bio-socio-economic data systems; (iii) rehabilitating indigenous vegetation and degraded land; (iv) improving the effectiveness of livestock production and marketing and developing of alternative livelihood systems. Implementation of the project is based on a firm partnership with African arid-zone pastoralists and on close technical co-operation between the collaborating countries.

<u>On behalf of :</u>	<u>Signature</u>	<u>Date</u>	<u>Name/Title</u>
Government of Botswana		2/12/01	Remaneu Sogofery
Government of Kenya			
Government of Mali			
UNDP		18/07/01	MACHARIA KAMAU RESIDENT REPRESENTATIVE

FULL PROJECT BRIEF GLOBAL ENVIRONMENT FACILITY

1. IDENTIFIERS

Project Number:

Project Name: Botswana, Kenya, Mali: Management of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid Zone of Africa

Duration: 5 years

Implementing Agency: UNEP and UNDP

Executing Agency:

National Projects: Ministry of Agriculture (Botswana), Ministry of Environmental Conservation (Kenya), Ministry of Environment (Mali).

Regional Project: Regional Coordination Unit

Requesting Countries: Botswana, Kenya, Mali.

Eligibility:

Conventions signed:	Botswana	Kenya	Mali
Biological Diversity	12.9.94	26.07.94	29.03.95
Climate Change	27.01.94	30.08.94	28.12.94
Desertification	29.12.96	26.12.96	26.12.96

GEF focal Area: Biodiversity/ Land Degradation (with components in climate change and international waters).

GEF Programming Framework: OP#1: Arid and Semi-arid Zone Ecosystems.

2. SUMMARY

This project is a demonstration programme for biodiversity conservation and dryland ecosystem restoration in the arid and semi-arid zones of Africa. The project will combine community based indigenous knowledge, the findings of scientific research and past practical experience to rehabilitate degraded ecosystems and conserve biodiversity by developing sustainable natural resource management systems. A major goal of the project is to facilitate an exchange of knowledge and experience between three comparable but different situations and develop models, which can be transferred elsewhere within the continent. Technology transfer and supporting research will be a vital part of the project. This will be achieved by (i) strengthening appropriate indigenous management systems; (ii) developing integrated bio-socio-economic data systems; (iii) rehabilitating indigenous vegetation and degraded land; (iv) improving the effectiveness of livestock production and marketing and developing of alternative livelihood systems. Implementation of the project is based on a firm partnership with African arid-zone pastoralists and on close technical co-operation between the collaborating countries.

3. COSTS AND FINANCING (MILLION US\$)

GEF:	Project:	US\$ 8.664
	PDF - B:	US\$ 0.33
	Project Appraisal:	US\$ 0.06
	Subtotal GEF:	US\$ 9.054
Co-financing:	The University of Oslo:	US\$ 1.150
	GTZ (Kenya component):	US\$ 0.250
	Government contributions:	US\$ 2.150
Total Project Cost:		US\$12.604

4. ASSOCIATED FINANCING (MILLIONS US\$): N/A

5. OPERATIONAL FOCAL POINT ENDORSEMENTS:

Name: Mr. S. S.G. Tumelo	Title: Permanent Secretary
Organization: Ministry of Agriculture	Date: 30 April 1998 (Botswana)
Name: B.O. K'Omudho	Title: Director
Organization: National Environment Secretariat (NES)	Date: 14 May 1998 (Kenya)
Name: H.E. Mohamed Ag Erlaf	Title: Minister of Environment
Organization: Government of Mali	Date: 7 May 1998 (Mali)

6. IA Contact:

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SECTION 2 - BACKGROUND AND CONTEXT

1. The arid/semi-arid zones of Africa cover 60% of Africa and a major part of Botswana (80%), Kenya (80%) and Mali (70%). These arid and support more than 70% of the livestock, and 90% of wildlife species in Botswana; 50% of the livestock and 75% of the wildlife in Kenya, and 60% of the national livestock herd in Mali. 60 % of the continent is covered by arid and semi-arid lands.
2. The indigenous vegetation of the dryland ecosystems consists of grasses and herbaceous and woody species, which are highly adapted and endemic to arid and semi-arid zones. Together they form a unique ecological association of globally significant biodiversity and geological, climatic and human components, which have evolved over a very long time period. One of the greatest values of indigenous vegetation of the arid zones of Africa is its ability to maintain resilience, through the evolution of special adaptative features to droughts, "normal" variability, and other stressful events. It also plays a crucial role in soil stabilization and protection, CO₂ sequestration, and the creation of micro-habitats for soil microorganisms, which are important in ecological processes in general and especially in nutrient turnover. The indigenous vegetation of arid Africa has evolved specific characteristics that make it distinct, and unique, in relation to other arid lands of the earth. Indigenous vegetation is also a primary resource of the pastoral and agropastoral economy, accounting for a great proportion of livestock feed, materials for construction, fuelwood, shelter, medicines and pharmaceutical products. They are also centers of speciation for various agriculturally important plants, for instance fonio (wild rice), durra, sorghum and the fodder crop *Brachyaria*.
3. The indigenous vegetation that characterizes the arid/semi-arid zone of Africa has evolved specialized adaptations over millions of years, thus making it uniquely adapted to the environment characterized by recurring drought. The flora and fauna of the arid/semi-arid zone of Africa is not characterized by a high degree of species diversity. Environmental conditions tend to be uniform over vast geographic areas and most species occur over broad geographic ranges. Since species and gene pools that are well adapted to drier areas are few in number, the relative loss of biodiversity in arid zone environments is particularly great. This is occurring within and around the three African deserts of the Kalahari-Namib (Botswana), the Somali-Chalbi (Kenya) and Sahara (Mali) as pressure on the resource continues to mount, and land continues to suffer more and more severe levels of degradation.
4. Proper management of indigenous vegetation is crucial to the survival of livestock husbandry and farming, and therefore the rural people. Notwithstanding this, many important vegetation associations, such as *Acacia tortilis*, *Acacia senegal* and *Acacia galpinii* being lost.¹ Threats to these associations are increasing. This loss of natural vegetation through increased anthropic pressure, has resulted in biodiversity loss and localised loss of vegetation cover around settlements, reducing the resilience of the arid zone ecosystems to recurrent droughts, and at the same time reducing their ability to function as resource bases for the local communities. The problem is exacerbated by drought, which in turn leaves the inhabitants no alternatives but to adopt practices that have degraded natural resources and by extension biological diversity.
5. A key factor for sustainable management of arid zones is the ability to use indigenous institutions in order to maintain biodiversity and full resource access rights. Maintaining the diversity within species of living organisms, between species and between ecosystems form important elements in rational management strategies. Traditional management systems have an inherent interest in conserving biodiversity because their diverse traditional economic base (different animal species, occasional use of medicinal plants and wild food) requires a diverse feed and resource supply, and a diverse set of habitats. The role of the pastoral communities in management of indigenous vegetation is considered crucial since they have developed numerous methods that need institutional strengthening for continued sustainability.

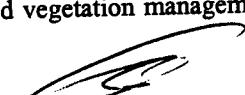
GEF Programming Context

6. The project falls within the GEF priority area of Arid and Semi-arid Ecosystems, Operational Programme 1. This operational programme stresses sustainable use of biodiversity through strengthening the involvement of local and indigenous institutions of natural resource management, capacity-building, human resources development and strengthening both indigenous and formal legal institutional systems as important elements. GEF will also facilitate international and regional co-operation, scientific assessments, conservation of representative habitats, as well as conservation and sustainable use of endemic flora and fauna.

¹ IPAL (1998) Ed. W. J. Lusigi. Integrated Resource. Assessment and Management Plan for Western Marsabit District Part I and II. UNESCO - MAB. IUCN (1990): Biodiversity in Sub-Saharan Africa and its Islands.

7. This project fits in with the priorities of the COP of the CBD on the sustainable use and conservation of arid-zone ecosystems. It is also in conformity with the GEF Operational Strategy, as well as the Framework for GEF Activities concerning Land Degradation as a cross cutting theme with links to climate change and international waters. Re-vegetation of degraded land is important for soil conservation, restoration of degraded areas, natural resources management emphasising integrated resource use, energy conservation using alternative energy sources to conserve the indigenous vegetation and increasing biodiversity. The main elements of the project correspond with linkages between land degradation and the GEF focal areas, as identified by the STAP Workshop on Land Degradation. The project addresses land-tenure problems, resource access rights, collects and analyses data, puts strong emphasis on stakeholder participation, indigenous knowledge utilisation and involves institutions at regional and national levels to reverse land degradation and helps develop sustainable management systems.

Justification for GEF financing

8. The proposed project aims at conserving and rehabilitating globally significant biodiversity in the three African dryland areas through halting land degradation and developing sustainable management systems. Indigenous vegetation and the biodiversity of the arid/semi-arid zone of Africa is of global significance because it is composed of plants and animals that are truly adapted to this vast geographic area. It is critical that sustainable-range management/land-use systems be developed for the indigenous vegetation of this zone. This can best be done by empowering the resource users to control and manage the resources. By creating and testing model approaches in this project we lay the basis for extension of these same approaches to other parts of the world.
9. Building upon IPAL research in Northern Kenya and the experiences gained from practical management of indigenous vegetation from the Kalahari-Namib and the Sudano-Sahel zones, the project will also identify, synthesise and apply the state-of-the-art methods and approaches to demonstrate how globally significant biodiversity can be restored and protected through halting land degradation and the development of sustainable management systems. A major contribution of the project to the control of desertification will be in the development of a model for replication throughout the arid/semi-arid zones, particularly in Africa. Project demonstration sites in the three countries offer important regional perspectives because of the relative, comparative advantages of each country. Botswana has many years of experience with community management systems and a strong baseline. Kenya offers insight and guidelines on appropriate technologies through the work of IPAL, and Mali bring experiences with decentralization.
10. Although these ecosystems are inherently resilient to long-term changes, a combination of factors can lead these ecosystems beyond a sustainable thresholds where they become highly sensitive to changes in management practices. This project will develop innovative and integrated management systems, which incorporate indigenous knowledge, traditional management systems and modern scientific findings. The underlying causes of land degradation will be addressed in order to create a more sustainable and long-term approach to rangeland management. The rehabilitation and re-vegetation of degraded rangelands in the long term will also increase carbon fixation primarily through the increase of woody cover, and a reduction of soil erosion will have positive impacts on international waterbodies of Niger River and Lake Turkana. This project will develop participatory, community-based sustainable range-management systems in key demonstration sites representative of the three major arid/semi-arid zones of Africa.
11. Research and experimental management in arid/semi-arid zones have provided a wealth of bio-physical and socio-economic data on land-use. This will be the basis of establishing a programme of community-based natural resource management. Research on indigenous vegetation by the UNEP/UNESCO-Integrated Project in Arid Lands (IPAL) and the NORAD funded TREMU among others brought to light the nature of vegetation degradation as one aspect of land degradation. It showed that land degradation occurs where human and livestock pressure on vegetation is intense, particularly around settlement areas, particularly around settlement areas. The IPAL Management Guidelines and recommendations on indigenous vegetation rehabilitation have implications for other arid zones of Africa. The guidelines are aimed at arresting degradation of natural resources, and using rational management systems.
12. Indigenous vegetation and management systems and practices are not homogenous in all the sites, but the proximate causes of land degradation and biodiversity loss are comparable. Therefore, a comparative research should bring to light useful results. There is a need for regional exchange of experiences, testing of different tools and methodology. In addition the project should be viewed within the broader perspective of activities for improving productivity of arid lands and rehabilitation of the degraded areas. The project will establish links with various studies and management activities that are being undertaken and planned by governments, NGOs and other international and regional organisations.
13. Although this project is undertaken in the three arid zones of Africa, there is no doubt that the experience to be gained, and the practical applications of that experience, particularly in indigenous knowledge-based vegetation management,
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will make a valuable contribution to the conservation of biodiversity throughout the arid zones of the world. The support being sought from GEF to cover the incremental costs will facilitate the testing of the full range of resource management systems through combating land degradation to use the results for demonstration and training for arid-zone resource managers across Africa and other arid zones of the world.

Linkages of the project with country priorities

14. Given the importance of the arid and semi-arid zones to the participating countries, the Governments of Botswana, Kenya and Mali have undertaken several initiatives to address the issue of land degradation and the extensive loss of indigenous vegetation. Combating land degradation is a major issue of the participating countries as stated explicitly in a number of programmes and initiatives (See Baseline).
15. In the case of Botswana, these concerns are expressed in the UNEP/SADC Kalahari-Namib Project, the Agricultural Development Programme; the Forestry Sector Development Policies and the National Conservation Strategy Action Plans; and the Land and Environmental Development Strategies under SADC. The Government of Botswana is currently undertaking a Range Inventory and Monitoring Project (BRIMP), which is being implemented with other Government agencies. The Government of Botswana has allocated 28% of its National Development Budget to the protection and conservation of natural resources. These are captured in the projects and programmes such as soil conservation, land resources inventory and monitoring and sustainable utilisation of natural resources, based on community based natural resource management strategies. Currently the Government of Botswana is strengthening its natural resources regulations, policies and acts to comply with the agreed international conventions and treaties.
16. In Kenya, the project falls within the National Development Policy that aims at integrating arid and semi-arid lands into the mainstream of the national economy and social development in an environmentally sustainable manner. The project also falls within the recommendations of the NEAP that was adopted by the Government of Kenya in 1996. Furthermore, the Government of Kenya has developed a national policy bill on Environment Coordination and Management, which has specific policies addressing the conservation of biodiversity within the arid and semi-arid land ecosystems. The bill is currently awaiting the parliamentary approval and once enacted into a law it will provide an enabling environment for this project. In addition, Kenya is in the process of preparing a National Biodiversity Strategy and Action Plan with GEF financing, and one of the elements of this strategy will focus on dryland biodiversity.
17. In Mali, the concerns are expressed in the National Plan of Action to Combat Desertification, the North-East Stock Raising and Land Rehabilitation Project, along with the National Plan for Action on the Environment (PNAE), which has now been finalized. Mali is also developing a national biodiversity strategy with GEF financing. The project will also benefit from the current decentralisation process (e.g. changes in land-tenure systems) being undertaken by the Government to make individuals and community more responsible for land management. This will provide an enabling environment for this project. In addition, significant sections of Mali have already been covered by the UNEP/IGN study, which utilised remote sensing techniques to evaluate land degradation trends as a basis for planning alternative management strategies. This information will be used to an advantage by this regional project.

System Boundaries, Regionality and Criteria for Site Selection

18. Regional sites were situated so as to be comparable and complementary. These sites then serve as representative samples of the various arid zones of Africa, and provide a sound basis for demonstrating different indigenous knowledge management approaches to conservation and sustainable use of biodiversity. Criteria for site selection include representativeness of the globally significant biodiversity in the area, presence of viable indigenous management structures and supportive Government structures, community commitment to the project and comparable eco-climatic features. Given the objective of developing a replicable model in Africa, this project has a regional scope. The different management systems operate in comparable contexts, allowing the project to demonstrate general management elements for sustainable use and conservation of biodiversity. The majority of the project activities are at the local level, however there will be many linkages to national programmes and policies.
19. Seven areas have been selected as demonstration sites for the project; Rakops, Lephephe and Bokspits in the Kalahari-Namib zone, Marsabit and Turkana in the Somali-Chalbi and South Azaouad and Nara in the Sudano-Sahel. The demonstration sites in the Kalahari-Namib zone cover about 3500 km² in the case of Rakops, 970 km² for Lephephe and 2000km² for Bokspits-Struizendam. The stakeholder communities of the Kalahari-Namib demonstration sites include different ethnic groups, such as Bayei, Hereoes, Bushmen, (Basarwa), Bakalanga, Banajwa, Batawana, Bakjgalagadi and Coloureds. The project sites are Khumaga, Tsoe, Sukwane, Rakops, Mmadikola, Kedia (total population 10,000), Lephephe, Boatlaname, Sojwe (total population 2,600) Bokspits-Struizendam, (total population 15,000), where the economy is based on livestock husbandry and subsistence farming. The total population in the project areas amounts to

approximately 37,000. These areas receive 150-400mm annual rainfall.

20. The indigenous vegetation of the demonstration sites in the Kalahari-Namib zone comprise Kalahari Acacia wooded grassland, deciduous bushland and Zambesian woodland, with extensive wetlands in the Okavango delta and halophytic vegetation in the Makgadikgadi pan, which are also important centres of endemism. About 17 endemic plant species are known to exist in this zone of Botswana. In Rakops, there has been a die-off of riverine woodlands, affecting many species such as *Acacia galpinii*, *Combretum imberbe*, *Ziziphus mucronata*, *Acacia karroo*, *Grewia spp.*, *Ximania spp.* and *Phoenix reclinata*. These species have important uses such as fodder, medicines, dyes and household materials. Among the Graminae, *Urochloa mossambicensis*, *Eragrostis spp.*, and *Odyssea panicinervis*, are disappearing. In the riverine habitats, *Phragmites communis*, *Cyperus spp.*, and *Nymphaea caerulea* (waterlily), which are an important source of food and construction materials have disappeared. Lephepe has lost much of its woody and herbaceous vegetation cover. Browsing by goats on regenerating *Acacia* is heavy. The woody species lost from the site include *Peltophorum africanum* and *Spirostachys africanum*. The loss of Graminae is comparable to the Rakops site. The Bokspitz-Struizendam demonstration site is sparsely vegetated. Woody vegetation occurs on the banks of fossil drainage lines and on the crests of stable fossil sand dunes.
21. In the Kalahari-Namib zone of Botswana, yearly rainfall for the past 60 years averaged 150-400 mm. Rainfall variability is reflected by highly variable indigenous vegetation cover. About 70% of the land is categorised as communal land, 20% is state-land and the remaining 10% leasehold and freehold. Botswana is a beef producing country, most of which is produced by the pastoralists. The pastoralists' grazing lands have been demarcated by cordon fences to separate livestock and wildlife areas. These cordon fences have altered the traditional seasonal grazing movements. Within the enclosed areas, conflicts between pastoral land use and arable land on one hand and between pastoralists, agriculturalists and wildlife on the other have contributed to the overall degradation of indigenous vegetation. Biodiversity surveys of the country have confirmed that a number of species of plants and animals are being threatened.
22. In the Somali-Chalbi zone, the demonstration sites are Marsabit and Turkana. The Marsabit field-sites of Korr-Ngurnit cover 3,000 km² and have a total population of 4,000 people, while the Hurri Hills Field-site covers 2,190 km² and has a total population of 3,500. The Turkana demonstration site has three field-sites comprising Turkwell, Central and Katilu, which covers 15,000 km² and contains a population of 50,000. In the Somali-Chalbi Zone rainfall varies between less than 150 to 600 mm per year. The stakeholder pastoralist communities of the Somali-Chalbi zone are the Gabbra, the Booran, the Rendille, the Samburu and the Turkana pastoralists. The pastoral population manages sheep, cattle, goats and camels. Land use is characterised by movements between wet season and dry season rangelands. Traditional land use began to break down during the previous decades. Following sedentarisation of the majority of the pastoralists, over-exploitation of indigenous woody vegetation and overgrazing of the herbaceous vegetation layer have become intensive. This has resulted in localised loss of vegetation cover around settlements.
23. The vegetation of the Somali-Chalbi zone is predominately dry bushland with pockets of montane forests and inselbergs, which are hot spots of endemism. IPAL research has listed more than 300 indigenous plant species, of which some are endemic. *Acacia seyal* subsp. *marsabitiensis* is endemic to the Marsabit demonstration site. *Commiphora africana*, *Acacia tortilis*, *Aloe sp.* and several species of grasses and dwarf shrubs are threatened by degradation. In the Turkana demonstration sites, *Acacia tortilis* and *Hyphaenae compressa* are the chief sources of livestock forage as well as human food. These valuable tree species are managed and conserved using indigenous woodland management systems ("ekwar"). The main threat is the effect of the dam on the Turkwell River, which has changed flood patterns and threatened fauna habitats. Poaching has reduced the population of reticulated giraffe, while South Turkana harbours an endangered population of elephants.
24. In the Sudano-Sahel zone, the demonstration sites selected were South Azaouad and Nara inhabited by pastoralists and agro-pastoralists who are mainly Tuaregs, Fulanis and Arabs. The South Azaouad represents the arid-zone ecosystems (150 mm/ yr) of the Sahelo-Saharan steppes north of Timbuktu to north of Bourem, covering 4000 km². The Nara site in the North-West Sahel represents the semi-arid zone ecosystems (300-400 mm/ yr) and covers 3100 km². In the Sudano-Sahel zone, the shift of rainfall isohyets southwards and the drying conditions of the northern Sahel-Sahara zone has forced the northern pastoralists populations to move southwards. This has concentrated the population within the Niger valley, where competition between farmers and pastoralists is increasing. Traditionally, the transhumance grazing cycle takes the pastoralists to northern Sahel during the rainy season. During the dry season, pastoralists move southwards towards the Niger valley. Pastoralists and agro-pastoralists established reciprocal arrangements of resource use in the Niger valley, which were strengthened by tribal conventions. Presently, transhumance from different West African countries is putting additional pressure on the indigenous vegetation.
25. The vegetation of Sudano-Sahel zone of Mali is dry open savannah with rich diversity in the Niger delta valley. About

11 endemic plant species have been recorded. The drought of the 1970s and 1980s caused dynamic changes in the indigenous vegetation structure and composition. *Acacia raddiana* was dominant in the northern Sahel before the drought, but has since regressed, and has been replaced by *Balanites aegyptica*. Also *B. aegyptica* has been replaced by *Leptadenia pyrotechnica* with an increased dominance of *Chizophira brochwana*. In the northeast of the Sudano-Sahel zone of Mali, *Maerua crassifolia* has been replaced by *Boscia senegalensis*, which maintains dominance on clay soils within dune depressions. *A. raddiana*, which had disappeared from the drier northern Sahel zone, is regenerating on the banks of the Niger River. Changes have also occurred in the herbaceous vegetation. For the Sudano-Sahel zone demonstration sites overall, *Acacia senegal* has disappeared, while several other woody species are either disappearing or threatened. In the Nara demonstration site, *Commiphora africana*, *Pterocarpus lucens*, *Dalbergia melanoxydon*, *Prosopis africana* and *Lanea velutina* are threatened, disappearing or have recently disappeared. In the South Azaouad demonstration site, *Hyphaene thebaica* and *Diospiros mespiliphormis* are threatened with over-exploitation. Among the Graminae, *Andropogon gayana* and *Panicum anbasistum* are disappearing. *Panicum augidum* is also disappearing, while *Schoenfeldia gracilis* is threatened. *Cenchrus biflorus* is disappearing in the Houssa area because of overharvesting, overgrazing and drought. Retrogression of indigenous vegetation has also had an adverse impact on fauna habitats, leading to the disappearance of several wildlife species.

26. In all project areas, rainfall is highly variable and unpredictable, with recurrent droughts and pronounced dry seasons. In the Kalahari-Namib zone, droughts lasting up to 7 years are expected every 20 years, and in the Somali-Chalbi zone, major droughts occur every 10 years. In the Sudano-Sahel zone, the rainfall isohyets have shifted southwards during the last decades. The climatic conditions are reflected in the indigenous vegetation cover, which varies greatly from year to year. Traditionally, the pastoralist communities moved between wet season and dry season grazing lands, and in the Sudano-Sahel zone, transhumance grazing patterns have evolved. These systems are now put under pressure from increased sedentarization (Somali-Chalbi), cordon fences for animal disease control (Kalahari-Namib), competition between agriculturists and pastoralists (Sudano-Sahel), and general over-exploitation of the natural vegetation resources, throughout the region.

The Baseline Situation, threats to biodiversity and land degradation

27. The baseline situation of the demonstration sites is typical of nearly all the arid/semi-arid zones of Africa. It is characterized by ongoing, increasingly severe land degradation, especially around settlements, and particularly of the indigenous vegetation. In the most severely degraded sites, nearly all biodiversity has been lost. Previously stable fossil dunes have become live dunes. On heavier soils the vegetation cover has been lost, the topsoil eroded away, and the subsoil has formed a nearly impermeable crust that further accelerates runoff that makes restoration especially difficult. Wind and water erosion is widespread and severe. Shallow, stony soils become even more shallow, permanently reducing their potential productivity. Soil organic matter decreases and with it, infiltration rates decline, water and nutrient holding capacity of the soil declines as does its soils microbial diversity.
28. The baseline situation is characterised by a lack of effective community-level control over range resources. Many of the rangelands are characterized by open access with few effective management structures. Traditionally, the rangelands and water points were locally controlled and managed. Pastoralists and their herds were highly mobile moving with the seasons and with the rains and the pastures. This situation has changed with the imposition of centralized ownership and control over land and resources. Although there have been recent high-level policy movements towards decentralization and local empowerment, this has not yet been fully applied to the local level.
29. The "normal" condition is one of partial, but continuing, degradation of vegetative cover. Regeneration of the natural vegetation becomes more and more problematic. Vegetation biomass and cover declines and with it, the amount of carbon sequestered. Table 2.1 Annex IV presents a synthesised analysis of the intermediate, proximate and ultimate root causes of biodiversity loss and land degradation in the three countries. GEF funding is sought for activities that directly address the intermediate and proximate causes, while relying on the baseline's ongoing programs and projects to address the ultimate causes.
30. The proximate causes of land degradation and biodiversity loss in the arid and semi-arid zone are similar and comparable among the three countries and can be listed as follows:
- The breakdown/loss of traditional management systems has contributed to weakening of indigenous management systems. Local pastoral communities are not empowered to manage their rangeland and to apply traditional range management systems/techniques where this local knowledge still exists. Centralised management of range resources has been proven to be ineffective. The most basic prerequisite for sustainable management of any type of renewable natural resource is to have clearly defined resource access rights in the hands of a recognized body that has the means

- and the motivation to manage the resources. It is the local pastoral communities who depend on the range resource that have the principal motivation to manage the resource sustainably.
- Shifting agriculture, and over-harvesting for fuel and construction needs are leading to ongoing high rates of deforestation particularly in a widening radius around settlements and urban areas.
 - However, indigenous systems are not able to cope with recent external pressures in particular range compression due to changes in settlement patterns, agricultural encroachment, land use conflicts, and cordon fences in Botswana for National Parks and sanitary control. More and more of dry season pasture and water resources have been taken over by agriculturalists. Rainfed agriculture is being extended into lower and lower rainfall zones into former dry-season pastures, often leading to accelerated, severe land degradation.
 - Freedom of movement and mobility of pastoralists is increasingly reduced. Government policies favor sedentarization of pastoralists and there are restrictions on movement across national borders. Access to dry-season water points becomes more and more restricted, as the water and the surrounding lands are utilised or occupied by farmers. In addition, more and more farmers that used to allow pastoralists to use their crop residues for their livestock are now using all the residues for their own smallstock. Mobility was a key element of most traditional grazing systems. Mobility is ecologically desirable in arid/semi-arid rangelands because it allows pastoralists to move their herds to where the rains have fallen and to where the forage is most abundant (this is desirable when not combined with open unmanaged access to the resource).
 - Lack of ready access to livestock markets with financially attractive producer prices leads to diminished sales of livestock and, consequently, lower income opportunities. This is especially a problem in Kenya where livestock producers are only allowed to sell their livestock in restricted markets in Nairobi.
 - Pressure for survival push individual land users to overexploit other range resources (medical plants etc.) There is a lack of economic incentives that link income generation to the sustainable management and conservation of rangeland resources;
 - Because of continuing "top-down" approaches, there continues to be a lack of integration of scientific and indigenous knowledge systems, for the development of successful and sustainable models of local level natural resource management. Resource managers and planners lack access to relevant data on indigenous production and management by local communities.
31. The baseline situation is in general very supportive of the project, and provides a sound basis for the identification of incremental costs. The baseline includes indigenous management knowledge and institutions, local and national level NGO's and their activities, local government capabilities, and national level policies and programmes. The baseline activities and programs address ultimate causes of biodiversity loss, but need strengthening to be brought to an effective level of operation. Table 2.2 Annex IV provides the logical link between threats, root causes and components that have been designed to address the threats.
32. Despite the considerable investment that has been made in research on arid and semi-arid areas of Africa, e.g. the findings from IPAL, in researching various dimensions of the pastoral economy, including the role of indigenous vegetation, the biodiversity significance as well as its role in the maintenance of dryland ecosystems, the resulting information has not been adequately applied to ecosystem management in arid/semi-arid zones of Africa. Building upon this and other baseline investments, this project seeks to highlight the utilisation and application of that knowledge through demonstration, model building and replication to achieve global environmental benefits.

SECTION 3 - RATIONALE AND OBJECTIVES

Global Environment and Development Objectives

33. The global benefit is the conservation of biodiversity by developing an appropriate system of natural resource management, which reverses the present trend of degradation by establishing sustained production systems within the agro-pastoral and pastoral economy of the arid zones. A regional comparative approach will be taken, based on a number of demonstration sites in the Kalahari-Namib region, the Somali-Chalbi region, and the Sudano-Sahelian region. The project will therefore develop models to reinforce in situ conservation of biodiversity of plants and animals through halting of land degradation. The knowledge gained from these three demonstration areas will be available for replication in order to help sustain this unique ecosystem. Global benefits will be assured by selecting sites that are representative of the different habitats and ecozones in arid and semi-arid Africa, and are sites that have a higher probability of success in developing replicable models. A secondary global benefit is to increase plant biomass, both above- and below-ground, which improves resilience to drought, and potentially produces benefits in climate change.
34. The domestic benefits of the project accrue from rehabilitated lands and sustainable management systems in the 7 sites, plus development of models applicable to the other arid zones of the countries. In addition, there will be an

improvement in the standard of living of the communities by demonstrating and adopting appropriate natural resource management systems that incorporate the use of indigenous knowledge. The local communities will also be assisted in utilising local renewable resources, e.g. water and fuelwood, to diversify their economic base, including the development and marketing of range products, to reduce overexploitation of the indigenous vegetation and erosion of soil.

35. The project activities will be achieved by carrying out a carefully co-ordinated demonstration program of development and sustainable use of land, water and vegetation resources, based on a synthesis of the value-added by the IPAL guidelines and other approaches. The project advocates improved animal husbandry by integrating indigenous traditional knowledge and modern science, including regulation of livestock distribution and improvement of marketing. The project will also rely upon the positive experiences acquired in its demonstration sites in the management and rehabilitation of the arid lands, as well as incorporating a high degree of flexibility to ensure sustainability of the indigenous natural resource management system by creating strong partnerships with the local pastoral communities.
36. An integral complementary part of the project will be a targeted research component, mainly funded by cofinancing, aimed at solving major issues of land degradation in the arid lands. The principal task of the targeted research will be to train local personnel, design monitoring activities, conduct the analysis and synthesis of existing data and collect additional data on indigenous vegetation of arid lands in direct relation to the project components. Closely related to this will be regional mechanisms to ensure that research findings are communicated to stakeholders and policymakers in the three countries. The mechanisms will address issues relating to use of indigenous knowledge management systems and the use of models to communicate scientific findings to local populations.
37. The logical framework annex (annex II) identifies verifiable performance indicators and milestones that were developed in consultation with all partners and which will enable the measurement of progress towards projected outcomes.
38. The project is integrated into national programs and plans, since it addresses the baselines programs and policies in each country relating to the improved management of arid and semi-arid lands. GEF funding is sought to take advantage of the comparative strengths of each country's knowledge base, to bear on a regional synthesis of experiences in arid and semi-arid lands. Past approaches to improved management of arid and semi-arid lands have tended to be individual country oriented without the benefit of lessons learned in other countries and to pay only token attention to participatory development and the integration of indigenous knowledge. In the past, less attention has been given to the needs of mobile pastoral communities.

Linkage of GEF Programming Approach to Problems

39. The project activities are designed in accordance with the guidelines provided by the Operational Programme 1: Arid and Semi-arid Zone Ecosystems of the biodiversity focal area. The framework offered by the follow-up to the STAP Workshop on Land Degradation, approved by the GEF Council in May '97, provides the background to project activities as they relate to this cross-cutting theme. Beneficial results are also expected to indirectly address the focal areas of climate change and international waters.
40. The analysis of direct and indirect causes of biodiversity loss and land degradation has identified a number of barriers that must be overcome before biodiversity conservation can be sustained on rehabilitated lands (See Tables 2.1 and 2.2 in Annex IV on Root causes to Biodiversity loss and Land Degradation, and Threats and Root Causes).

SECTION 4 - PROJECT ACTIVITIES AND EXPECTED RESULTS

Relationship between components

41. All the components are closely interrelated and are critical for the management of indigenous vegetation in arid/semi-arid ecosystems. The project design has taken into consideration activities that facilitate the integration of project components between demonstration sites. Component 1 focuses on the establishment and/or strengthening of appropriate indigenous management systems and is strongly linked to Component 3, which seek to rehabilitate degraded lands with indigenous vegetation species and develop rational management and sustainable use of biodiversity through community participation. Component 2 seeks to establish a regional arid zone biodatabase to facilitate better management of dryland resources. Component 4 addresses improved livestock production and marketing and the provision of alternative livelihoods. Component 5 and 6 focus on technology transfer and applied

research and will support the other Components. Component 6 is very closely linked to all the other components in that the activities of this component build on the needs and outputs emanating from them. Detailed explanation of the activities and anticipated results are presented in the logical framework in Annex III.

Component 1: Establishment and Strengthening of appropriate indigenous management systems.

42. The project will facilitate the creation and strengthening of community-based representative management committees in the demonstration sites to take full responsibility of managing the indigenous vegetation. Already existing societal management structures acknowledged by the communities and the states should be the basis for creating indigenous management authorities. The role of women in these decision-making structures will be clearly considered as they are the principal users. In addition, the project will recognise that most local communities are not homogenous, and therefore will ensure effective participation by all stakeholders using state-of-the-art methods in participatory planning (e.g. Participatory Learning and Action).
43. Special attention will be paid to strengthening the capacity of indigenous range managers (herdboys, scouts, trackers, elder councils etc.) There will be a need to establish a partnership between the communities, the Governments and the project. The communities will then be helped to develop management master plans that would accommodate the need to conserve and rehabilitate vegetation, develop land-use plans and resolve conflicts within and between communities. Since these types of plans are dynamic they need to be continuously revised and updated. The plans should where necessary incorporate traditional conventions which have existed before the initiation of the project. The project will strengthen protocols on grazing, sharing water points and fodder reserves. The master plans provide authority to the communities of the demonstration sites to regulate and control access to home range key resources. In Botswana and Mali the policies to define the authority of local communities to take responsibility for the local land use are part of the Baseline, while in Kenya the legal framework is being revised to deal with these issues. In the case of Mali and Kenya, the special needs of mobile pastoral communities will be addressed.
44. Indigenous methods of conservation will be identified for each resource and the communities helped to develop conservation measures. In situ conservation would also apply to rare plant and animal species, which are being threatened with overexploitation. The basis will be development of community biodiversity registers that identifies all plant and animal species within each demonstration zone, which the communities consider as being threatened. The community biodiversity registers will contribute to building of biodiversity database for each area. The registers will identify each plant and animal species, describe their habitats, types of uses, the socio-cultural values and form of management necessary for conserving them. As part of the community education, important plant specimens will be collected to establish community herbaria. Local incentives for conserving biodiversity will be built into the project design through participatory assessment of the perceived values of biodiversity and economic benefits from a diverse genetic base, and documentation of indigenous technical knowledge for the benefit of the younger generations.

Component 2: Establishment of a Regional Arid zone Biodatabase.

45. The project will establish a participatory process of information collection, analysis and use, leading to a regional Arid Zone Database. This will facilitate the collation and recovery of considerable investments in relevant data on indigenous production and management systems, which is currently trapped as raw data. This will be supplemented by baseline data on the socio-economic situation of the demonstration areas, analysed through existing (Kenya and Botswana) and installed (Mali) GIS systems. This component will compare the different methods in participatory planning in order to develop a method for local, participatory collection and analysis of data, applicable to the three countries. This includes an assessment of the extent and trends of land degradation through interpretation of aerial photos, satellite imagery and ground surveys. These data will contribute significantly to the integrated management of land, water and biodiversity. They include mapping of key resources; herd migration routes; patterns of settlements; understanding relationships between different pastoral and agro-pastoral groups of the demonstration sites; the distribution of water points, traditional rules and regulations for controlling access to pasture and water; delimitation of the territorial boundaries of the participating communities (or groups); and the definition of the demonstration site boundaries.

Component 3: Rehabilitation of indigenous vegetation and degraded lands.

46. The most effective way of rehabilitating land and vegetation is through the reduction of overgrazing and over-exploitation of natural vegetation around settlements in the demonstration sites as a result of the establishment of appropriate management systems. In each of the demonstration zones a range of measures may need to be used. The participatory assessment exercise (Component 2) involving the local communities, will contribute to the formulation of management master plans. Decisions to protect some over-utilized grasslands and woodlands to allow regeneration or

decisions to re-seed some localities, or to plant trees, should be carefully balanced. Different tree planting methods and ways to enhance germination and survival if indigenous species will be tested, including natural regeneration and protection of natural seedlings, local, communal or private nurseries etc. Wherever possible, ecosystem rehabilitation through sound management of natural regeneration should be the goal. However, in some cases there may be a need to stabilise soils to prevent further erosion, involving the utilization of indigenous knowledge and community participation. Water harvesting techniques could be utilised, wind breaks constructed and sand dunes stabilised. Where appropriate, water points may need to be established to promote optimum use of rangelands. Vegetation rehabilitation will be carried out in Mali by the use of demonstration enclosures around settlements where optimum integrated management of soil, water and vegetation will test the possibilities for the area. These plots will be compared with similar areas under continuous traditional use with non-fencing management in the other countries. A close monitoring of the results of these activities will be necessary in order that the communities involved may identify the most effective measures for general use. This component may also include the establishment of fire management measures in Botswana.

Component 4: Improved livestock production and marketing, and provision of alternative livelihoods.

47. The activities under this output are aimed at increasing economic diversification and alternative livelihoods for the pastoralists and agro-pastoralists. The project will provide alternative means of livelihood by diversifying the economic base for rural communities, e.g. through bee keeping, honey production and handicrafts in the demonstration sites. This will be done through development of investment programs and establishment of self-help funds and community-based services. The project will demonstrate the possibility of improving the access to information and the infrastructure for marketing live animals. An additional role of the project is to facilitate policy reforms on livestock production and marketing of range products.
48. This component will work on increasing income from traditional herds by improving the feed resources for animals selected for the market, including dairy production. This will be done through, for example, irrigated fodder banks and establishment of fodder reserves that are linked to traditional drought reserves. In Mali, irrigated fodder may be tested around boreholes. Already, pastoralists in the Niger River Valley depend on crop residues from irrigated plots as a major source of dry season fodder supplement for their livestock. Building on existing knowledge, the project will also demonstrate growing of fodder using irrigation. Suitable grass species including wild cereals, (e.g., Fonio (*Panicum laetum*), which is popular with pastoralists and agro-pastoralists in the Sudano-Sahel zone) will be selected and tested in order to identify their potential for multiple use. The residues will then be used as livestock feed. Lessons learnt from the establishment of revolving funds in the last decade will be incorporated into the design of these funds. Discussions will be held through the Appraisal phase of the project to determine the possibility of obtaining cost-sharing from the local communities for the self-help funds.

Component 5: Technology Transfer, Training and Regional Comparative Learning.

49. An important part of this project is the testing of management systems. As the range and indigenous management systems are developed on a representative community basis there will be a need for training, the articulation of lessons learned and the sharing of experience within and across the various demonstration sites to ensure regional comparative learning. Community-based natural resource management committees will be given direction and specialised training for their new tasks and roles. Seminars and workshops will provide additional skills necessary to implement the planned activities. Exchange visit and joint workshops will allow institutional arrangements, tools and technologies to be shared between communities.
50. The project will demonstrate appropriate energy saving technologies to conserve woody vegetation from being overexploited for fuel. Woodlots, preferably composed of quick growing bushy woodland for providing fuel wood and construction materials will be established, and energy saving devices will be developed and adapted to local conditions and needs. This activity will ensure maximum biomass recycling in cultivated and non-cultivated rangelands.
51. This component will also focus on fostering exchange of experience and comparative learning at the regional level, including workshops, seminars, exchange visits and documentation.
52. Schools in the project sites will be involved in Environmental Competitions focusing on halting land degradation where the best school gets a trophy. Young Environmental Clubs will be set up focusing on halting land degradation using projects results. Environmental Management Committees comprising different villages will also compete for Environmental Conservation trophies and other incentives accruing as a result of application of project results. Project's results will be translated into local languages for wider applications. Mass media that will involve the use of photography, dailies, newsletters, videos, television, radio, slides, documentary films and posters will be intensively

used to deliver messages on land degradation and how it can be halted. Field days that include tree planting, Environment day, Water day, Workshops, Seminars, field tours will be further used to disseminate land degradation information.

Component 6: Targeted Research

53. Targeted research will be an important and integrated part of all the project components, and will be carried out in collaboration with the communities, local universities and research institutions as well as with universities outside the three countries involved. The University of Oslo will be playing a coordinating and fund-raising role in this connection. A combination of scientific and indigenous knowledge is needed to implement the various activities specified in components 1-5. Applied research is needed in the following fields: indigenous resource management (e.g. develop participatory planning methods, develop community biodiversity registers and community herbaria); range habilitation (e.g. testing suitable indigenous plants for range rehabilitation, water harvesting techniques, soil stabilisation, ecological economic evaluation); energy saving technologies (e.g. develop alternative technology transfer); livestock marketing alternatives (e.g. marketing information, policy formulation, irrigated fodder crops) and technology transfer (e.g. training seminars, conferences or workshops). In addition, component 2 (Establishment of arid/semiarid zone database and GIS) will be strengthened by co-financing and through the establishment of a database on natural and socio-economic aspects (for which GIS will be an important tool). This can be used as a basis for comparative analysis with a regional as well as a local focus, which together will serve as a platform for further monitoring of the system. Personnel (including students) may visit institutions in as well as outside Africa, as part of the training component of the project. Annex VI provides an overview of examples of topics that could be taken up and how the Targeted Research component links up to the other components of the project.

SECTION 5- RISKS AND SUSTAINABILITY

Risks

54. The project does not face any major risk, which might prevent it from being carried out. However, there may be negative externalities, which could handicap the achievements of the project's objectives. Some natural resource management activities might be at risk if severe long-term drought and other natural disasters were to occur. The project will attempt to address this issue with many activities that directly and indirectly enhance the local population's ability to buffer the impact of droughts and other natural disasters, such as indigenous vegetation rehabilitation, sustainable management systems, improved income generation and alternative livelihoods.
55. Elements of community participation, which are important for the project, include respect of land rights of the participating communities; proper management of the production systems introduced, as well as the willingness to implement new ideas and adopt new technologies. The communities must respect the agreements/protocols undertaken by the project.
56. As the project will be carried out through a highly participatory approach, involving relevant major stakeholders, communities in all of the project sites have been involved in consultations, and are very interested in co-operating and participating in the project. The project has been designed in such a way as to ensure that all major stakeholders have a role in the decision-making processes. In particular there will be gender sensitivity in the decision-making processes.

Sustainability

57. Assuming that the timeframe of the project is, in relation to the biological and socio-economic processes, sufficient to ensure measurable results in most components after five years, the project activities will be sustained after project completion. The presence of substantial Government contributions (in kind as well as in cash) confirms Government commitment to financial sustainability of the project in these countries. Government willingness to promote and provide an enabling environment for the project (e.g. civil security, tax exemptions for the project and disbursement of financial commitments) is important for the success of the project. In addition, the timely and flexible disbursement of committed funds will be critical in ensuring success.
58. The goal is to mobilise indigenous knowledge and provide technology and understanding to address land degradation problems and restore biodiversity in the demonstration areas as a basis for expanding these activities to other parts of arid and semi-arid lands of Africa. If the project is successful, it will provide the basis for replication both within the countries and elsewhere in arid Africa. Given the severity of land degradation in this zone, and if the project is successful, it will provide the basis for ongoing sustainable land and biodiversity management. Initial consultations with the communities in the project sites have revealed that the communities are well aware of the natural resource

management problems that contribute to land degradation. It is assumed that the national counterpart institutions (Government as well as scientific) have the necessary capacity and resources to absorb and sustain the project results after the finalisation of the project.

59. There is also ample evidence that when communities are given a clear mandate to manage resources, the objectives are achievable. Therefore, this project will give communities autonomy to determine activities that can halt land degradation and thereby contribute positively to their economic well-being. Since in most project sites there are viable, traditional institutions, it is clear that communities can be grouped into management committees representing communities which decide on the wise management of biophysical and socio-economic resources, utilising indigenous knowledge. Some relevant policies and legal frameworks are now in place, but specific local use, marketing and other policies, which can further empower local communities to gain ownership of resources need to be in place to ensure sustainability of the project. Improved returns from livestock sales can further enhance the ability of local communities to sustain the successful results of the project. Finally, capacity-building of the local communities in environmental conservation blending it with indigenous knowledge through field days, workshops and seminars, is a critical avenue of popularizing the concept of indigenous resource management.

SECTION 6 - STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS

Stakeholder Participation

60. The project is based upon a participatory approach to improve indigenous vegetation management, involving the active participation of different stakeholders in all aspects of project design, implementation, monitoring and evaluation.
61. In the participating countries, a wide variety of stakeholders have interests in natural resources use including the sustainable utilization of indigenous vegetation, biological resources, water resources, and the global environmental impacts of rangeland use, including climate impacts. These stakeholders include farmers and agrosilvo-pastoralists, who practice subsistence agriculture; sedentary livestock owners and transhumance pastoralists; community-based organisations and non-governmental organisations (NGO's), government technical administration at both the central, district and community level. Global interests in biological diversity and climate change are held by international organisations, including the United Nations. Annex V provides a detailed analysis of stakeholder participation.
62. **Direct beneficiaries** of the project will include the rural population – women, men and youth living in the project areas. The project has been designed with their direct inputs. Most of the project activities will be implemented directly by the direct beneficiaries of the project.
63. Overall, it is estimated that the project will directly impact on over 180,000 persons in the project demonstration sites. In Mali, the total population affected directly is 100,000 people, 50% of which are transhumants. In Kenya, a total of 60,000 people, of which 50 % are transhumants are affected, and in Botswana the total population directly targeted is 20,000, none of which are transhumants. The local stakeholders living in these communities, including women, will benefit from increased control over their natural resources as well as training, technology transfer, development of skills. Opportunities will also be provided for the local stakeholder to benefit from techniques and methodologies being employed in various parts of Africa which can be applied in their own local situations. These activities will lead to improved rangeland and indigenous vegetation management, building of local organisational capacities and biodiversity conservation.
64. **Secondary beneficiaries** will include rural residents, beyond the target communities. In addition, long-term benefits will accrue to stakeholders in other parts of the arid/semi-arid zones of Africa once the project results are replicated.
65. Project preparation, which has taken place over a period of 14 months, has involved consultations and site visits with technical, district and local government officials, with local indigenous leader and chiefdoms in the various project areas, a wide cross-section of community groups including women and youth and community-group organisations, village elders/leaders, representatives of village committees, NGOs as well as the research community, led by the University of Oslo. The project document has been prepared by the three participating countries, supported by national and international consultants, the University of Oslo, UNEP and UNDP. In Botswana, the Range Ecology Unit of the Ministry of Agriculture has been responsible for programme development, whereas in Kenya and Mali, the National Environment Secretariat (NES) of the Ministry of Environmental Conservation and the Ministry of Environment, respectively, assumed responsibility for programme development.
66. Throughout project implementation, working relations and collaborations will be maintained with local and

International NGO's and bilateral agencies operating in the demonstration zones dealing with environmental conservation and community-based indigenous vegetation management. The local stakeholders will be encouraged to form community management structures for decision making and implementation at site levels, for negotiation and dialogue with other Stakeholders. These committees are the repositories of environmental matters of the pastoral communities. The rural communities and NGO's will be further involved in a self-monitoring and evaluation exercise in order to contribute to overall project decision-making.

Implementation and execution arrangements

67. The project will be implemented jointly by UNEP and UNDP. Detailed implementation arrangements will be finalised during project appraisal. The division of responsibilities between the two Agencies will also be determined during the appraisal phase. The administrative arrangements for joint implementation of projects are currently being worked out between the two agencies.
68. A Regional Coordination Unit (RCU) will be established, directed by a Regional Coordinator, recruited from one of the participating countries in collaboration with UNEP and UNDP, the University of Oslo, the collaborating regional secretariats and the participating countries, with an assisting expert. The Regional Coordination Unit (RCU) will be located at the site of one of the National Executing Units and will have as some of its main functions *inter alia* the day to day management and overall co-ordination and administration of the regional project activities; serving as a link with other international and regional projects; and serve as the secretariat for both the Regional Policy Steering Committee and the Technical Advisory Committee. It will be in permanent electronic communication with the three National Project Units (NPU's) and the University of Oslo.
69. The RCU will be supported by a Regional Policy Steering Committee (RPSC), which will provide overall policy guidance, comprising of the Ministers of the Ministry of Agriculture in Botswana, the Ministry of Environment in Mali, and the Ministry of Environmental Conservation in Kenya, plus a representative from the University of Oslo, a community representative from each of the participating countries, a representative from the Regional Secretariat collaborating with the Project and a representative of UNEP. The RPSC will be chaired in turn by the relevant Ministers from the participating countries. The Regional Coordination Unit, along with the GEF operational focal points of the participating countries, will serve as the Secretariat for the RPSC. The Technical Advisory Committee (TAC) consisting of selected experts from the scientific, research and training community under the chairmanship of the University of Oslo, will provide advice to the RPSC on particular issues. The RPSC will meet annually, to evaluate the results obtained, and approve the annual work programme and budget of the Regional Co-ordination Unit (RCU) and National Project Units (NPU's); to provide guidance and take the decisions necessary for the proper operation of the project, in conformity with its objectives and approach. The TAC meetings will take place annually and otherwise as often as necessary, in order to evaluate the project status and to make adjustments for the appropriate technical implementation of the project. The RCU will prepare the documents for the RPSC meetings. All coordination bodies will constitute an integral part of existing entities in the countries, so as to ensure maximum national participation.
70. The RPSC will also co-ordinate the research component whereas the University of Oslo will be the lead agency for networking collaborating with other research institutions and universities within and outside the region. Furthermore, training of higher education will be organised through the University of Oslo. This link is considered important for the co-financing of the research component and training.
71. Each country will set up a National Project Unit (NPU) for the project, comprising of a National Project Leader (NPL), a Financial and administrative assistant, a Secretary, a driver and a clerk. The NPU's will be responsible for facilitating and coordinating project execution at the national level, in collaboration with RCU. The NPU will be supported by extension staff in all the specific project sites. The NPL will be responsible for the overall co-ordination and implementation of country-level activities and supervision of the project and support services at the national office. Other responsibilities of NPL are to maintain linkage between the national and the regional office and the research component and organisations, to organise the national committee meetings and training (e. g. seminars and workshops) and to produce and disseminate the project reports.
72. At the national level, two meetings will be held every year. During these meetings, project progress, implementation procedures and strategies will be discussed and communicated to various stakeholders. Those attending the meetings will include: NPL, field managers, representatives of community groups and NGO's and the regional coordinator who is to attend at least one of the national meetings in each country every year. At field sites level, quarterly meetings are to be held and attended by project staff and the community stakeholders.
73. National Advisory groups for project implementation will be established in each participating country to assist and

advice the NPU. The project is designed to be executed by local community groups and NGO's where they exist, with the support from Government technical services. The project staff and the Technical Advisory Committee will develop specific criteria for the final selection of communities and NGO's to participate in the project. Once this is done and the specific community groups and NGO's are selected, participatory project launch workshops will be held at the local level to determine the nature and involvement of the communities.

74. Project resources will be allocated to organise and consolidate community structures. This will include an enhancement and revitalisation of indigenous knowledge, with a view to develop the capacities required for the sustainable management of natural resources in general and more specifically indigenous vegetation, on the contractual basis of support contributed by the project and the technical framework supplied by the public services.
75. Guidelines will be drawn for contracting NGO's, local research and training institutions in order to provide support to rural communities. Representatives of local communities and NGO's will be co-opted in the Technical Advisory Committee. In Regional and Local Committees, representatives of local communities and NGO's will be present. Finally, elected members of National Assemblies and elected local leaders will be co-opted in order to strengthen the grass-root support.
76. In the demonstration zones, community participation will build upon existing indigenous structures, which vary from highly egalitarian social structure of Chiefdoms of the Botswana and the Malian societies to the government administration structure of the Kenyan communities. Project implementation will be the mandate of the project staff, the rural population and NGO's with support from government officials.
77. In addition, working relations will be established between research institutes and universities, in the three countries in collaboration with the University of Oslo. Links are also established with relevant and GEF-related programs undertaken by consortia of national and international organizations such as Desert Margins Initiative (DMI), with ICRISAT as the lead agency, and People, Land Management and Environmental Change (PLEC), which are utilising some of the recommendations of the IPAL Resource Management Guidelines.
78. The communities will participate in the implementation of activities related to rehabilitation of both woody and herbaceous vegetation, soil erosion control, crust breaking and construction of water harvesting structures, building of project infrastructures, (e.g. housing, offices, wells, etc.). They will also contribute to grazing management and controls and protection of wildlife habitats, provide animal transport and make their land available for demonstration activities. These contributions will mainly be in kind, and the modalities of participation will be defined in Action Plans prepared with the communities and approved by them. Community participation has been evaluated and incorporated in the budget by demonstration sites, and the physical outputs of the project will become the property of the communities.

SECTION 7 - INCREMENTAL COSTS AND PROJECT FINANCING

Incremental Costs

79. Incrementality of the project is based on the fact that the three countries are faced with constraints and will need additional assistance to be able to take advantage of synergies and lessons from other countries to develop sustainable models for indigenous vegetation rehabilitation. Therefore, the incremental costs will be able to ensure the development of appropriate and sustainable models that would eventually generate more global benefits in biodiversity conservation.

Project Financing

80. Project financing is projected to come from a number of sources, namely host country support; through the University of Oslo, Norway and the GEF incremental cost financing. Additional resources are being solicited from a number of potential donors who have expressed interest in co-financing the project. The total project costs, excluding PDF-B, is \$12.604 million of which \$8.724 million is GEF increment, US\$2.150 million is governments' contribution, \$1.150 million is University of Oslo co-financing and \$0.25 million other co-financing. Table A outlines the project cost by component.

Table A: Summary of Total Cost by Project Components – US\$ millions

Component	Government Contributions	GEF Increment	University of Oslo co-financing	Other co-financing	TOTAL
1	0.575	1.500		0.100	2.175
2	0.250	0.700		0.100	1.050
3	0.125	2.550		0.050	2.725
4	0.300	1.290			1.590
5	0.700	1.750			2.450
6	0.200	0.416	1.150		1.766
Appraisal Mission	-	0.060			0.060
Monitoring and Evaluation	-	0.140			0.140
Support Cost	-	0.318			0.318
TOTAL*	2.150	8.724	1.150	0.250	12.274

*Does not include PDF-B costs of \$330,000.

SECTION 8 – INSTITUTIONAL FRAMEWORK AND EVALUATION

8.1. Project Implementation Institutional Arrangements

A. Terms of Reference for Regional and National Project Structures

B. The Regional Policy Steering Committee

C. Terms of Reference for the Regional Policy Steering Committee

The Regional Policy Steering Committee (RPSC) will be the highest body in the project hierarchy (see Appendix D for organigram) with the responsibility of providing overall policy guidance to both Regional Coordination Unit (RCU) and Technical Advisory Committee (TAC). Its specific Terms of Reference are to:

- a. Review project progress with respect to objectives, strategies and workplans. Advise on how to capitalize upon successes, how to overcome constraints and how to modify strategies and activities as appropriate;
- b. Review, modify as appropriate and approve the annual work programs of the RCU, TAC and NPUs and their respective budgets;
- c. coordinate with the Secretariat of the African Ministers' Conference on the Environment (AMCEN, especially the Desert and Islands Committee), CILSS, IGAD, SADC and the Regional Unit at the African Development Bank (ADB) that is responsible for the implementation of CCD in Africa;
- d. advise the RCU and the NPUs on how best to mobilize resources to complement project resources, including, eventually for the timely replication of successful models from the pilot zones within the three participating countries and for providing needed follow-on at specific sites;
- e. advise on adequate institutional and legal frameworks for empowering the beneficiary communities in the seven sites of the project, so as to effectively manage natural resources in their respective areas;
- f. liaise with any other relevant bodies for the benefit of the project;
- g. elaborate guidelines involving intellectual property rights (digitized topographic maps, indigenous knowledge systems, publication and dissemination of research findings generated by the project, etc);
- h. ensure integration of gender concerns and issues into the operations of the project activities at all levels;
- i. monitor compliance of the NPUs and RCU adherence to the GEF implementing agencies' administrative procedures for project execution, and monitor the timely conduct of financial audits of the use of IA's funds by the project structures;
- j. monitor and ensure the timely and adequate flow of funds from UNDP, UNEP and University of Oslo, and from Governments to the NPUs and RCU for the smooth execution of project activities.

The Composition of the RPSC

- a) Representatives of the Governments of Botswana, Kenya and Mali;
- b) UNEP/GEF and UNDP/GEF;
- c) University of Oslo
- d) One Community Representative from each pilot zone
- e) Representatives of UNDP country missions as needed (They should all participate at the first meeting. At subsequent meetings their presence will depend on whether administrative or financial issues concerning their country will be discussed).
- f) Ad hoc specialist advisors from the Technical Advisory Committee (TAC).

The Regional Coordinator and the National Project Leaders will be non-voting members. The Regional Coordinator will act as Secretary to the RPSC.

The Regional Coordinator in close consultation with the TAC and NPUs will prepare the core agenda for RPSC meetings. The Chairman of the RPSC will be a government representative on a yearly rotation from each of the participating countries in alphabetical order. The annual meeting will be held in the country chairing the RPSC.

Regional Coordination Unit (RCU)

The principal role of the Regional Coordination Unit (RCU) will be to advance the state-of-the-art community based management systems of indigenous vegetation/range resources in African drylands, in close collaboration with the national governments. It will have the overall responsibility of coordinating the activities of the National Project Units (NPUs) charged with the implementation of the project in the three countries. It will also serve as the secretariat for both the Regional Policy Steering Committee (RPSC) and the Technical Advisory Committee (TAC). The RCU will be hosted by the Government of Botswana. The specific Terms of Reference (TOR) of RCU are given below.

Technical Functions are to:

- a) Define key issues, harmonize research objectives and methodologies, and develop guidelines for the development of replicable models and demonstration trials for sustainable, community-based management of indigenous vegetation;
- b) review, summarize and disseminate to the NPUs relevant experience and documentation from other projects/programs working on the development of sustainable management systems for African drylands;
- c) provide technical backstopping to NPUs;
- d) organize workshops/seminars for exchange of experience and transfer of technology within the overall framework of the objectives of the project;
- e) arrange study tours and exchange visits for land users and land authorities;
- f) disseminate technical information, including published articles in scientific journals on the research findings from the project;
- g) remain in constant contact with all NPUs and the University of Oslo.

Management and Financial Functions are to:

- a) assist the participating countries in the mobilization of complementary resources available at regional and global scales as needed and for the eventual replication of successful components of the pilot projects;
- b) implement and administer regional activities (regional workshops, seminars, reviews, studies, regional research, etc) in consultation with the NPUs, and report annually on their progress to RPSC;
- c) monitor and compile quarterly and annual progress reports made by the NPUs for submission to RPSC, including the notification of administrative and technical issues for the consideration of the RPSC;
- d) guide and facilitate the database, including protocols, research and training components and the development of replicable models;
- e) act as secretariat to both the RPSC and TAC.

Policy Formulation Functions are to:

- a) assist NPUs in the integration of lessons learned from the pilot projects into development of improved policy frameworks for community-based management of indigenous vegetation/natural resources. These policies should become an integral part of sustainable development strategies.

- b) organize seminars/workshops/exchange visits to sites for the project principal stakeholders to exchange views and recommend appropriate policies for achievement of the goals and objectives of the project;
- c) provide guidelines to the NPUs on the strategies and policy/legal measures for empowering the beneficiary pastoral communities to sustainably manage natural resources.

The Composition of the RCU:

- a) Regional Coordinator; and
- b) Regional Technical Expert
- c) Support staff as needed depending on where the RCU is housed.
Admin Assistant/Secretary
Driver/Messenger

Terms of Reference for RCU Staff

- a) **The Regional Coordinator** will have the overall responsibility for the day-to-day management of the RCU and coordination of project activities. S/he will have the following specific duties:
 - Be responsible for the timely coordination of the execution of the technical, policy formulation and management and financial functions of the RCU as given in sections (i) – (iii) above;
 - Prepare the annual meetings of the RPSC and TAC, synthesis of National Project Unit reports and of issues/concerns for consideration of the RPSC, and ensure that their decisions are implemented accordingly;
 - Prepare the agenda for the annual RPSC meeting in full consultation with the TAC;
 - Prepare the annual workplan of RCU and its budget;
 - Act as the secretary to both the RPSC and TAC;
 - Manage the RCU staff;
 - Represent the RCU in meetings and conferences to which RCU is invited to attend;
 - Ensure proper management of the properties of the RCU.

Qualifications of the Regional Coordinator:

The minimum requirements for the position of a Regional Coordinator are 10 years of technical and managerial experience dealing with development issues. The RC should have at least an MSc and preferably higher degree in biological or environmental sciences (e.g., wildlife management, natural resource management, rangeland science and management) with a background in research and with considerable training and experience in biodiversity and soil/land management in arid lands, have a good command of both English and French; and be creative and sensitive to the demands of all the principal stakeholders, including the Governments of the three participating countries.

- b) **Regional Technical Expert** will provide both technical and administrative backup to the Regional Coordinator. S/he will have the following specific duties:
 - Act as the Regional Coordinator in his/her absence;
 - Provide technical backstopping to the NPUs;
 - Assist in the coordination of the targeted research component of the project coordinated by the University of Oslo;
 - Participate in the identification of priority areas for targeted research and in the development of conceptual frameworks and models of community-based rehabilitation and management of indigenous vegetation that can be replicated once tested and found to be successful;
 - Help in design of databases and in development of methodologies for community-based rangeland monitoring and inventory programmes.

The Regional Technical Expert is envisaged to be a scientist with a minimum of 10 years of practical experience with applied research and model development in the general areas of range management and ecology. S/he will have a doctorate or equivalent high degree in range management or related disciplines. S/he will preferably have published in professional journals. English proficiency required; French proficiency preferred. Training and experience in soil and biodiversity conservation in arid lands will be an asset.

The Technical Advisory Committee

The technical advisory committee will consist of a group of high-level specialists who will provide technical advice to all

project structures, in particular to the RCU and the NPU. TAC will provide written copies to RPSC of all minutes and all written advice they provide to any project structures. It should guide the development of the research program and will oversee the development of the model(s) for community-based rehabilitation and management of indigenous vegetation. TAC should also be responsible for dissemination of technical information from the project and from similar initiatives in other countries. TAC will meet at least once per year just prior to the RPSC meeting, and on a rotating basis in each participating country. They should develop mechanisms for addressing issues and making decisions between meetings.

i Functions are to:

- a. Shortly after project startup, the TAC will assist the RCU and NPUs to conduct an assessment of each project site to define specific key issues that will need to be addressed in the development of sustainable models for the management of indigenous vegetation;
- b. Assist RCU and NPUs to recommend an appropriate mechanism to ensure the networking among the three national databases and investigate the opportunities of establishing links with the databases of CILSS, IGAD and SADC;
- c. Help RCU and NPUs define the data needs for the database development and the methodologies for their collection;
- d. Along with RCU and NPUs, Provide technical backstopping to collaborating national institutions in the combination of community-based indigenous knowledge with the finding of scientific research and practical experiences from African drylands in the development of sustainable models;
- e. Help RCU and NPUs define the applied research needs and help develop a five-year research program in consultation with collaborating national research institutions to address community priorities as identified by the project ;
- f. Help RCU and NPUs define the monitoring and evaluation methodologies and indicators;
- g. In collaboration with RCU and NPUs, establish networking with relevant institutions and programs (for example: WOCAT, Desert Research Center in Namibia, African Institute of Natural Resources, etc.);
- h. Assist the Regional Coordinator in the preparation of the core agenda for the RPSC meetings.

- ii. **Composition:** TAC will have a total membership of five (5) renowned scientists. Three will represent the participating countries (one each), and should be selected by the RPSC in consultation with the African Academy of Sciences (located in Nairobi). A fourth member will be from the University of Oslo and the fifth member will be an international scientist. Both will be selected by the RPSC upon nomination from the African Academy of Sciences and the Third World Academy of Sciences (located in Trieste, Italy). The composition of the TAC should reflect the multidisciplinary nature of the project. The Regional Coordinator will be a non-voting member of the TAC in his/her capacity as its secretary.

The National Project Unit (NPU)

The overall function of the NPU is to ensure that the project is developed at the national level in accordance with the objectives and strategies of the project document. In particular, the NPU will ensure that communities are empowered to manage their indigenous vegetation resources. Furthermore, they will ensure that the indigenous vegetation management systems to be developed are based on traditional systems that may be modified as appropriate by modern/improved techniques as selected by the communities. **Specific Functions are given below.**

Technical Functions:

- a) Define technical issues to be addressed in the development of models for the sustainable, community-based management of indigenous vegetation;
- b) Provide technical support to the Community Support Units (CSUs);
- c) In consultation with the target communities, identify and prioritize research and training needs in support of these communities and of project objectives. Develop a training plan;
- d) Organize training activities in accordance with the training plan;
- e) Advise the RPSC and RCU of problems and constraints for which assistance is needed;
- f) Review existing national initiatives in community based natural resource and biodiversity management.

Managerial and Financial Functions:

- a) Ensure that all NPU resources are used efficiently in support of the project objectives and in support of the CSU for the target communities;
- b) Manage funds in conformity with the administrative and financial procedures of UNDP or UNEP as appropriate;
- c) Ensure that funds are advanced by UNDP or UNEP in a timely fashion that does not hinder the work of the CSUs;
- d) Prepare budgeted annual work plans in lines with the guidelines provided by the RCU;
- e) Prepare quarterly and annual technical reports in line with RCU guidelines and quarterly financial reports in line with UNDP guidelines for national execution ;
- f) Work with the CSUs to develop a set of criteria/guidelines for the procurement of services, equipment and materials in support of the target communities;
- g) Prepare TOR, advertise and competitively award contracts for the supply of services, equipment and materials to the project and the CSUs;
- h) Ensure that materials, technical assistance and services are provided to the CSU in an efficient and timely fashion;
- i) Ensure that after-project sustainability concerns are addressed in the choice of technologies and in the procurement of equipment and materials;
- j) In close consultation with the Government, seek additional funds/resources from other donors and institutions in complement to the identified project resources;
- k) Coordination of project activities with government, non-government and donor organizations;
- l) Represent the project at relevant meetings/conferences/advisory boards. Attendance at meetings that have little relevance to the furtherance of project objectives will be minimized;
- m) Facilitate the research program, help identify candidates for training and help obtain needed permits for research.

Policy

- a) Help determine the need for a formal legal status for the target communities as appropriate;
- b) Identify policy constraints to the achievement of project objectives and bring them to the attention of the Regional Coordinator and the appropriate local, regional and national government bodies ;
- c) Propose policy reform options as appropriate ;
- d) In consultation with the CSUs, analyze the advantages and disadvantages of proposed policy changes coming from the RPSC;
- e) Ensure the formulation/application of policies to address gender concerns and the rights of marginalized groups.

The Composition of the NPU

- a) National Project Leader
- b) Financial and Administrative Assistant
- c) Secretary
- d) Driver/Clerk/Messenger

Terms of Reference for Project Core Staff

- a) The National Project Leader (NPL) will have the overall responsibility of the day-to-day management of project activities, including the smooth implementation of the functions of NPU as specified in sections (4- i through 4-iii). S/he will have the following specific duties:
 - Provide strategic guidance to the CSUs in the management of their respective units;
 - Prepare the annual meetings of the principal stakeholders and prepare them to participate effectively at the RPSC meetings;
 - Prepare the annual workplan of the NPU and its budget;
 - Prepare quarterly progress reports on the status of the implementation of project activities, including technical, financial and policy matters, for the consideration of the national advisory committee, RCU, UNDP/GEF, UNDP Country Offices, and UNEP/GEF;
 - Evaluate the performance of the project staff;
 - Represent the NPU in meetings and conferences to which NPU is invited to attend;
 - Ensure proper management of the properties of the project;
 - At the end of the fourth year, develop a plan for the appropriate follow-on to the project. This may be full take-over of all relevant activities by the target communities themselves, or it may involve the planning for a subsequent phase.

Qualifications of the National Project Leader:

The minimum requirements for the position of a National Project Leader (NPL) are 10 years of technical and managerial experience dealing with rural/community development issues. The NPL should have at least an MSc or its equivalent in environmental sciences or related disciplines; good command of English or French (or a national language); and be creative and sensitive to the demands of all the principal stakeholders at the project sites as well as relevant institutions of government; and knowledgeable about GEF, UNDP and UNEP procedures.

- b) Financial/Administrative Assistant/Secretary will assist the NPL in the management of NPU. S/he will ensure that proper financial and administrative procedures are absolutely adhered to by all the project staff, including NPL and executing agencies at the national and local levels (e.g. NGOs, CBOs and private and public sector agencies). S/he will supervise the support staff (drivers, messengers and clerks). S/he will have experience in office management including financial management and accounting, word processing, Microsoft excel and lotus.
- c) Driver/Clerk/Messenger will be responsible for the proper and routine maintenance of the project vehicle (s). He will ensure the timely delivery and collection of the messages of the project.

The Community Support Units (CSU)

The CSUs will be project field units whose primary purpose will be to assist the community to access the services that they need to rehabilitate and manage their native vegetation and to implement/achieve related activities/objectives.

Functions of the Community Support Units (CSU)

i. Technical

- a) Ensure that the indigenous vegetation management systems to be developed are based on traditional systems with modern/improved methods as selected by the communities ;
- b) Identification and prioritization of research and training needs in consultation, and in support of, the target communities ;
- c) Coordination of CSU activities with other communities, government agencies, NGOs, other donor projects, private sector interests and other bodies that are involved with the project area ;
- d) Outreach and awareness raising to neighboring communities to make them aware of the possibility of the future replication of the project approach if this pilot phase proves successful.

ii. Administrative & Financial

- a) Ensure that all the resources of the CSU are used to support the pastoral communities targeted by the project in the development of sustainable resource use systems and livelihoods ;
- b) Prepare annual work plans and budget in lines with the guidelines prepared by the RCU; ;
- c) Prepare quarterly progress reports ;
- d) Manage CSU funds in conformity with the UNDP guidelines for national execution of projects;
- e) Actively involve the communities in the development of the TOR and in the recruitment and procurement of all staff, services and equipment in support of the communities ;
- f) Work with the communities and the NPU to develop a set of criteria/guidelines for the procurement of services in support of the target communities ;
- g) Ensure that CSU resources are used as efficiently as possible to maximize the results obtained ;
- h) Ensure that after-project sustainability concerns are addressed in the choice of technologies and in the procurement of equipment and materials.

iii. Policy

- a) Monitor the realization of the government's obligation to formally recognize and protect the rights of the target communities to control access to their rangelands including their right to exclude outsiders as needed to ensure range rehabilitation and proper management. Advise the NPU as needed if there are problems.;
- b) Help determine the need for a formal legal status for the target communities ;
- c) Identify policy constraints to the achievement of project objectives and bring them to the attention of local government and the NPU ;
- d) Propose policy reform options as appropriate to the NPU and/or to local government ;
- e) In consultation with the communities and local government, analyze the advantages and disadvantages of proposed policy changes coming from higher levels of the national and regional project bodies.

iv. Composition of the CSU

Mali

- a) CSU Manager
- b) Range manager
- c) Agronomist
- d) Secretary/Administrative assistant
- e) Driver/mechanic/clerk/messenger
- f) Guide/interpreter
- g) Consultants as needed

Kenya

- a) CSU Manager
- b) Rangeland ecologist?
- c) Secretary/Administrative assistant
- d) Driver/Mechanic
- e) Consultants as needed

Botswana

- a) CSU Manager
- b) Rangeland Ecologist
- c) Secretary/Administrative Assistant
- d) Driver/mechanic/clerk/messenger
- e) Consultants as needed

D.

v. Generic Terms of Reference for CSU Managers

The manager of CSU will have the overall responsibility for the day-to-day management of the Community Support Unit. S/he will ensure the proper and timely implementation of its functions as stated in sections 5- i – through 5-iii above. S/he will also be responsible for identifying traditional management systems to be included in the project, and for the day-to-day relations with the University of Oslo. S/he will have 10 – 12 years of practical experience with community development with a strong background in participatory techniques and community-based approaches to development. The manager will have managerial and leadership qualities and a minimum of MSc/MA in community development, sociology, development economics or environmental sciences.

Role of the University of Oslo

The University of Oslo will have overall responsibility for the Regional Coordination Unit and for the research and training component of the project. The research and training component will be implemented in collaboration with research and training institutions in the three countries under signed agreements between the University of Oslo and these institutions. The RCU will be located at a field research facility at one of the seven project sites. The University of Oslo will contract with one of their collaborators or with another institution yet to be identified (preferably an international institution with a conservation/sustainable development mandate), to manage the RCU.

Technical Functions:

- Be responsible for the development of the models for sustainable, community-based management of indigenous vegetation in the three countries;
- Coordinate and facilitate the research and training component. Ensure that research done for Masters, PhD and post-doctoral programs will be done in the target areas on research needs identified jointly by the project working with the pastoral communities.

Administrative and Financial Functions:

- Be responsible to UNEP for the administration of GEF funds for the RCU;
- Be responsible to NORAD and/or other donors for the administration of co-financing funds.

8.2 Roles of the GEF Implementing Agencies During Implementation

UNEP has been the lead GEF implementing agency during the project design. The later stages of project design were done jointly with UNDP. The project will be implemented jointly by UNEP and UNDP at the technical and policy levels.

At the technical and policy levels, both UNEP/GEF and UNDP/GEF will backstop and support the overall project (independent of relative responsibilities for the administration of GEF funds.) The principal technical and policy involvement of the two agencies will be through routine backstopping and as members of the Regional Policy Steering Committee.

At the administrative and financial level, UNEP will have responsibility for the GEF funding for the RCU. UNDP country missions will be responsible for the administration of GEF funds for the NPU and CSU country components. The administrative and financial procedures for each implementing agency, respectively, will apply. UNDP National Execution (NEX) Guidelines will apply to the funding for the country components.

The total GEF funding will be split between UNEP headquarters and UNDP headquarters based on the totals for the RCU and for the country components, respectively. UNEP will disburse to the University of Oslo and UNDP headquarters will disburse to the three UNDP country missions (See attached budget).

Role of UNEP

UNEP was the lead GEF implementing agency for the design of this project. During project implementation, their functions will be:

Technical

Since this is a pilot project, UNEP/GEF should seek to play a leading role in the implementation of the project, specially with respect to :

- Routine backstopping by a UNEP Task Manager, supervised by the Programme Officer for Land Degradation;
- Contribution of experiences and lessons learned from other UNEP/GEF projects.

Administrative and Financial

The full amount of disbursement and administrative and financial oversight for the funding for the RCU.

Policy

- Active member of the Regional Policy Steering Committee

Role of UNDP

Technical

UNDP/GEF will play a greater role in the translation of lessons learnt from the pilot project into development strategies and programs, and will therefore participate in:

- Routine backstopping by UNDP/GEF (approx. 15 days/yr. of technical and administrative support by an Africa-based, GEF Task Manager). Selected site visits will be included;
- Contribution of experiences and lessons learned from other UNDP/GEF projects.

Administrative and Financial

- Disbursement and administrative and financial oversight by UNDP country missions for the funding for the national components (NPUs and CSUs) in Botswana, Mali and Kenya;
- Routine backstopping by a designated GEF specialist (see Technical above).

Policy: Active member of the RPSC

8.3 . CORRESPONDENCE

All correspondence regarding substantive and technical matters should be directed to:

At UNEP:

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With copies to:

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At UNDP

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Regional Coordinator for Africa
UNDP-GEF Lusaka, Zambia
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With copies to:

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All correspondence regarding financial and administrative matters should be addressed to:

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SECTION 9. MONITORING, EVALUATION, DISSEMINATION, LESSONS LEARNT AND REPORTING REQUIREMENTS

9.1 Monitoring, Evaluation and Dissemination

81. A monitoring and evaluation programme will be an integral part of the project, in that it will allow regular and in some cases continuous feedback on each activity and allow adjustments to be made as needed. Three types of monitoring and evaluation will be used, formal, informal and scientific. An initial Participatory Rural Assessment to identify the main leaders from key stakeholders, a mid term formal evaluation, at the beginning of the third year of the project and an end of project review will be key components of the formal review.
82. Scientific monitoring and evaluation will also be a critical element of the overall project and evaluation programme. It is envisaged that through implementation of the activities, measures of achievement will be indicated by environmental accounting of biodiversity through increased restoration of degraded soils, improvements in soil nutrient contents, increase in vegetation cover, increase in biomass of range vegetation, increased forage production by irrigation and increased soil water after the five years. The return surveys of project sites to be carried out after 5 and 10 years will be compared with surveys undertaken during the project phase. The national and regional reports will provide means for verifying the information.
83. Through periodic evaluation reports, numbers of established and active community institutions and improved services for the communities will be assessed. Adoption of new production methods and household industries together with alternative economic activities introduced in the project areas will provide a basis for project performance assessment.
84. The community-based action plans and master plans prepared for each demonstration site and periodic monitoring of their implementation will be the measure of achievement. Training courses held and training materials developed will indicate levels of enhanced capacity of local communities in natural-resource management.
85. The verifiable indicators of project achievement identified in the logical framework will guide the type of reporting required. Six monthly reports will be prepared by each National Team Leader on the feedback and direct observations in the field and transmitted to the Regional Coordinator for review and comments. The reports will address progress and obstacles and identify necessary adjustments and timetable for the next six months period. The reports will also form part of the Regional Coordinators progress report to the Regional Project Steering Committee.
86. Project monitoring will be undertaken by the project staff through the use of the project logical framework and the established project management systems at stipulated periods. Monitoring will also be part of the research component.
87. The economic benefits achieved in reducing soil loss, increasing soil water infiltration, improved crop residue production and applying livestock manure to improve soil nutrients can be estimated (see incremental cost arrangements). Moreover, an improvement of the resilience to drought results in greater secondary productivity and an increase in the monetary values of livestock. By the suggested methods economic gains achieved per unit area for increasing livestock forage can be determined. By the same token, drought loss of livestock and its financial implications can be projected. Project performance indicators will be used to evaluate project progress based on project reports, review missions and stipulated project implementation phases. Project results will be disseminated through technical reports, newsletters, seminars, workshops and media as outlined in the project document.
88. The results of the project will be disseminated through environmental educational activities, and mass media campaigns, public competitions and field days. All stakeholders, including Communities, Project Staff, Government Ministries and Departments, NGOs, Research Communities and Donors will also disseminate land degradation results through detailed technical reports and briefs of the project.

The following are the standard M&E requirements for UNDP projects that will apply to this project.

Tripartite Review (TPR)

The tripartite review (TPR) is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to Tripartite Review (TPR) at least once every twelve months by representatives of the

Government, the executing agency and UNDP, and the first such meeting to be held within the first twelve months of the start of full implementation. The Project Support Unit shall prepare an Annual Project Report (APR) and to submit to UNDP. The APR must be ready two weeks prior to the TPR.

The APR will be used as one of the basic documents for discussions in the TPR meeting. The National Project Director/CTA presents the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The NPD/CTA also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Six-monthly APR's will be provided during the first two years of the project to ensure that design and inception activities are closely monitored, and subsequently the APR will be done on an annual basis. Separate reviews of each state component may also be conducted if necessary. Monitoring and Evaluation Indicators will be built into the project in consultation with UNDP.

Terminal Tripartite Review (TTR)

The terminal tripartite review is held in the last month of project operations. The Project support Unit is responsible in preparing the Terminal Report, and to submit to UNDP. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least two months prior to the terminal tripartite review. The Terminal Report will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its immediate objectives and contributed to the broader environmental objective, and decides whether any actions are still necessary.

Project Implementation Review (PIR)

A major tool for monitoring the GEF portfolio and extracting lessons is the annual GEF Project Implementation Review (PIR). The PIR has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects.

The PIR is mandatory for all GEF projects that have been under implementation for at least one year at the time that the exercise is conducted. A project becomes legal and implementation activities can begin when all parties have signed the project document. The PIR questionnaire is sent to the UNDP country office, usually around the beginning of June. It is the responsibility of the Project Director/CTA to complete the PIR questionnaire, with the oversight of the UNDP Country Office.

Mid-term Evaluation

An independent Mid-Term Evaluation will be undertaken at the end of the second year. The Mid-Term Evaluation will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organisation, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document.

Final Evaluation

An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at early signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The organisation, terms of reference and timing of the final evaluation will be decided after consultation between the parties to the project document.

Regular Monitoring and Evaluation

The project will also be closely monitored by the UNDP Country Office through quarterly meetings or more frequently as deemed necessary with the National project Director. This will allow to take stock and to trouble shoot of any problems pertaining to the project quickly to ensure smooth implementation of project activities.

9.2 Lessons learnt

89. The first lesson from past, present and ongoing projects is that stakeholders must be fully involved from the design, implementation and subsequent evaluation and monitoring phases of the project. The "Bottom-Up" approach, where projects emanate from the communities rather than from national capitals, appear to be successful. Involvement of all gender members of the communities is a must for projects. Incentives should be provided to local communities even if it is on food for work basis so that they can have interests in the projects. The current thinking in non-equilibrium models of managing rangelands coupled with indigenous knowledge should be revisited. In view of the sedentarized nature of the current pastoralist communities, earlier recommendations of water distribution points should be reviewed. Due consideration must be given to reviewing and changing policies related to land tenure, land-use plans, livestock production and marketing, alternative livelihoods, and alternative energy sources.
90. The project document has been reviewed by a STAP Roster Expert (Annex III); who agrees that the project is scientifically and technically sound, in that: it is based on sound consideration of existing scientific information; land degradation research components and problem solving is integrated; the testing of natural resource management systems is an integrated part of the project; the objectives, indicators and means of verification in the logical framework matrix makes it possible to monitor and evaluate project activities and results; the Project Advisory Committee will provide the project with the necessary advise.
91. The reviewer also identifies the replication potential of the project as an advantage as well as the stakeholder participation and the participatory approach, which is central to the project. The latter will contribute to the sustainability of the project as indigenous knowledge constitutes the basis of the solution to land degradation problems in Africa.

9.3 REPORTING requirements

Each national project management unit will be responsible for reporting to UNDP, with copy to Regional Coordination Unit and UNEP, as required by standard reporting requirements (see M & E Kit and Manual, and NEX guidelines). In addition, a yearly PIR will be completed by the Regional Coordination Unit, with input from each of the national management units.

Inception Report (IR)

The inception report is to be prepared by the Project CTA with the assistance of the project experts as relevant. The IR will be prepared no later than three months after project start-up and will include a detailed Workplan and Budget for the duration of the project, progress to date on project establishment and start-up activities and any proposed amendments to project activities or approaches. The report will be circulated to all the parties who will be given a period of one calendar month in which to respond with comments or queries. The report will also be reviewed by UNDP and GEF to ensure consistency with the objectives and activities indicated in the Project Document.

(b) Annual Programme/Project Report (APR)

The Annual Project Report (APR) is designed to obtain the independent views of the main stakeholders of a project on its relevance, performance and the likelihood of its success. The APR aims to: a) provide a rating and textual assessment of the progress of a project in achieving its objectives; b) present stakeholders' insights into issues affecting the implementation of a project and their proposals for addressing those issues; and c) serve as a source of inputs to the Tripartite Review (TPR). The main project stakeholders participate in the preparation of the APR.

The APRs will be prepared every six months during the first year of the project, and then annually. The APRs will detail activities undertaken since the last APR, milestones reached, key results and achievements, problems encountered and any other issues that need to be highlighted.

(c) Periodic Status Reports

As and when called for by the Project Director, the government or UNDP, the Project CTA will prepare Status Reports, focusing on specific issues or areas of activity as stipulated by the querant. The request for a Status Report will be in written form, and will clearly state the issue or activities which need to be reported on. These reports can be used as a form of specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. The parties are requested to minimize their requests for Status Reports, and when such are necessary will allow reasonable timeframes for the preparation of these Reports.

(d) Technical Reports

Technical Reports are detailed documents covering specific areas of analysis or scientific specialisations within the overall project. As part of the Inception Report the Project Director/CTA will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants as Final Reports for their technical inputs, and should be comprehensive, specialised analyses of clearly-defined areas of research within the framework of the project and its sites.

(e) Project Publications

Project Publications will form a key method of crystallising and disseminating the results and achievements of the Project. These publications will be scientific or informational texts on the activities and achievements of the Project, in the form of books, journal articles or multimedia publications. These Publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The Project Director/CTA will determine if specific Technical Reports merit formal publication, and will also (in consultation with the government and other parties and with the help of external specialists and staff where necessary) plan and produce these Publications in a consistent and recognisable format and identity. These Publications will form the most visible public output of the Project, and as such should be prepared and presented to the highest scientific and technical standards.

(f) Project Terminal Report

During the last three months of the project the Project Director/CTA will prepare the Project Terminal Report. This comprehensive report will summarise all activities, achievements and outputs of the Project, lessons learnt, objectives met and missed, structures and systems implemented, etc. and will be the definitive statement of the Project's activities over the five-year duration. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

(g) Other Publications and Publicity Activities

In order to ensure international dissemination of project results, *a high-quality publication of results* will be prepared, based upon the Project Terminal Report and previous Project Publications. Finally, it will be useful to hold at least one *international workshop* at which policy makers in neighbouring countries can be made aware of the country's progress in achieving the project's goals.

SECTION XI: LEGAL CONTEXT

This project document shall be the instrument envisaged in the Supplemental Provisions to the Project Document. The host-country implementing agency shall for the purpose of the Supplemental Provisions to the Project Document, refer to the Government co-operating agency described in the Supplemental Provisions.

All activities stipulated in the Project Document shall be implemented accordingly. However, should there be a need to make changes/modifications to any of the agreed activities, all signatories of the Project Document must concur, before such changes are made.

The following amendments may be made to the original Project Document, even if they are signed only by the UNDP Resident Representative, provided the latter assumes that all other signatories of the Project Document have no objections to the amendments:

- Revisions in, or additions to, any of the Annexes of the Project Document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance.
- Revisions which do not result in a major changes in the project's immediate objectives or outputs, and which are attributable to a reordering of the activities or inputs in order to improve the realisation of the objectives or the outputs.
- Necessary yearly revisions which are made to reorganise the provision of already scheduled inputs, to reflect an increase in the cost of expert services or other services due to inflation.

The government executing agent designated on the cover page to this project document has been duly delegated by the

government coordinating authority to carry out this project and accordingly will follow the NEX accounting, financial reporting and auditing procedures set forth in the following documents as may be amended by UNDP from time to time.

- The Accounting and financial reporting procedures set out in UNDP Programming Manual
- The UNDP Audit Requirements set out in the UNDP Programming Manual and, the UNDP Government Execution Manual (GEM).

The above documents are an integral part of this project document although incorporated herein only by reference. They have already been provided to the government and said Government executing agent.

Auditors to the project will be officially designated. Such auditors, and/or other officially appointed auditors shall undertake periodic management and financial audits of the project in accordance with UNDP auditing procedures for nationally executed projects, pursuant to the Government's overall national execution responsibilities under the Project Document and as set out in the documents listed above.

In addition, all accounts maintained by the government for UNDP resources may be audited by the UNDP internal Auditors and/or the United Nations Board of Auditors or by public accountants designated by the United Nations Board of Auditors.

Section XII; Prior Obligations and prerequisites

11.1 Prior Obligations

Ratification of the CBD is a precondition for UNDP-Gef assistance. All countries have ratified the CBD.

11.2 Prerequisites

No actions or inputs from governments or NGOs involved with this project are considered necessary as prerequisites. The signatures of governments to this document indicate their agreement.

ANNEXES

- I Incremental Cost Annex
- II Logical Framework Matrix
- III STAP Roster Technical Review
- IV Root Cause Annex
- V Public Involvement Plan Summary
- VI Targeted Research Annex
- VII Budget in UNDP format
- VIII Regional Component Budget (UNEP)
- IX Project organigramme

ANNEX I. INCREMENTAL COSTS

1. The overall goal of this project is to develop sustainable methods of combating land degradation in order to conserve biodiversity, which in turn will boost the local pastoral economy of the project areas.

Global environmental objectives.

2. The eventual replication of successful and sustainable models towards control of land degradation, will contribute to restoring soil fertility and the indigenous vegetation, will provide local as well as global benefits and thereby contribute positively to the fulfilment of the international conventions on biodiversity, climate change, desertification and international waters.

Baseline.

3. The arid and semi-arid zone of Africa is characterised by low-diverse but unique flora and fauna. Environmental conditions tend to be uniform over vast geographic areas and most species occur over broad geographic ranges. Since species and gene pools that are well adapted to drier areas are few in number, the relative loss of biodiversity in arid zone environments is particularly great. The species in this ecosystem have unique morphological, physiological and genetic characteristics that are specific to arid and semi-arid Africa, and unique in the world.
4. The baseline situation in all project areas as in the arid and semi-arid areas zone as a whole, is that there is pervasive land degradation and consequent loss of biodiversity. Given the high percentage of arid and semi-arid lands in the countries, each of the countries has over a long period developed policies and programmes directed to these ecosystems. Activities in the demonstration areas include Government programmes, national and local policies, NGO programmes and donor supported projects (Table B). The analysis, based on available information, shows that Government and other donor expenditures in the project areas are over US\$11 million a year of which US\$ 9 million is in Botswana and over US\$ 1 million a year in Mali and Kenya. However, much of this expenditure is in nation- or region-wide programmes and are generally poorly integrated across sectors, and not focussed on a comprehensive approach to community planning and action.

Table B: Annual Baseline Expenditures, estimates, US \$ 1000's.

	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	TOTAL
Botswana*	3000	300	1000	5005	30	100	9445
Kenya#	170	100	200	490	50	27	1037
Mali□	300	20	300	600	50	20	1290

5. = Based on project data for Botswana and Government expenditures in the project areas.

6. # = Represents approximately 70% of project activities in the area.

7. □ = Estimated, based on available data.

8. Baseline policies in Botswana center around the agricultural policy (Agricultural Development Policy, Policy on the Development of agricultural associations, Water Development Policy and Settlement Policy, on the use of agricultural resources and Alternative Livelihood Strategies, and on livestock marketing and agricultural products). Other policies relevant to the project relate to droughts (Drought Management Policies and Strategies), to land tenure (Tribal Grazing Land Policy), to forestry (Forestry Development Policy) and to wildlife management (Policy on Wildlife Utilization). Finally, the policy on science and technology defines the framework for scientific exchange.
9. At the local and national levels, several NGOs in Botswana have activities relevant to the project in terms of awareness raising, and applied research and monitoring such as the Kalahari Conservation Society, Forum for Sustainable Development, Forestry Association of Botswana, Thusano Lefatsheng/Terra Aid Botswana, Environment Watch Botswana, Veld Products Research and Botswana Society.
10. In Kenya, government policies and activities related to the project are framed through the National Biodiversity Strategy and Action Plan, the National Environment Action Plan and the bill before parliament on Environment, Management and Coordination Policy. The Forestry Water Resources Master Plans also provide guidelines towards

relevant components. These national investment includes the seven year Integrated Project on Arid land (IPAL) in north east Kenya, the findings of which provide the basis of this project, representing GOK/GTZ investment of some US\$ 7m. Some of these findings have been implemented in the GTZ project in Marsabit and by NORAD in Turkana with investments of US\$3m in land degradation, forestry research and community training. The GOK has ongoing activities in the two region valued at US\$ 17,000 a year. Several NGOs in Kenya have field level activities that will be directly relevant to the project, including Pastoral Shelter, Farm Africa and Food for the Hungry International. Two national level NGOs can also provide support in terms of awareness raising and training, Natural Resources Management Forum and Pastoral Integrated Programme.

11. In Mali the Plan of Action to Combat Desertification and the National Action Plan for the Environment provide the environmental framework for land degradation in drylands. In addition, several sectoral policies provide frameworks that address ultimate causes such as the National Plan for Rural Development, Domestic Energy Strategy, National Programme for Agricultural Extension and the Structural Adjustment Programme. In Mali the World Bank/GOM project on natural resources protection represent a \$5m investment and the project "Mali Nord-Est de Development de l'Eleavage" is a multi-donor investment of \$14m. Several national and international NGOs are active in related issues such as pastoral livelihoods, and social services (e.g. IUCN, Care Mali and ACOR). The CNRST (National Centre for Scientific and Technical Research) is an umbrella organisation that groups all the research institutions in Mali.
12. From the foregoing analysis it is evident that the participating governments are committed to a number of baseline activities, such as policy reforms (e.g. decentralization process in Mali, the proposed Environmental Coordination and Management Bill in Kenya, and the Agricultural Development Policy and Tribal Grazing Lands Law in Botswana), rural development, research, etc. These baseline investments are deemed cost-effective in achieving domestic benefits, and provide the basis for the GEF incremental costs which provide the mechanisms for translating this investment into a mechanism which allows a cross-national approach to the problem of land degradation and loss of biodiversity in African arid and semi arid lands.
13. The GEF grant will provide incremental funding to complement the activities undertaken by the participating governments through the identification, synthesis and application of state-of-the-art knowledge in different approaches to demonstrate how globally significant biodiversity can be restored and protected through halting land degradation and the development of sustainable management systems, thus contributing to the achievement of additional global benefits.

The proposed alternative.

14. The alternative involves rehabilitation of the degraded lands, using indigenous species and knowledge in order to develop successful models for conserving the globally important biodiversity of the arid zone demonstration sites in a participatory, community based approach. Because of substantial and ongoing biodiversity and land resources loss in arid lands, the project will focus on halting and reversing the loss, rather than specifically focusing on enhancing additional gains from biodiversity conservation during its lifetime. The project endeavors to fill gaps in previous approaches so that biodiversity conservation is achieved through viable and sustainable policies and activities enacted by the local communities and their respective governments. The activities generate additional domestic benefits by boosting the livestock based economies of these regions and creating possibilities for alternative livelihoods as well. The outcomes and experiences of the project can be used as a model for rehabilitation of similar areas in the countries involved, as well as other arid zones of Africa.

Scope of analysis.

15. The scope of analysis covers and identifies the strength of local traditional local institutional, the weakness in coping with the threats to biodiversity and pressures that lead to land degradation. The different projects related to the project zones are identified, and the proportion that directly impact the project sites are costed. In-kind and cash government contributions are considered as part of the baseline, because they would still be disbursed by the governments even without the project. The policies of the different governments, ongoing research by national level organs and work by NGO's are also considered part of the baseline. Although the baseline is cost-effective in achieving domestic benefits under present policy and institutional conditions, there are, institutional factors (constraints at the national level), and inadequate levels of capitalization at the local level which can be considered as barriers to the development of sustainable management models. Incremental costs are sought for removing these barriers and strengthening the baseline. The majority of project activities are substitutional rather than complementary, however, there are no discernable domestic costs associated with the project. On the contrary, there will be additional domestic benefits to be gained.

Country situations

16. In all three participating countries, land degradation and the consequent loss of biodiversity has been going on for a long period of time. During the last three decades, the areas have experienced several prolonged drought periods, coinciding with rapid population growth, which increases food and fuel demands and hence contributes to range and woodland degradation. Traditional management systems have been disrupted, and in many cases this has led to accelerated land degradation and biodiversity loss.
17. In all three demonstration areas, increased sedentarization of the nomadic population has led to severe land degradation in the perimeters of the settlements. In Botswana, the livestock grazing areas have furthermore been significantly compressed by cordon fences, resulting in over-exploitation of the remaining accessible vegetation. The increased pressure on the vegetation also means that regeneration after recurrent droughts is hampered. Combined with uncontrolled bush fires, this results in an acceleration of the loss of globally significant biodiversity. The arid areas in the three countries are the habitats of dryland species and gene pools of great importance for the livelihood of the local populations, who are completely dependent on the indigenous vegetation for their livelihoods, as well as for the global community.
18. There is a general tendency to consider the degradation of arid lands as an inevitable process, and this project aims at demonstrating that an integration of modern science and traditional management systems can arrest the current degradation trends and facilitate rehabilitation of degraded rangelands and their biodiversity. The project will benefit from the current decentralization process in Mali, and the increased interest in all three countries in combating land degradation.

Table 1.1. Total budget by year and component (GEF Increment and other, Government Contribution – US\$ million)

Component	Total	Year 1	Year 2	Year 3	Year 4	Year 5
1. Establishment of appropriate Indigenous Management systems, and in-situ biodiversity conservation.	2.175	0.400	0.675	0.650	0.350	0.100
2. Establishment of Arid Zone Biodatabase and GIS	1.050	0.350	0.250	0.300	0.100	0.050
3. Rehabilitation of Indigenous Vegetation	2.725	0.550	0.800	0.700	0.400	0.275
4. Improvement of livestock production and marketing, and provision of alternative livelihoods.	1.590	0.250	0.300	0.500	0.400	0.140
5. Technology Transfer & Training.	2.450	0.365	0.535	0.600	0.550	0.400
6. Targeted Research	1.766	0.366	0.350	0.350	0.350	0.350
7. Monitoring & Evaluation	0.140	0.040	0.020	0.020	0.020	0.040
8. Administration	0.318	0.078	0.060	0.060	0.060	0.060
9. Appraisal	0.060	0.060				
TOTAL (US\$ millions)	12.274	2.459	2.990	3.180	2.230	1.415

Note: this table has been revised during the Appraisal stage to be consistent with the budgets in Annex 7 and 8. It does not include PDF B costs (\$330,000).

Table 1.2: Country budget by Component (GEF Increment and Other Contributions in US\$ millions)

Component	Botswana		Kenya		Mali		Total		
	Increment	Govt contrib.*	Increment	Govt contrib	Increment	Govt contrib	Increment	Govt contrib	Increment + Govt contrib
1. Establishment of appropriate indigenous management systems and in situ biodiversity conservation.	0.400	0.350	0.400	0.075	0.300	0.150	1.100	0.575	1.675
2. Establishment of arid zone biodatabase and GIS.	0.192	0.100	0.124	0.100	0.400	0.050	0.716	0.250	0.966
3. Rehabilitation of indigenous vegetation.	0.625	0.050	0.800	0.075	0.716	0.00	2.141	0.125	2.266
4. Improvement of livestock production and marketing, and provision of alternative livelihoods.	0.430	0.100	0.430	0.100	0.490	0.100	1.350	0.300	1.650
5. Technology Transfer & Training.	0.450	0.400	0.400	0.150	0.530	0.150	1.380	0.700	2.080
6. Targeted Research	0.100	0.100	0.100	0.050	0.100	0.050	0.300	0.200	0.500
7. Monitoring and Evaluation.	0.010		0.018		0.017		0.045		0.045
8. Administration.	0.080		0.080		0.080		0.240		0.240
TOTAL	2.287	1.100	2.352	0.550	2.633	0.500	7.272	2.150	9.422

*Does not include the Regional Component budget, nor the NORAD funding of \$1.15 million for the regional component. Nor the GTZ co-financing of \$250,000 for the Kenya component.

** includes government contribution to Regional Coordination Unit

Note: this table has been revised during the Appraisal stage. This table is only indicative, and should be read in conjunction with the input budgets in Annex 7.

Table 1.3. Baseline, Alternative and Incremental Cost (US\$ million) (GEF and Government contributions and co-financing)

Benefit	Baseline	Alternative	Increment
1. Establishment of appropriate indigenous management systems			
Global Environmental Benefits	<ul style="list-style-type: none"> Improved domestic management systems able to contribute to models replicable within each country. Indigenous knowledge of local biodiversity available. Preservation of indigenous vegetation and biodiversity of vital interest and benefit to local populations. 	<ul style="list-style-type: none"> Development of a replicable model, based on a regional comparative analysis of results, leading to more sustainable use and management of biodiversity and natural resources in arid zones of Africa. Increased knowledge of globally significant resources and ecosystem processes. Through replication, contribution to the in-situ conservation of globally significant biodiversity. 	
Domestic Benefits	<ul style="list-style-type: none"> Viable indigenous management systems constitute an important basis for integration with scientific methods to develop sustainable management systems. Success of baseline activities constrained by institutional barriers, such as inappropriate laws and policies. 	<ul style="list-style-type: none"> Additional benefits accrued from lessons learnt in developing sustainable management systems for biodiversity and natural resources in arid and semi-arid lands, from regional comparative analysis, including better models for replication and sustainable management systems. Contribution to the removal of upstream barriers to the development of models. 	
Costs	15.850	17.925	2.075
2. Establishment of Arid Zone Biodatabase and GIS.			
Global Environmental Benefits		<ul style="list-style-type: none"> Systematic collection, analysis and application of information on biodiversity, indigenous knowledge and sustainable management on a country- and regional basis leading to a globally significant database. 	
Domestic Benefits	<ul style="list-style-type: none"> Collection and storage of some data on biodiversity, indigenous knowledge and sustainable management within the countries. 	<ul style="list-style-type: none"> Participatory and strategic compilation and assessment of locally generated information in the region, applicable within the countries. 	
Costs	0.200	1.050	0.850

3. Rehabilitation of Indigenous Vegetation

Global Environmental Benefits	<ul style="list-style-type: none"> Some localised global biodiversity benefits from indigenous techniques for rehabilitation of indigenous vegetation. 	<ul style="list-style-type: none"> Improved and appropriate technologies for the rehabilitation of degraded vegetation and lands assessed and evaluated in different situations, leading to the development of widely replicable methods. 	
Domestic Benefits	<ul style="list-style-type: none"> Rehabilitated vegetation and lands for local populations. 	<ul style="list-style-type: none"> Rehabilitated vegetation and lands sustained in project sites and with demonstration value for neighbouring communities. 	
Costs	5.955	8.630	2.675

4. Improvement of Livestock Production and Marketing and Provision of Alternative Livelihoods

Global Environmental Benefits	<ul style="list-style-type: none"> Viable traditional methods of fodder production available. 	<ul style="list-style-type: none"> Fodder production techniques appropriate to drylands tested and synthesised into widely replicable methods. 	
Domestic Benefits	<ul style="list-style-type: none"> Marketing structures and policies available. Traditional levels of income generated through marketing of livestock and its products, and other range product based industries. Traditional socio-economic networks and savings available. 	<ul style="list-style-type: none"> Improved marketing policy reforms facilitated. Additional economic opportunities and income possibilities developed. Self-help and revolving funds assisted in capitalization and capacity building. 	
Costs	27.475	28.965	1.490

5. Technology Transfer and Training

Global Environmental Benefits		<ul style="list-style-type: none"> Transfer of technologies, information and models between the three countries, leading to a synthesis of appropriate models and technologies for wider application. 	
Domestic Benefits	<ul style="list-style-type: none"> Extension services geared towards technology transfer. 	<ul style="list-style-type: none"> Enhanced capacity of local community stakeholders and indigenous range managers in technical and institutional aspects for sustainable management of biodiversity and natural resources. 	
Costs	0.400	2.750	2.350

6. Targeted Research

Global Environmental Benefits		<ul style="list-style-type: none"> Systematic, scientifically documented and sustainable management tools applicable in other arid and semi-arid lands developed. 	
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Domestic Benefits	<ul style="list-style-type: none"> Institutions and human resources available for conducting applied research in sustainable management of biodiversity. 	<ul style="list-style-type: none"> Enhanced scientific knowledge base and increased capacity of national research institutions. 	
Costs	4.459	6.639	2.188

TOTAL	54.339	65.959	11.620
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Note: this table has NOT been revised during the Appraisal stage. It is only indicative, and should be read in light of Tables 1.1 and 1.2, and the input budgets in Annex 7 and 8.

Table 1.4. Detailed Budget by Activity

* Government contribution has been broken down by component, but not by activity.

** Does not include US \$ 0.5 million identified from "other" sources.

Components	Outputs	Activities	GEF Increment	Government* and other** contribution	Total	
Component 1. Establishment of appropriate indigenous management systems for sustainable use of biodiversity and natural resources.	1.1. Appropriate indigenous Management systems identified, developed, established and strengthened.	1.1.1. Establishment of effective community based management committees, based on indigenous institutions.	0.200		0.200	
		1.1.2. Preparation of management plans for the rehabilitation of rangelands and sustainable development in the project zones.	0.450		0.450	
		1.1.3. Development of partnership conventions between the communities, the project and the Governments.	0.100		0.100	
		1.1.4 Facilitation of land-use planning and of the resolution of Land-Tenure rights and conflicts.	0.300		0.300	
	1.2. Indigenous conservation methods strengthened.	1.2.1 Identification, documentation, systematisation and strengthening of indigenous conservation methods.	0.200		0.200	
		1.2.2 Development of community biodiversity registers.	0.050		0.050	
	1.3 Overexploitation of specific plant and animal species reduced.	1.3.1 Development of local incentives for biodiversity conservation.	0.200		0.200	
		-----			0.575	0.615
		Subtotal		1.500	0.575	2.075

Outcome 2. Establishment of arid/semi arid zone BioDatabase and GIS.	2.1 Historical and current knowledge of biodiversity and land degradation in the demonstration areas assessed in a participatory process.	2.1.1. Inventories of natural resources and interpretations of the situation over the past 40 years.	0.200		0.200
		2.1.2. Participatory socio-economic and needs assessment.	0.100		0.100
		2.1.3. Compilation of base data with the participation of local communities for monitoring and evaluation purposes.	0.050		0.050
	2.2 Regional perspective established, on biodiversity and land degradation issues.	2.2.1. Aerial photographic surveys, soil and vegetation cover mapping of all sites and regional analysis	0.100		0.100
		2.2.2. GIS equipment and support in Mali, linked to existing structures in Kenya and Botswana.	0.150		0.150
				0.250	0.250
	----- Subtotal	----- 0.600	----- 0.250	----- 0.850	

Outcome 3. Rehabilitation of indigenous vegetation.	3.1 Degraded rangelands/community territories in the project zones revegetated.	3.1.1. Community based management of spontaneous regeneration of plants, and tree planting, using indigenous species.	0.800		0.800
		3.1.2. Establishment of community and individual nurseries.	0.200		0.200
		3.1.3. Creation of enclosures in Mali and monitoring.	0.200		0.200
		3.1.4. Implementation of measures to control grazing including rotational grazing and using indigenous management techniques.	0.200		0.200
		3.1.5. Soil rehabilitation and reseeding with indigenous species.	0.300		0.300
	3.2 Fire management measures instituted.	3.2.1. Establishment of fire management measures, based on indigenous and modern techniques.	0.150		0.150
	3.3 Water management improved.	3.3.1. Improvements in water harvesting techniques, including water point improvement to assist grazing management and water spreading.	0.700		0.700
				0.125	0.125
		----- Sub-total	2.55	0.125	2.675

Outcome 4. Provision of alternative livelihoods and improvement of livestock marketing and fodder resources.	4.1 Improved market outlets for livestock, and income generation.	4.1.1 Development of economic opportunities in the marketing of livestock.	0.400		0.400	
		4.1.2 Facilitation of marketing policy reforms.	0.150		0.150	
	4.2 Fodder production improved.	4.2.1 Small-scale production of irrigated fodder for fodder banks and reserves.	0.300		0.300	
		4.3 Economic base of the communities diversified and substantially widened.				
	4.3.1 Establishment of marketing outlets for range product based industries (multiple-use plants, hides, honey etc).	0.040		0.040		
	4.3.2 Establishment of community revolving funds in the communities.	0.300		0.300		
				0.300	0.300	
		Subtotal	1.190	0.300	1.490	
Outcome 5. Technology transfer, training and regional comparative learning.	5.1 Appropriate technologies transferred between countries.	5.1.1 Documentation, workshops and seminars at the regional level.	0.450		0.450	
		5.2 Capacity of local communities enhanced in technical and institutional aspects.				
	5.2.1 Transfer of technologies for planting of individual and communal woodlots for fuelwood and construction timber, using indigenous species.	0.200		0.200		
	5.2.2 Transfer of energy saving mechanisms.	0.100		0.100		
	5.2.3 Introduction of technologies for general recycling of biomass.	0.100		0.100		
	5.2.4 Workshops and training seminars for community stakeholders.	0.350		0.350		
	5.3 Dissemination of results at local and national levels.	5.3.1 Environmental education through school programmes and competitions etc.	0.200		0.200	
		5.3.2 Mass-media campaigns.	0.250		0.250	
					0.700	0.700
			Subtotal	1.650	0.700	2.350

6. Targeted Research.	6.1 Development of rational, scientifically documented and sustainable tools applicable to these and other arid and semi-arid areas.	6.1.1 Research in indigenous management systems.	0.200		0.200
		6.1.2 Research in problems of range rehabilitation.	0.050		0.050
		6.1.3 Application of energy-saving devices to arid and semi-arid lands.			
		6.1.4 Feasibility studies of improving livestock marketing in the demonstration areas			
		6.1.5 Development of methods to communicate research findings to affected communities.	0.050		0.050
					0.200
		University of Oslo contribution		1.680	1.680
		----- Subtotal	0.300	1.880	2.180
7. Monitoring and Evaluation.			0.140		0.140
8. Administration.			0.734		0.734
9. Appraisal			0.060	0	0.060
GRAND TOTAL			8.724	3.830	12.554

Note: this table has NOT been revised during the Appraisal stage. It is only indicative, and should be read in light of Tables 1.1 and 1.2, and the input budgets in Annex 7 and 8.

ANNEX II. LOGICAL FRAMEWORK MATRIX.

	Summary	Objectively verifiable indicators	Means of verification	Critical assumptions and risks
Objectives	To develop models for the conservation of biodiversity and rehabilitation of degraded rangelands, and to develop sustainable management systems using indigenous knowledge.	Substantive recovery of indigenous vegetation in project sites. Functional local natural resource management systems in place.	Surveys and reports at the commencement and after finalisation of the pilot project. Local community perceptions and feedback.	No major negative changes in drought patterns. No major political perturbations in the participating countries.
Outcomes (project impacts)	<p>1. Establishment of appropriate indigenous management systems.</p> <p>2. Regional and national data availability on indigenous production and management systems significantly enhanced.</p> <p>3. Indigenous vegetation in degraded rangelands rehabilitated, through reducing pressure on the vegetation resources.</p> <p>4. Provision of alternative livelihoods, and improved livestock markets and feed resources in other arid areas.</p> <p>5. Transfer of technology and information.</p>	<p>Local satisfaction demonstrated. Participatory process assured. Management plans meaningful and developed through consensus. Policy recommendations developed.</p> <p>Availability, quality and accessibility of databases. Data collection and storage capacity enhanced.</p> <p>Number of hectares rehabilitated. Bio-mass production per hectare. Qualitative improvement in vegetation and soils.</p> <p>Number and weight of animals sold per year. Availability of honey etc. on the market at reasonable prices. Policy recommendations developed. Increased income per household. Hectares of fodder production.</p> <p>Number of workshops and training seminars conducted at local level. Activities of community institutions and individuals showing follow-up. Amount and quality of information transferred between countries.</p>	<p>Project progress reports. Local community feedback.</p> <p>Databases.</p> <p>Project progress reports.</p> <p>Project progress reports. Government statistics.</p> <p>Project progress reports.</p>	<p>Continued incentive for the participation of the communities. Communal respect of management plans by local community and neighbors. Successful methods for integration of indigenous management with modern systems available.</p> <p>Data made available from various agencies and communities</p> <p>Communities provided incentives for participating in land rehabilitation.</p> <p>Governments co-operative in revising marketing policies. Alternative livelihoods acceptable to communities. Continued community willingness to participate. Co-operation from Governments.</p>

	6. Targeted research in the project areas used for developing methods for replicating the project findings in other arid areas.	Technical and scientific reports on sustainable management methods available. Number of trained researchers.	Reports, scientific journals.	Project findings replicable in other areas
Results (project outputs)	<p>1.1 Management systems controlled by the communities.</p> <p>1.2 Indigenous conservation methods strengthened.</p> <p>1.3 Over-exploitation of specific plant and animal species reduced.</p> <p>2.1 Assessment of indigenous knowledge of degradation in the pilot areas.</p> <p>2.2 Regional perspective established on biodiversity and land degradation issues.</p> <p>3.1 Degraded rangelands/community territories in the project pilot zones revegetated.</p> <p>3.2 Appropriate fire management measures established.</p> <p>3.3 Water management improved.</p> <p>4.1 Improved market outlets for livestock and income generation.</p>	<p>Committees and management structures established. Management guidelines implemented.</p> <p>Biodiversity registers and herbaria. Documented indigenous methods. Education of youth and community at large.</p> <p>Incentives developed for local communities to manage their resources on a sustainable basis.</p> <p>Database created and made accessible to all stakeholders. Successful participatory assessments integrated in master plans.</p> <p>Aerial photo and remote sensing analyses completed. GIS systems established and linked between countries.</p> <p>Number of ha revegetated in the pilot zones. Bio-mass production increased by number of kg/ha. Soil erosion reduced. Dunes stabilised.</p> <p>Number and extent of wildfires significantly under control and management.</p> <p>Number of water structures created and functioning.</p> <p>Sales and turnover figures increased.</p>	<p>Project progress reports, local perceptions.</p> <p>Progress reports and local perceptions. Assessments.</p> <p>Project progress reports. District surveys.</p> <p>Project progress reports. Special reports on historical knowledge.</p> <p>Project reports and analytical documents.</p> <p>Project progress reports. Monitoring surveys.</p> <p>Project progress reports. District surveys.</p> <p>Project progress reports and local evaluation.</p> <p>Project progress reports. District surveys. Government statistics.</p>	<p>No major political changes during the pilot project implementation. Co-operation from governments and other authority.</p> <p>Indigenous conservation methods still viable.</p> <p>No negative interference from external agents, and undue market influences. Availability of data.</p> <p>Government willingness to co-operate on international sharing of info.</p> <p>No negative changes in drought patterns.</p> <p>Government investment on fire fighting and control measures</p> <p>No negative changes in drought patterns.</p> <p>Co-operation from Governments and other authorities on marketing policies.</p>

	<p>4.2 Fodder production improved.</p> <p>4.3 Substantial widening and diversification of the economic base of the communities.</p> <p>5.1 Appropriate technologies transferred between countries.</p> <p>5.2 Capacity of local communities enhanced.</p> <p>6.1 Development of rational, scientifically documented and sustainable management tools applicable in other arid zones.</p>	<p>Labour allocation patterns. Amount of fodder produced. Number of hectares under production.</p> <p>Diversity of income possibilities in the communities.</p> <p>Successful meetings and documentation.</p> <p>Practical application of knowledge.</p> <p>Scientific documentation available.</p>	<p>Project progress reports.</p> <p>Project progress reports. District surveys. Government statistics.</p> <p>Project progress reports. District surveys.</p> <p>Project progress reports. District surveys.</p> <p>Project progress reports. Scientific reports.</p>	<p>No breakdown of boreholes in Mali. No negative changes in drought patterns.</p> <p>Alternative livelihoods acceptable by communities. No negative environmental impacts attending the operations of range product industries.</p> <p>No alternative opportunity costs to local population.</p>
Components/activities	Component 1: Establishment of appropriate indigenous management systems.			
	<p>1.1.1 Establishing of effective community based management committees.</p> <p>1.1.2 Preparation of master plans for the rehabilitation of rangelands and sustainable development in the project pilot zones.</p> <p>1.1.3 Development of partnership conventions between the communities, the project and the Governments.</p> <p>1.1.4 Facilitate land use planning and resolving of land tenure rights and conflicts.</p> <p>1.2.1 Identify, document, systematize and strengthen indigenous conservation methods.</p>	<p>Committees operational and active.</p> <p>Master plans created and available.</p> <p>Conventions approved and operationalised.</p> <p>Land tenure conflicts less constraining for the communities. Land use plans available.</p> <p>Information catalogued and made usable by the new and old generation.</p>	<p>Project progress reports. Community consultations. District surveys.</p> <p>Project progress reports. District and Government reports.</p> <p>Project progress reports. District surveys. Government reports.</p> <p>Project progress reports. Community surveys.</p> <p>Project progress reports. District archives. Local perceptions.</p>	<p>Co-operation from local authorities.</p> <p>Community consensus obtainable.</p> <p>Co-operation from all partners.</p> <p>No major conflicts. Consensus reached among stakeholders.</p> <p>Strong local interest.</p>

	1.2.2 Developing community biodiversity registers.	Biodiversity registers available and in use.	Progress reports.	Strong local interest and local archives.
	Component 2: Establishment of arid zones Database and GIS.			
	2.1.1 Inventories and interpretations of the situation over the past 40 years.	Inventories prepared and accessible.	Project progress reports. District archives.	Data available and accessible.
	2.1.2 Participatory socio-economic and needs assessments.	Self-discovered and real assessments.	Local perceptions reports.	All stakeholders are able to participate.
	2.1.3 Compilation of baseline data with the participation of local communities.	Baseline data compiled in accessible reports.	Project progress reports. District archives.	All stakeholders are able to participate.
	2.2.1 Aerial photographic surveys, soil and vegetation cover mapping.	Soil and vegetation cover maps available and generated.	Reports and analyses. District and Government archives.	Surveys used for production of community management systems.
	2.2.2 Establish GIS equipment and support in Mali.	Established unit Inter-country linkages functional.	Progress reports.	No major constraints to inter-country communication.
	Component 3: Rehabilitation of indigenous vegetation.			
	3.1.1 Assisting spontaneous regeneration and tree planting using indigenous species on a community basis.	Number of trees planted, and survival rates.	Project progress reports. District surveys. Government statistics.	No negative change in drought patterns.
	3.1.2 Establishing nurseries.	Number of nurseries established and operational.	Project progress reports.	No negative change in drought patterns.
	3.1.3 Creation of enclosures for experimental management in Mali.	Number and area of enclosures established. Land degradation reduced and biodiversity conservation increased in enclosures.	Project progress reports.	No negative change in drought patterns.
	3.1.4 Implementing measures to control grazing.	Significant improvement in land and vegetation stability.	Project progress reports. District surveys. Government statistics.	No negative change in drought patterns.
	3.1.5 Rehabilitate soil and vegetation reseeded.	Ha rehabilitated. Survival rates.	Project progress reports.	No negative change in drought patterns.

	3.2.1 Establish fire management measures.	Indigenous methods identified and catalogued. Institutions (structures and regulations) for fire management. Infrastructure for fire management.	Progress reports and local perceptions.	
	3.3.1 Improving water harvesting techniques.	Availability of water for irrigation, watering and household purposes. Ground water surveys.	Project progress reports. Community consultations. District surveys.	No negative change in drought patterns.
	Component 4: Improvement of livestock production and marketing, and provision of alternative livelihoods.			
	4.1.1 Developing economic opportunities in marketing livestock.	Access to marketing information. Infrastructure established and functioning.	Progress report. Local perceptions.	
	4.1.2 Facilitate marketing policy reforms.	Marketing policy impacts evaluated.	Project progress reports. Government archives.	
	4.2.1 Developing small-scale irrigated fodder from indigenous plants, fodder banks and fodder reserves.	Fodder production increased. Number of ha. fodder reserves.	Project progress reports. District surveys and statistics.	
	4.3.1 Establishment of marketing outlets for range product based industries (plants, hides, honey etc).	Increased availability of range products on the market. Increased income per household.	Project progress reports. District and Government statistics.	
	4.3.2 Establish self-help revolving funds in the communities.	Self-help revolving funds established and capitalized. Number of new businesses established.	Project progress reports. District and Government statistics.	
	4.4.1 Testing of appropriate biomass recycling techniques.	Increase in soil organic matter content.	Progress report. Local perceptions.	
	Component 5: Technology Transfer, Training and Regional Comparative Learning			
	5.1.1 Documentation workshops and seminars at the regional level.	Success of knowledge transfers. Number of meetings and visits.	Project progress reports.	
	5.2.1 Planting of woodlots for fuel-wood and construction timber.	Number of ha planted. Production figures.	Project progress reports.	

	<p>5.2.2 Transferring energy saving devices and technologies.</p> <p>5.2.3 Introducing technologies for general recycling of bio-mass.</p> <p>5.2.4 Workshops and training seminars for community stakeholders.</p> <p>5.3.1 Environmental education through school programs and competition</p> <p>5.3.2 Mass-media campaign</p>	<p>Number of energy saving devices in use. Firewood requirements per household decreased.</p> <p>Tons of dung used as fertiliser Tons of bio-mass recycled. Pressure on range resources reduced.</p> <p>Number of training seminars and workshops held. Quality of training.</p> <p>Quality of training.</p> <p>Production of programs.</p>	<p>Project progress reports. District and Government statistics.</p> <p>Project progress reports. District surveys.</p> <p>Project progress reports. District statistics. Local perceptions.</p> <p>Local perceptions.</p> <p>Local perceptions.</p>	
	<p>Component 6: Targeted Research and Regional Training</p>			
	<p>6.1.1 Research in indigenous management systems.</p> <p>6.1.2 Research in problems of range rehabilitation.</p> <p>6.1.3 Application of energy-saving devices to arid and semi-arid lands</p> <p>6.1.4 Feasibility studies of improving livestock marketing in the pilot areas.</p> <p>6.1.5 Development of methods to communicate research findings to affected communities.</p>	<p>Number of trained candidates and reportable research results.</p> <p>Number of trained candidates and reportable research results.</p> <p>Number of trained candidates and reportable research results.</p> <p>Number of trained candidates and reportable research results.</p> <p>Number of trained candidates and reportable research results.</p>	<p>Project progress reports.</p> <p>Project progress reports.</p> <p>Project progress reports.</p> <p>Project progress reports.</p> <p>Project progress reports.</p>	

ANNEX III. STAP ROSTER TECHNICAL REVIEW

By: Dr. Assefa Mebrate, Assistant Professor of Systematics and Ecology, Addis Ababa University, Ethiopia.

After a careful review of the proposal and other related materials provided by UNEP, I am convinced that, if successfully implemented, the project is appropriate, scientifically and technically sound, sustainable, and replicable with valuable global environmental benefits. The fact that it is a regional project also provides the opportunity for joint and concerted effort to address a regional problem and exchange experiences. However, the benefits to be drawn from the joint effort have not come out clearly. The regional execution and implementation arrangements also need more clarification. The following is a summary of my opinion on each of the criteria I used in my evaluation of the project.

I. The project in view of the goals, operational strategies and program priorities of GEF and council guidance and the provisions of the relevant conventions.

The proposed project

1. addresses issues of land degradation that are related to biodiversity, climate change and international waters, which are GEF's focal areas of concern. It sets out to establish or strengthen systems of sustainable use of the flora and fauna of the project areas while conserving biodiversity. As a result, the implementation of the project helps achieve global environmental objectives in more than one area.
2. is in agreement with the follow-up actions and recommendations to the STAP workshop on land degradation in that:
 - a) it addresses problems in selected warm arid zones of Africa, with one of the five main biomes covered by Operational Program 1 of GEF;
 - b) it includes the following three activities all of which are called for by the Operational Program 1:
 - soil conservation and restoration of degraded arid areas to conserve biodiversity and a few important endemic plant species;
 - natural resource management emphasising integrated resource use with conservation and development; and
 - energy conservation emphasising conservation of trees and alternative energy sources to conserve the natural vegetation.
3. falls within operational Program 9 since it also addresses the problem of rehabilitation of damaged catchments, adoption of sustainable management practices both of which are priorities of transboundary and ecologically important multiple country dry land, sustainable land-use and conservation systems.
4. falls within GEF's priority area of Operational Program 1 since:
 - It is a pilot project that will demonstrate the conservation and sustainable utilization of the biodiversity of seven sites, in three arid zones of Africa;
 - It addresses the problem of biodiversity loss in the context of pastoralist patterns of land use and conservation related to arid and semi-arid ecosystems management, integrated resource management approach to the preservation and enhancement of biodiversity and management of carbon sequestration and water resources in these arid pastoral lands of Africa;
 - Its activities include development and application of basic computerized data processing and management decision support system, GIS, in relation to integrated land, water and biodiversity use in arid areas that are affected by land degradation;
 - It also includes activities which addresses technologies which can assist people in developing sustainable use of dry land through fuel wood use efficiency and fuel substitution.

II. Regional context

The project is a regional project involving three African countries (Mali, Botswana and Kenya). The project areas include three important arid zones: the Sudano-Sahel, the Somali-Chalbi, and the Kalahari-Namib. It involves several tribal groups of three African countries that have varied indigenous knowledge on the conservation and wise utilization of biodiversity.

Research and academic institutions of a few African and European countries also collaborate and play an active role in the activities of the project.

III. Global environmental benefits

This pilot project has global environmental benefits in that the;

1. successful outcomes and the experiences and learning gained through the implementation of the pilot project in three African countries and three different arid zones can serve as a model to be adapted and replicated elsewhere in other arid areas of Africa and the rest of the world;
2. successful implementation of the project results in conserving and rehabilitating biodiversity that has global significance;
3. successful implementation of the project, through the resulting increased vegetation cover and reduction of soil erosion contributes positively to international bodies of water such as the Niger River and Lake Turkana, as well as carbon dioxide sequestration;
4. the experience and learning's gained from the several tribes of the project area that have varied indigenous knowledge of biodiversity conservation, could be of great global importance in addressing biodiversity conservation issues in other similar arid areas of Africa and the rest of the world.

IV. Scientific and technical soundness

The following are indications of the scientific and technical soundness of the project.

- The project is proposed based on sound consideration of existing scientific information and data on biological and other resources of the project areas;
- It integrates applied land degradation research components aimed at solving major problems in arid lands;
- The testing of natural resource management systems in a number of pilot areas is also an important part of the project;
- As it is presented in the logical framework matrix, the objectives, variable indicators and the means of verification and the critical assumptions and risks make it possible to monitor project activities and evaluate the results.
- The project will be provided with the necessary advice on pertinent technical issues from the Project Advisory Committee which shall be composed of selected experts from the scientific, research and training community under the chairmanship of a prominent university.

V. Replicability

The successful implementation of the project in areas representing three different arid zones of Africa, with several tribal groups that have varied experience and knowledge in biodiversity conservation, will produce outputs that can be adopted and replicated in other areas of Africa and the rest of the world.

VI. Sustainability

There are three major factors that suggest the sustainability of the project;

1. The stakeholder participation in general and the participatory approach of the project that involves local communities in every activity of the project in particular.
2. The origin to the solution of the problem is indigenous knowledge of the communities and as a result its implementation will not encounter resistance and the project will be sustainable.
3. The firm commitment of the governments involved in the project to address problems of arid and semi-arid zones is a major contributing factor for sustainability. This is demonstrated by the initiatives they have taken so far to address the issues of land degradation and loss of indigenous vegetation and their present commitment and willingness to involve themselves in the project.

VII. Strength

The following are the major strengths of the project:

1. It involves seven sites from three different arid zones of Africa with several tribal groups that have varied indigenous knowledge in the conservation of biodiversity.

2. It involves the concerted effort of three African countries that not only see arid and semi-arid zones as important priority areas of development but have also undertaken initiatives to address the issues of land degradation and loss of indigenous vegetation in these areas.
3. The project makes use of biophysical and socio-economic data on land use that have been made available as a result of research and experimental management from the three arid/semi-arid zones as well as information on indigenous vegetation that is made available as a result of the Integrated Project in Arid Lands (IPAL) in northern Kenya.
4. The project involves stakeholder participation in all activities of the project in general and community participatory approach utilizing indigenous knowledge to ward natural resource management in particular.

VIII. Weaknesses

In my opinion, the major weakness of the project document is the fact that it does not clearly state the benefits to be drawn from the regional effort (which is one of the strong points of the project) by each of the participating countries. The implementation and execution management arrangement at the regional level does not also clearly state the role of the Regional Coordination Unit or Office. The following are the major points that need to be reexamined.

1. Links between the project activities in the three countries involved and the RCU.
2. The nature of collaboration between UNOPS and the concerned local ministries in project execution. The role of the various ministries and the UNOPS are not clearly stated.
3. Duties and responsibilities the national steering committee (even though the members are not listed) are not clear. In addition to the NSC, there is also the Regional Steering Committee. It is not clear as to how policy guidelines and supervision of national projects can be performed by a regional body. Is this an agreement ministers can make?
4. At the community level, there are project staff, community based organizations, extension staff, project manager etc; the roles of each and their links are not also clear.

May 8, 1998

IA response:

The concerns expressed by the STAP roster reviewer have been addressed in the revision of the document in the following way:

1. The framework for the links between the project activities and the RCU has been specified in the Implementation Arrangements section. The details will be addressed and worked out during the appraisal phase.
2. UNOPS is not the executing agency. An agreement between UNEP and UNDP on the modalities for joint implementation of projects in Land Degradation is on the way, and the detailed implementation/execution arrangements will be finalised during the appraisal phase.
3. The regional bodies (Regional Coordination Unit and Regional Policy Steering Committee) will be responsible for the day-to-day management of the regional activities and provide the national project units with advice and overall guidance. The inclusion of Ministers in the regional bodies will ensure the maximum coherence between national and regional activities.
4. The project staff at community level will execute the physical components of the project (e.g. construction works, nurseries, crust breaking etc) and the training, supported by the community organisations and extension staff. The detailed arrangements will be worked out in the appraisal phase.
5. In general, the benefits to be drawn from the regional efforts have been more clearly spelled out, emphasising the regional learning aspects and particularly drawing attention to the fact that the root causes of land degradation in arid zones are very similar in the three countries, which offers a unique opportunity to develop widely replicable models for rehabilitating degraded rangelands.

(Second review after revision of document):

Thank you for sending me the revised version of the project document on "Management of Indigenous Vegetation for Rehabilitation of Degraded land in the Arid Zone of Africa", project number GF/1300-97-04.

Please be informed that I am satisfied with the changes made and as I have stated in my technical review, the project is technically sound, sustainable and replicable with valuable global environmental benefits.

August 16, 1998.



ANNEX IV. ROOT CAUSES

Table 2.1. Intermediate, proximate and ultimate causes of biodiversity loss and land degradation.

	Botswana	Kenya	Mali
Intermediate	<ul style="list-style-type: none"> • overgrazing • wildlife poaching • drying up of Okavango delta • wildfires • deforestation • soil and vegetation degradation • overharvesting of medicinal plants and natural products • reduction of underground aquifers 	<ul style="list-style-type: none"> • overgrazing • soil degradation • deforestation for charcoal and fuelwood 	<ul style="list-style-type: none"> • changing forms of shifting agriculture • reduction of fallow periods • overgrazing • late wildfires • deforestation • transhumance patterns shifting southwards leading to conflicts
Proximate	<ul style="list-style-type: none"> • range compression • land tenure conflicts • high fuelwood demand • water development • livestock production policies 	<ul style="list-style-type: none"> • sedentarisation • high fuelwood demand • land tenure conflicts • marketing policies • inadequate dryland policies 	<ul style="list-style-type: none"> • high fuelwood demand • land tenure insecurity • unbalanced policies • inadequate human and financial resources
Ultimate	<ul style="list-style-type: none"> • poverty • drought • population growth 	<ul style="list-style-type: none"> • poverty • droughts • population growth 	<ul style="list-style-type: none"> • poverty • drought • population growth

Table 2.2: Threats and root causes.

Threats	Root causes	Specific components and outputs
High grazing pressure around settlements	Range compression and loss of dry season pastures	Component 1 (Outputs 1.1, 1.2 and 1.3) Component 4 (Output 4.2) Component 5 Component 6
Uncontrolled over-exploitation of natural resources	Breakdown/loss of traditional management systems and inadequate land tenure policies	Component 1 (Outputs 1.1, 1.2 and 1.3) Component 5 Component 6
High grazing pressure around settlements	Reduced mobility of pastoralists and lack of adequate water points	Component 1 (Output 1.1) Component 3 (Output 3.3) Component 5 Component 6
Deforestation for fuel wood	Shortage of energy supplies, and wood for construction	Component 3 (Output 3.1) Component 5 (Output 5.1) Component 6
Uncontrolled wildfires	Lack of effective management controls at local level	Component 3 (Output 3.2) Component 6
Continuing degradation of vegetation and soils	Lack of appropriate vegetation and soil rehabilitation technologies for large scale rehabilitation	Component 3 (Output 3.1) Component 1 (Output 1.1) Component 5 (Outputs 5.1 and 5.2) Component 6 (Output 6.1)
Over-exploitation of natural resources	Lack of economic incentives for conservation and inadequate marketing policies	Component 4 (Outputs 4.1, 4.2 and 4.3) Component 5 Component 6
Inappropriate and destructive sustainable use models	Lack of integration of scientific and indigenous knowledge and unavailability of and lack of access to relevant data	Component 2 (Outputs 2.1, 2.2) Component 5 (Outputs 5.1, 5.2) Component 6 (Output 6.1)

ANNEX V: PUBLIC INVOLVEMENT PLAN SUMMARY

Stakeholder Participation (Matrix and Analysis)

1. In the participating countries, a wide variety of stakeholders have an interest in natural resources use including the sustainable utilization of indigenous vegetation, biological resources, water resources, and the global environmental impacts of rangeland use, including climate impacts. These stakeholders include farmers, made up of pastoralists and agrosilvo-pastoralists who practice subsistence agriculture; sedentary livestock owners and transhumance pastoralists; community-based organisations and non-governmental organisations (NGOs), and government technical administration at both the central, district and community level. Global interests in biological diversity and climate change are held by international organisations, including the United Nations.
2. The project is based upon a participatory approach to improve indigenous vegetation management, involving the active participation of different stakeholders in all aspects of project design implementation, monitoring and evaluation. A matrix summarising the degree of interest and potential involvement of different stakeholder groups are show in Table 3.1.
3. Various stakeholders will be involved in the project implementation activities as presented in the main project document and the logical framework. Essentially project implementation will be carried out by local communities, their organisations and NGOs, with the support of government technicians and research and training institutions. A participatory monitoring and evaluation system will be put in place, to ensure that the local communities and NGOs are involved in self-monitoring and evaluation.

Project Preparation

4. Consultations were held with the three participating governments and GEF-OFPs to determine the broad scope of the project and modalities for co-operation between the three countries. To support this process, co-ordination meetings among various stakeholder groups were held at the regional level between the three participating countries and the University of Oslo; at the national level and at the regional and project site level. National and international consultants as well as a team from the University of Oslo assisted with the project preparation. The project preparation process included:
 - Four Technical Co-ordination meetings between the participating countries and the University of Oslo, including site visits;
 - Community consultations and site visits;
 - Stakeholder workshops;
 - Preparation of a draft project document, based on inputs from the national reports;
 - Review of the draft project document by stakeholder in the project sites and incorporation of their views and comments;
 - Review of the project document by an independent team of international consultants;
 - Joint UNEP/UNDP review and finalization of the project documents.
5. An integral part of the project preparation was the convening of a number of Technical Co-ordination Meetings. A meeting was convened in each of the participating countries and involved visits to the project sites as well as consultations with a wide cross section of stakeholders, including local community leaders, government officials, NGOs and regional and international organisations. One of the technical meetings was convened by the University of Oslo to facilitate the preparation of the draft project document based upon national inputs. The OFPs of the participating countries as well as their national consultants participated in all the Technical Co-ordination Meetings.
6. In Botswana, the project was prepared under the auspices of the Range Ecology Unit of the Ministry of Agriculture, with the support from the GEF/OFP. Steps in the process, which commenced in September 1997, included (1) selection of potential sites the basis of PRA results analysis and discussions held with technical services; (2) co-ordination of a Technical Co-ordination Meeting which included site visits and consultations; (3) site visits, information and awareness-raising meetings conducted with stakeholders to get their ideas, priorities, and constraints for project formulation and implementation; (4) preparation of a draft country proposal; (5) convening of stakeholder workshops, with representatives of the local communities, decision makers and technicians to validate the project document; and (6) participation in the Review Meeting and finalisation of the project document.
7. In Kenya, the process began with joint site visits by the national consultant and the National Environment Secretariat

(NES) of the Ministry of Environmental Conservation technical staff. Consultations were held with a wide cross-section of stakeholders including government stakeholder Ministries and departments and local NGOs. Consultations took place at the site level and involved village elders/leaders, representatives of village committees and villages, including women and youth. They provided detailed information on land degradation and its impact on their livelihoods, as well as specific information on physical factors (water, rainfall, soils) biological factors (plants, animal destocking etc.) and socio-economic factors (infrastructure, marketing, transport security) impacting upon their ability to manage the range and in particular indigenous vegetation. In Marsabit the community consultations were carried out in collaboration with GTZ/Marsabit Development Programme and utilize the existing extensive community structure of environmental committees.

8. The Kenya project document was prepared under the supervision of the GEF focal point and consolidated with inputs from government and NGO technicians. It was also reviewed by the Government of Kenyas Biodiversity and Desertification Committees. Like in Botswana and Mali, a Technical Co-ordination Meeting was convened in Kenya, as well as site-visits, information and awareness meeting and stakeholder workshops in order to validate the project document. A country document was prepared.
9. In Mali, the project was prepared under the guidance of the Ministry of Environment with support from the GEF/OFP and a wide-cross section of community based organisations undertaking activities in the demonstration sites. The steps in the process were similar to those undertaken in Botswana and included: (1) selection of the potential sites on the basis of PRA results analysis and discussion with local NGOs and technical services; (2) co-ordination of a Technical Co-ordination Meeting including site visits and consultations; (3) site visits, information and awareness-raising meetings; (4) preparation of a draft country project proposal; (5) convening of stakeholder workshops; and (6) participation in the project review process.
10. Initial consultations were also held with research institutions and universities in the participating countries with respect to their participation in the project, particularly with respect to component 6. The University of Oslo in collaboration with the OFPs of the participating countries will build upon these consultations by establishing formal links with these institutions as part of project implementation.
11. To elaborate elements of the project and to review it for its scientific and technical soundness as well as cost effectiveness, a review meeting was convened by the University of Oslo in collaboration with the OFPs of the participating countries. The review meeting was attended by a small team of international experts, as well as the OFPs of the participating countries. In addition, a joint UNEP/UNDP review of the project was undertaken in August 1998 to facilitate the joint implementation of the project. In addition to UNEP and UNDP, the OFP from the participating countries and the University of Oslo participated in the review session.

Stakeholder profile

12. Diverse stakeholders have been identified in the project demonstration sites. Their differing roles and use of natural resources have a variety of impacts on natural resource management, loss of biological diversity including indigenous vegetation, land degradation and possibilities for land rehabilitation and biodiversity conservation.
13. Among the rural populations in the participating countries, two important resource groups can be distinguished – pastoralists and agro-pastoralists (farmers). These people were originally nomads (transhumants), but in recent years many have become sedentarized. They practice subsistence agriculture on small scale. In all of the participating countries the men's livestock consists of cattle but include sheep and goats, which are often the responsibility of women. The pastoralists face the following major constraints: pasture resource depletion, due to overgrazing, loss of indigenous vegetation and decreasing access to watering points, as ponds have dried up due to the drought and the existing boreholes are inadequate, with frequent maintenance problems. Where such boreholes do exist, animal and human populations tend to be concentrated, resulting in severe loss of biological diversity including indigenous vegetation and land and resource degradation. In many areas, wildlife populations have declined. Where natural ponds are used, the water quality is deteriorated due to animal use, resulting in poor quality of water for human consumption. The pastoralists also experience degradation of rangeland due to decreased mobility of livestock, the lack of adequate marketing opportunities for stock off-take; and the breakdown/loss of traditional management systems and issues relating to land tenure.
14. In contrast to the pastoralists, the farmers combine crop production with livestock husbandry. Their land use is localised and resource use is intense around the farms. They use crop residues as livestock feed and benefit from fertilising the farms by livestock manure. The restricted mobility and high human density has forced the farmers to practise intensive land use strategies, as opposed to pastoralists. Given that the resources and the land used by the

farmers were formerly part of the grazing resources by the long distance transhumant pastoralists, conflicts over resource access are currently on the increase. Loss of the key grazing resources to the farmers is sparking off confrontation between the two production systems. Furthermore, the traditional regulative processes of utilizing crop residues by the livestock of the pastoralists and the mutual use of the resource have broken down. This has accelerated land degradation and loss of biodiversity. Reversing land degradation and conserving biodiversity requires reduced land use conflicts. The different categories of stakeholders will participate in establishing amicable mechanisms of resource use and promoting conservation of biodiversity. The communities are interested in rational use of the land for grazing and farming.

15. From an institutional and organisational point of view, diverse community-based groups and associations, such as co-operatives, women's groups, youth groups, and herders' associations, have interests in ensuring more sustainable use and management of natural resources. Many NGOs work closely with these community-based organisations (CBOs). The NGOs have considerable experience in various domains related to natural resource management, awareness-raising and extension, training, participatory rural appraisal and planning, and monitoring and evaluation, which will be very useful for the project.

Stakeholders and the Decision-Making Process

16. The local communities and the NGOs will be involved in the decision-making processes of the project at various levels. The project will have representatives of these stakeholders on the Regional Project Steering Committee (RPSC) (one community representative from each of the participating countries). The RPSC will be responsible for providing overall policy guidance for the implementation of project activities in all the project sites. Community representatives and NGOs will also play important roles in the National Advisory Group, which will be established in each of the participating countries. This mechanism will review and advice on implementation procedures and strategies and project progress.
17. Project implementation on the ground will be the mandate of the project staff, the rural population and NGOs with support from government officials. The rural communities and NGOs will be further involved in a self-monitoring and evaluation exercise in order to contribute to overall project decision making. Guidelines will be drawn for contracting NGOs, and local Research and Training Institutions in order to provide support to rural Communities. Local interests will be further reinforced by the participation of elected members of National Assemblies and elected local leaders.
18. At the community level stakeholder participation and the decision-making process will build on existing indigenous structures. This will necessitate the strengthening of community based representative committees and Community Environment Management Committees where they exist. These mechanisms will take full responsibility for managing the implementation of specific elements of the project (i.e rehabilitating degraded areas of indigenous vegetation). A participatory approach, utilizing indigenous knowledge and geared towards improved natural resource management will be the main means for achieving biodiversity conservation and halting land degradation. There will be active participation of different stakeholders in all aspects of the project appraisal, implementation, monitoring and evaluation

Social Issues and Impact on Beneficiaries

19. The project will have a positive impact on different categories of beneficiaries, such as through the strengthening of indigenous management systems and structures, upgrading of their technical and management capacities, improvement of the natural resource management systems, generation of alternative livelihood options, and improvement of livestock production and marketing. The project will also facilitate the exchange and assimilation of resource management techniques between different regions of Africa.
20. Project implementation will, however, need to be cognate of potential conflicts between different resource users, such as sedentary farmers vs. transhumant herders, or the displacement of resource users through agreements to protect certain sites through an exclusion of use. The project is designed in such a way to overcome such potential conflict through negotiation mechanisms and the development of partnership conventions between the communities, user groups and/or governments.
21. Direct beneficiaries of the project will include the rural population – women, men and youth living in the project areas. Particular emphasis will be placed on the role of women as “agricultural keepers” -- maintaining subsistence and/or commercial fields. More specifically, it is estimated that the project will directly impact on over 180 000 persons in the project demonstration sites. In Mali, the total population affected directly is 100,000 people, 50% of which are transhumants. In Kenya, a total of 60,000 people, of which 50% are transhumants, are affected, and in Botswana the total population directly targeted is 20,000, none of which are transhumants. The project will work with these

communities with the view of strengthening indigenous management systems, and developing land use/resource-management activities. The local stakeholders living in these communities will benefit from increased control over their natural resources as well as training, technology transfer, and development of skills. Opportunities will also be provided for the local stakeholders to benefit from techniques and methodologies being employed in various other parts of Africa, which can be applied in their own local situations. These activities will lead to improved rangeland and indigenous vegetation management, building of local organisational capacities and biodiversity conservation. In addition, long-term benefits will accrue to stakeholders in other parts of the arid/semi-arid zones of Africa once the project results are replicated.

22. Secondary groups of beneficiaries can be identified beyond the target communities. Other rural communities in the adjacent areas will also benefit, as the project plans to diffuse information and lessons learnt on a broader scale, through the mass media involving the use of photography, newsletters, videos, television, radio and the use of demonstration sites and various types of competitions. The technical staff of relevant government agencies, NGOs, and other development partners in the project areas, will benefit from training, equipment and logistical support, so that they can better assist the populations and facilitate natural resource management efforts. The three governments will benefit from increased collaboration, sharing of information, experiences and technology transfer. In addition, long-term benefits will accrue to stakeholders in other parts of the arid/semi-arid zones of Africa once the project results are replicated. The technical staff of relevant government agencies, NGOs and other development partners in the project areas, will benefit from training, equipment and logistical support, so that they can better assist the populations and facilitate natural resource management efforts. The three governments will benefit from increased collaboration, sharing of information, experiences and technology transfer.
23. In addition, in the research institutes and universities, such as the universities of Moi and Nairobi in Kenya, Egerton, University of Botswana, University of Oslo, Agriculture University of Norway and Higher education institutions in Mali will benefit from enhanced collaboration in scientific work. This enhanced collaboration between these institutions will also create a number of opportunities for students in the participating countries to benefit from student exchanges and training at various levels through the University of Oslo. The collaboration between these institutions will also facilitate collaborative research with direct community involvement and will therefore provide a strong basis for integrating modern scientific approaches with traditional ones.

Table 3.1: Stakeholder involvement in different phases of the project.

PROJECT INVOLVEMENT	Local Population										Admin	NGOs	Comm. Groups	Co-ops/ EIG	Pr oj ec ts	Tech. Services	Research & Training Institutions	Private Sector
	F	SP	T	W	Y	FU	CL											
REPARATION	+	+	+	+	+	+	++				+	++		+		++		+
IMPLEMENTATION (by component)																		
ESTABLISHMENT OF APPROPRIATE INDIGENOUS MANAGEMENT SYSTEMS AND IN-SITU BIODIVERSITY CONSERVATION	+	+	+	+	+	+	++	+			++	++		+				+
ESTABLISHMENT OF ARID ZONE DATABASE AND GIS	+	+	+	+	+	+	+	+			++	++		+				+
REHABILITATION OF INDIGENOUS VEGETATION	+	+	+	+	+	+	+	+	+		+++	+++		++				++
IMPROVED LIVESTOCK PRODUCTION AND MARKETING, AND PROVISION OF ALTERNATIVE LIVELIHOODS	+	+	+	+	+	+	+	+	+		++	++		+++				+
TECHNOLOGY TRANSFER AND TRAINING	+	+	+	+	+	+	++				+++	+++		++				++
TARGETED RESEARCH	+	+	+	+	+	+	+	+			++	++		++				+++
EVALUATION	+	+	+	+	+	+	+	+			+++	+++		++				+++

Legend: F=Farmers, SP=Sedentary Pastoralists, T= Transhumants, FU=Forest Users, CL= Community Users, W=Women, Y=Youth, Co-op= Co-operatives, EIG=Economic Interest Groups.

Note: The number of + indicates the intensity of intervention by each stakeholder group.

ANNEX VI. TARGETED RESEARCH OVERVIEW (examples of topics that might be worked on)

Components	Targeted Research Outputs	Targeted Research Activities
<p>1. Establishment of appropriate indigenous management systems, and in-situ biodiversity conservation.</p>	<p>Management of indigenous vegetation strengthened and community capacity building achieved.</p> <p>Capacity for self reliance and project evaluation developed at the community level.</p>	<ul style="list-style-type: none"> • Develop participatory planning methods. • Develop community participatory action plans. • Develop community biodiversity registers. • Develop community herbaria. • Develop community assessment methods.
<p>2. Establishment of arid/semi-arid zone biodatabase and GIS.</p>	<p>Information made available for different stakeholder participants and for comparative regional replications.</p> <p>Community capacity for decision making strengthened and technological transfers achieved.</p>	<ul style="list-style-type: none"> • Establish database on natural resource management. • Develop capacity within country on transfer of GIS technology. • Evaluate use of GIS for Technological transfer to the local communities. • Co-ordinate analysis and write up of raw data existing in local archives/ synthesize information for management of natural resources.
<p>3. Rehabilitation of indigenous vegetation</p>	<p>Rehabilitation of degraded indigenous vegetation achieved.</p> <p>Community participation increased.</p> <p>Scientific and indigenous knowledge systems integrated to improve management of indigenous vegetation.</p> <p>Soil loss reduced and mobile dunes fixed.</p> <p>Threats of wildfires reduced.</p>	<ul style="list-style-type: none"> • Demonstrate management of degraded indigenous vegetation using: <ul style="list-style-type: none"> • natural regeneration; • re-seeding; • water harvesting techniques for tree planting; • development of soil stabilisation methods. • Conduct monitoring. • Establish fire management techniques.
<p>4. Improvement of livestock production and marketing, and provision of alternative livelihoods.</p>	<p>Participation in alternative livelihood technologies increased.</p> <p>Information on marketing made accessible to the communities.</p> <p>Development of livestock marketing policies facilitated.</p> <p>Economics of fodder grown by irrigation demonstrated.</p> <p>Improved wild cereal breeds selected.</p>	<ul style="list-style-type: none"> • Demonstrate alternative livelihoods for agro-pastoralists. • Provide information on marketing of goods and services from demonstration sites. • Develop livestock and range products marketing policy. • Demonstrate growing of fodder by irrigation on trial basis. • Select suitable forage plants and wild cereals for improved breeding.
<p>5. Technology transfer, training and comparative learning</p>	<p>Establishment of information exchange systems.</p> <p>Comparative information promotes</p>	<ul style="list-style-type: none"> • Sharing of experiences between demonstration sites on outcomes of management practices. • Synthesis of information for purposes of

	<p>replication of the project results elsewhere in the arid zones of Africa.</p> <p>Communities provided with new skills, which increases the sustainability of the project.</p> <p>Learning exchanged by community participants.</p> <p>Information on regional project improved.</p> <p>Local scientists provided with opportunities to compare experiences with other scientists elsewhere.</p> <p>Manpower development achieved and continuity of the project guaranteed.</p>	<p>regional comparisons.</p> <ul style="list-style-type: none">• Provide community stakeholders with skills regarding improved management of natural resources.• Conduct workshops, study visits, talks and participatory demonstrations.• Conduct annual scientific seminars.• Facilitate visits to local and international Universities by researchers from the countries.• Organise training at M.Sc. and PhD levels through the University of Oslo.
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ANNEX VII: National Component Budgets

**ANNEX VII - A : BOTSWANA NATIONAL COMPONENT BUDGET
BOTSWANA BUDGET FOR INDIGENOUS VEGETATION**

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

PROJECT PERSONNEL

International Experts & Consultants												
Consultant - Indigenous Management	NEX	20,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Consultant - Range Rehabilitation	NEX	20,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Consultant - Livestock Marketing	NEX	20,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Consultant - Dissemination	NEX	4,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Consultant - Short-term consultants	NEX	10,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Line Total		74,000	6,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000

Admin. Support Personnel

Admin Secretary	NEX	68,248	12,000	12,120	13,332	14,665	16,131
Driver 1	NEX	34,123	6,000	6,060	6,666	7,332	8,065
Driver 2	NEX	34,123	6,000	6,060	6,666	7,332	8,065
Driver 3	NEX	34,123	6,000	6,060	6,666	7,332	8,065
Temporary Assistant	NEX	5,000	1,000	1,000	1,000	1,000	1,000
Line Total		175,617	31,000	31,300	34,330	37,661	41,326

Duty Travel

Duty Travel (eval mission)	NEX	10,000	2,000	2,000	2,000	2,000	2,000
Line Total		10,000	2,000	2,000	2,000	2,000	2,000

Mission Costs

Missions to RCU	NEX	5,000	1,000	1,000	1,000	1,000	1,000
Int. Exchange Visits	NEX	20,000	5,000	5,000	5,000	5,000	5,000

Line Total	-----	25,000	6,000	6,000	6,000	6,000	6,000	1,000
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National Professionals								
National Project Leader	NEX	136,497	24,000	24,240	26,664	29,330	32,263	
CSU Manager 1	NEX	61,211	12,000	12,120	12,241	12,363	12,487	
CSU Manager 2	NEX	61,211	12,000	12,120	12,241	12,363	12,487	
CSU Manager 3	NEX	61,211	12,000	12,120	12,241	12,363	12,487	
Consultant - Evaluation	NEX	13,000			6,000		7,000	
Line Total	-----	333,130	60,000	60,600	69,387	66,419	76,724	

COMPONENT TOTAL	-----	617,747	105,000	117,900	129,717	128,080	137,050	
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SUBCONTRACTS

Subcontract A								
Transfer of Technologies	NEX	81,000	9,000	18,000	18,000	18,000	18,000	18,000
Sub-contract B								
Transfer of Energy Savings	NEX	20,000		5,000	5,000	5,000	5,000	5,000
Sub-contract C								
Biomass technology	NEX	55,000		15,000	15,000	15,000	10,000	
Sub-contract D								
Mass Media Campaigns	NEX	20,000	4,000	4,000	4,000	4,000	4,000	4,000
Sub-contract E								
Environmental Education	NEX	20,000	4,000	4,000	4,000	4,000	4,000	4,000
Sub-contract F								
Indigenous Mgt Systems	NEX	256,972	44,000	60,000	56,000	60,000	36,972	
Sub-contract G								
Arid Zone Biodatabase	NEX	85,000	17,000	17,000	17,000	17,000	17,000	
Rehab. of Indigenous Veg.	NEX	510,000	90,000	110,000	110,000	110,000	90,000	
Livestock Prod. and Marketing	NEX	135,000	27,000	27,000	27,000	27,000	27,000	

COMPONENT TOTAL	-----	1,182,972	195,000	260,000	256,000	260,000	211,972	
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TRAINING

Group Training								
Seminars/Study Tours	NEX	20,000		5,000	5,000	5,000	5,000	5,000

Community Stakeholders	NEX	70,000	10,000	15,000	15,000	15,000	15,000
Conferences & Meetings							
Community Policy	NEX	14,000	2,000	3,000	3,000	3,000	3,000
Meetings							
Conferences & Meetings							
Technical Meetings	NEX	10,000	2,000	2,000	2,000	2,000	2,000
Conference Services	NEX	20,000	4,000	4,000	4,000	4,000	4,000
COMPONENT TOTAL		134,000	18,000	29,000	29,000	29,000	29,000

EQUIPMENT							
Local Procurement of Equipment							
Equipment	NEX	218,372	103,471	28,171	27,882	29,421	29,427
COMPONENT TOTAL		218,372	103,471	28,171	27,882	29,421	29,427

MISCELLANEOUS							
Reporting Costs							
Reports including Audit	NEX	13,500	1,500	2,000	6,000	2,000	2,000
Newsletter	NEX	10,000	2,000	2,000	2,000	2,000	2,000
Maps	NEX	5,000	1,000	1,000	1,000	1,000	1,000
Sundries	NEX	25,000	5,000	5,000	5,000	5,000	5,000
Support Services	NEX	80,000	16,000	16,000	16,000	16,000	16,000
MISCELLANEOUS TOTAL		133,500	25,500	26,000	30,000	26,000	26,000
BUDGET TOTAL		2,286,591	446,971	461,071	472,599	472,501	433,449

ANNEX VII - B : KENYA NATIONAL COMPONENT BUDGET

NATIONAL PROJECT BUDGET: KENYA (US\$)		2001	2002	2003	2004	2005	
B.L.	DESCRIPTION	TOTAL	2001	2002	2003	2004	2005
10	PROJECT PERSONNEL						
11	International consultants						
11-01	Range Rehabilitation	20,000		5,000	5,000	5,000	5,000
11-02	Livestock marketing	20,000		5,000	5,000	5,000	5,000
11-99	Sub Total	40,000		10,000	10,000	10,000	10,000
13	Administrative Support						
13-01	Admin/Secretaries(3)	68,249	12,000	12,120	13,332	14,665	16,132
13-02	Driver(3)	62,645	10,800	10,808	11,999	14,519	14,519
13-03	Overtime	2,500	500	500	500	500	500
13-04	Temporary assistance	2,500	500	500	500	500	500
13-05	Administrative Assistants	81,898	14,400	14,544	15,998	17,598	19,358
13-99	Sub Total	217,792	38,200	38,472	42,329	47,782	51,009
15	Monitoring and Evaluation						
15-01	Evaluation	18,000	1,000	2,000	5,000	5,000	5,000
15-99	Sub Total	18,000	1,000	2,000	5,000	5,000	5,000
16	Mission Costs						
16-01	Mission to RCU	25,000	5,000	5,000	5,000	5,000	5,000
16-02	Mission to sites	25,000	5,400	5,400	5,400	4,400	4,400
16-99	Sub Total	58,330	12,066	12,066	12,066	11,066	11,066
17-00	National Professionals/Consultants						
17-01	National Project Manager	136,497	24,000	24,240	26,664	29,330	32,263
17-02	National Project Liaison Officer	95,548	16,800	16,968	18,665	20,531	22,584
17-03	Field Officer(2)	136,497	24,000	24,240	26,664	29,330	32,263
17-04	Indigenous Mgt. Systems	25,000	5,000	5,000	5,000	5,000	5,000
17-05	Methods of dissemination	4,000		2,000	2,000		
17-99	Sub-Total	397,542	69,800	72,448	78,993	84,191	92,110
19	COMPONENT TOTAL	731,667	121,066	134,986	148,388	158,039	169,188
20	CONTRACTS						
22	Sub Contracts						
22-01	Transfer of technologies	53,000	3,000	8,000	10,000	14,000	18,000
22-02	Transfer of energy savings	18,000		4,500	4,500	4,500	4,500

22_03	Recy. of biomass technology	45,000	0	13,000	13,000	15,000	4,000
22_04	Mass media campaigns	15,000	3,000	3,000	3,000	3,000	3,000
22_05	Environment Education	15,000	3,000	3,000	3,000	3,000	3,000
22_06	Indigenous Mgt. systems	180,000	15,000	25,000	35,000	60,000	45,000
22_07	Arid zone bio-database	70,000		18,000	28,000	12,000	12,000
22_08	Rehab. Of Indigenous Veg.	450,000	20,000	70,000	120,000	120,000	120,000
22_09	Livestock prod. & Marketing	210,000	35,000	40,000	45,000	45,000	45,000
29	COMPONENT TOTAL	1,056,000	79,000	184,500	261,500	276,500	254,500
30	Group Training						
32_01	Study tours/exchange visits	20,000		5,000	5,000	5,000	5,000
32_02	Participation/Extension services	70,000	10,000	15,000	15,000	15,000	15,000
32_03	Workshop/Seminars	61,102	11,102	15,000	15,000	10,000	10,000
32_04	Community policy meetings	14,000	2,000	3,000	3,000	3,000	3,000
32_05	Multi-disciplinary team meetings	18,000	2,000	4,000	4,000	4,000	4,000
32-99	Sub-Total	183,102	25,102	42,000	42,000	37,000	37,000
39	COMPONENT TOTAL	183,102	25,102	42,000	42,000	37,000	37,000
40	Equipment and premises						
45	Equipment						
45_01	Office supplies	6,550	2,000	1,500	1,050	1,000	1,000
45_02	Library Acquisitions	2,500	500	500	500	500	500
45_03	Computer software	4,000	1,000	500	500	1,000	1,000
45_04	Office equipments	18,333	18,333				
45_05	Maintenance of premises	9,582	2,102	1,460	1,760	2,500	1,760
45_06	Photocopying equipment	10,000	10,000				
45_07	Operations and Maintenance	2,250			750	750	750
45_08	Fuel/Operations maintenance of vehicles	46,910	9,382	9,382	9,382	9,382	9,382
45_09	Computer (6)	18,000	18,000				
45_10	Video equipment	10,000	10,000				
45_11	Vehicles(3)	90,000	90,000				
49	COMPONENT TOTAL	218,125	161,317	13,342	13,942	15,132	14,392
50	Miscellaneous Component						
52	Reporting						

52 01	Reporting including audit	9,500	1,500	2,000	2,000	2,000	2,000	2,000	2,000
52 02	Publication of newsletters	20,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
52-03	Printing of Thematic Maps	5,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
52-99	Sub-Total	34,500	6,500	7,000	7,000	7,000	7,000	7,000	7,000
53-	Sundries								
53 01	Communications	30,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
53 02	Postage and Pouch	2,500	500	500	500	500	500	500	500
53 03	Freight and port clearance	24,000	20,000	1,000	1,000	1,000	1,000	1,000	1,000
54	Support Services	80,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
53-99	Sub-Total	136,500	42,500	23,500	23,500	23,500	23,500	23,500	23,500
59-	COMPONENT TOTAL	170,500	49,000	30,000	30,500	30,500	30,500	30,500	30,500
99-	GRAND TOTAL	2,351,561	427,152	405,328	496,330	517,171	505,580		
100	Cost-sharing								
101	Government contribution								
101_0	Office Rental	110,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
101_0	Tax exemption	40,000	40,000						
101_0	Technical Services at the districts	150,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
101-04	Community Contribution	250,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
109	COMPONENT TOTAL	550,000	142,000	102,000	102,000	102,000	102,000	102,000	102,000
999	PROJECT TOTAL	2,901,561	569,152	507,328	598,330	619,171	607,580		

ANNEX VII - C : MALI NATIONAL COMPONENT BUDGET

MALI	PROJECT NUMBER:	DESCRIPTION	TOTAL	2001	2002	2003	2004	2005
BL		DESCRIPTION	TOTAL	2001	2002	2003	2004	2005
10		PROJECT PERSONNEL						
11		International Experts						
11-01		International Consultant (8m/m)	0	0				
11-2		Water Resources (2m/m)	19,800	9,900	9,900			
11-03		Land Resources (2m/m)	9,900	9,900				
11-04		Energy Resources (2 m/m)	19,800		9,900	9,900		
11-05		Remote Sensing (1 m/m)	9,900	9,900				
11-05		GIS Data Base (1 m/m)	9,900		9,900			
11-06		Animal Feed, Veterinarian (2 m/m)	9,900		9,900			
11-07		Other Consultants (2 m/m)	19,800			9,900	9,900	
11-99		Sub-Total	99,000	29,700	39,600	19,800	9,900	0
13		Administrative Support						
13-01		Administrative Support	154,334	29,914	30,028	30,703	31,441	32,248
13-02		Overtime	8,570	1,714	1,714	1,714	1,714	1,714
13-99		Sub-Total	162,904	31,628	31,742	32,417	33,155	33,962
15		Monitoring & Evaluation						
15-01		Mission to RCU	21,430	4,286	4,286	4,286	4,286	4,286
15-02		Mission to and from sites	8,570	1,714	1,714	1,714	1,714	1,714
15-99		Sub-Total	30,000	6,000	6,000	6,000	6,000	6,000
16		Mission Costs						
16-01		Evaluation	17,142	1,714	2,571	5,143	2,571	5,143
16-99		Sub-Total	17,142	1,714	2,571	5,143	2,571	5,143
17		National Consultants						
17-01		National Project Leader	116,997	20,571	20,777	22,855	25,140	27,654
17-02		CSU Manager Bamba	52,467	10,286	10,389	10,492	10,597	10,703
17-03		CSU Manager Nara	52,467	10,286	10,389	10,492	10,597	10,703
17-04		Field Officer	83,949	16,457	16,622	16,788	16,956	17,126

17-05	Conference Services	10,715	2,143	2,143	2,143	2,143	2,143	2,143	2,143
17-06	National Consultants	20,570	4,114	4,114	4,114	4,114	4,114	4,114	4,114
17-99	Sub-Total	337,165	63,857	64,434	66,884	69,547	72,443	72,443	72,443
19	COMPONENT TOTAL	646,211	132,899	144,347	130,244	121,173	117,548	117,548	117,548
20	CONTRACTS								
21	Land Resources Management								
21-01	Rehabilitation with indigenous vegetation	176,207	89,480	22,242	22,243	42,242			
21-02	Establishment of folder banks	171,144	59,429	80,858	30,857				
21-03	Grazing and water points control	7,925	1,585	1,585	1,585	1,585		1,585	1,585
22	Water Resources Management	446,492	333,599	112,893					
23	Aerial Surveys (2*2)	66,667	33,334						33,333
24	Pilot sites surveys (topography etc...)	37,500	37,500						
25	Establishment of GIS	151,100	100,000	51,100					
21-99	Sub-Total	1,057,035	654,927	268,678	54,685	43,827		43,827	
29	COMPONENT TOTAL	1,057,035	654,927	268,678	54,685	43,827	43,827	43,827	43,827
30	TRAINING								
32	Other Training								
32-01	Monitoring, Evaluation & Research								
	Funded by RCU Budget & NPU running costs								
	(p. m.)								
45	EQUIPMENT								
45-02	Non-Expendable Equipment								
45-02-01	Vehicles (1 station wagon, 2 pick-up, 1MB 4x4 or Unimog, 2*2 motorcycles)	170,154	143,040			27,114			
45-02-02	Office Equipment	32,975	32,975						
45-02-03	Technical Equipment	199,500	164,072	19,000	16,428				
45-02-04	Transport and draught animals	10,431	10,431						
45-03	Operations (incl. Maintenance & communication)	363,134	91,742	73,443	66,125	66,125		65,699	65,699
45-99	Sub-Total	776,194	442,260	92,443	109,667	66,125		65,699	65,699
49	COMPONENT TOTAL	776,194	442,260	92,443	109,667	66,125	66,125	65,699	65,699
50	MISCELLANEOUS								
51	Sundries	5,007	1,007	1,000	1,000	1,000	1,000	1,000	1,000

52	Reporting including Audit	4,500	500	1,000	1,000	1,000	1,000	1,000
52-01	Publication of newsletter	9,300	1,000	1,500	2,000	2,000	2,000	2,800
52-02	Printing of thematic maps	5,000	1,000	1,000	1,000	1,000	1,000	1,000
54	Support Services	80,000	16,000	16,000	16,000	16,000	16,000	16,000
50-99	Sub-Total	9,507	1,507	2,000	2,000	2,000	2,000	1,000
59	COMPONENT TOTAL	103,807	19,507	20,500	21,000	21,000	21,000	21,800
70	Microcapital Grants (community revolving fund)	50,000	15,000	15,000	10,000	10,000	10,000	
99	GRAND TOTAL	2,633,247	1,264,593	540,968	325,596	262,125	205,047	

ANNEX VIII : Regional component budget (in UNEP format)
(this budget will be managed by UNEP)

UNEP BUDGET FOR THE REGIONAL COORDINATION UNIT, SUB-CONTRACTS
WITH UNDP COUNTRY OFFICES AND UNEP PARTICIPATION COST

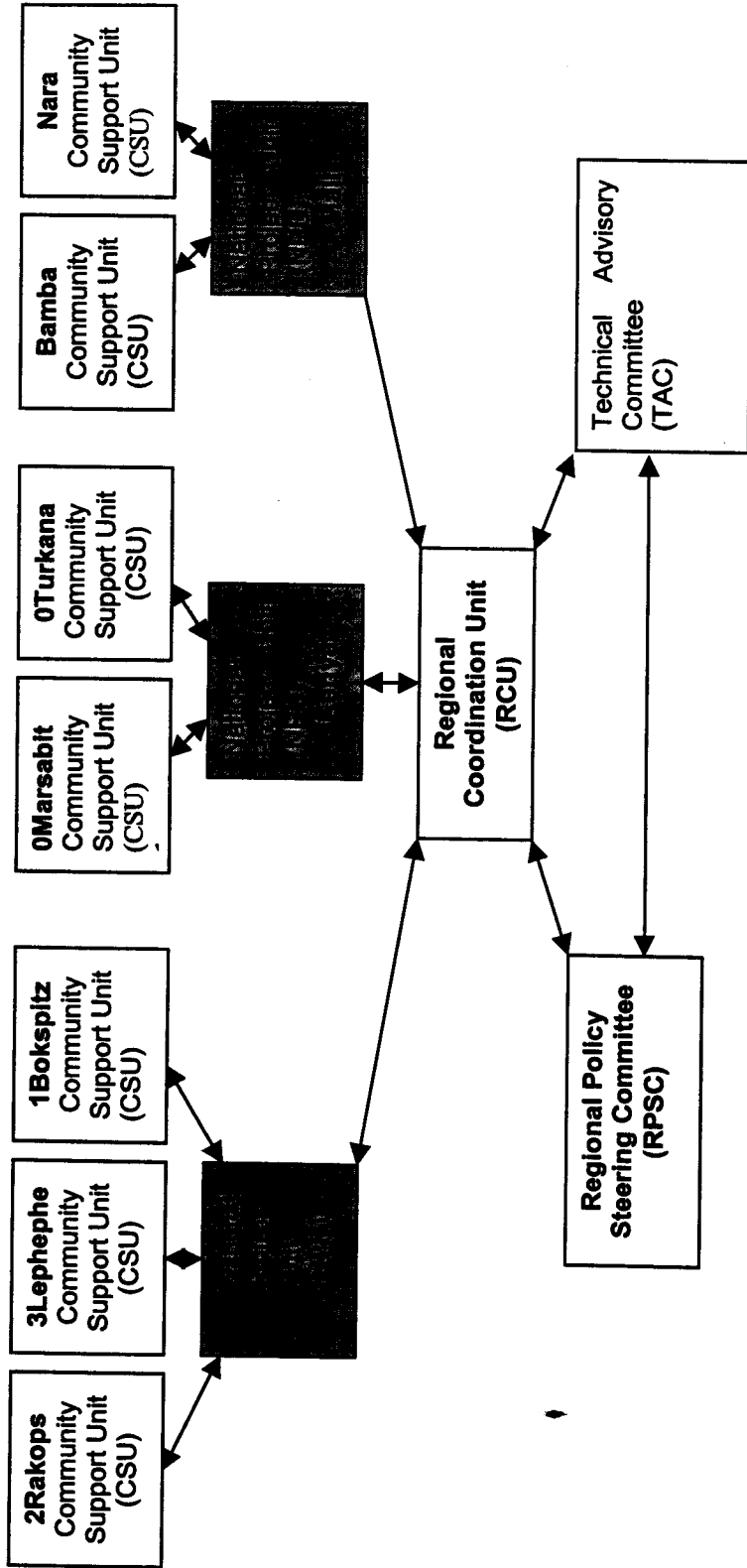
10 PROJECT PERSONNEL COMPONENT	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1100 Project Personnel	\$	\$	\$	\$	\$	\$
1101 Regional Coordinator	36,000	36,360	39,996	43,995.6	48,395.16	204,747
1102 Technical Expert	36,000	36,360	39,996	43,995.6	48,395.16	204,747
1103 Admin/Secretary	18,000	18,180	19,998	21,997.8	24,197.58	102,373
1104 Driver	6,000	6,060	6,666	7,332.6	8,065.86	34,124
1199 Total	96,000	96,960	106,656	117,322	129,054	545,991
1200 Consultants						
1201 Land management	10,000	5,000	10,000	5,000	5,000	35,000
1202 Water resources management	10,000	5,000	5,000	5,000	5,000	30,000
1204 Methods of dissemination	0	5,000	5,000	5,000	5,000	20,000
1220 Consultants	2,000	2,000	2,000	2,000	2,000	10,000
1299 Total	22,000	17,000	22,000	17,000	17,000	95,000
1300 Administrative support						
1320 Overtime	1,200	1,200	1,200	1,200	1,200	6,000
1321 Temporary assistance	500	500	500	500	500	2,500
1322 Conference Services	5,000	5,000	5,000	5,000	5,000	25,000
1399 Total	6,700	6,700	6,700	6,700	6,700	33,500
1600 Travel on official business						
1601 Mission to Oslo	5,000	5,000	5,000	5,000	5,000	25,000
1602 Mission to sites	10,000	10,000	10,000	10,000	10,000	50,000
1699 Total	15,000	15,000	15,000	15,000	15,000	75,000
1999 Total	139,000	136,960	150,656	150,022	167,754	684,392
20 SUB CONTRACT COMPONENT						
2200 Sub-contracts (MoU's/LA's for non-profit supporting organizations)						
2201 Transfer of technologies	10,000	5,000	10,000	5,000	10,000	40,000
2202 Transfer of energy savings	0	5,000	5,000	5,000	5,000	20,000

2203	Recy. of biomass techno	0	5,000	5,000	5,000	5,000	5,000	20,000
2204	Mass-media campaigns	10,000	5,653	5,653	5,653	10,000	10,000	36,959
2205	Environmental education	20,000	10,000	10,000	10,000	15,000	15,000	65,000
30 Research and Training Component (co-financed by University of Oslo)								
3100	Scientific assessments, monitoring and evaluation							
3101	RCU, University of Oslo and UNEP	30,000	20,000	30,000	30,000	40,000	40,000	150,000
3199	Total	30,000	20,000	30,000	30,000	40,000	40,000	150,000
3301	RPSC Meetings	20,000	20,000	20,000	20,000	20,000	20,000	100,000
3399	Total	20,000	20,000	20,000	20,000	20,000	20,000	100,000
40 Equipment & Premises Component								
4100	Expendable Equipment							
4101	Vehicle operation and maintenance	5,000	5,000	5,000	5,000	5,000	5,000	25,000
4199	Total	5,000	5,000	5,000	5,000	5,000	5,000	25,000
4200	Non-expendable							
4201	Computers (3)	6,000						6,000
4202	Office equipment	20,000						20,000
4203	Video equipments	15,000						15,000
4220	Vehicles (2)	40,000						40,000
4299	Total	81,000						81,000
4300	Premises							
4301	Office rental including meeting room	10,000	10,000	10,000	10,000	10,000	10,000	50,000
4302	Maintenance	100	200	500	500	500	500	1,800
4399	Total	10,100	10,200	10,500	10,500	10,500	10,500	51,800
4399	Total	91,100	45,200	45,500	45,500	45,500	45,500	177,800
50 Miscellaneous Component								
5100	Operation and maintenance of equipment							
5101	Computers	0	0	500	500	500	500	1,500
5102	Photocopy equipments	0	0	250	250	250	250	750

5199 Total	0	0	750	750	750	2250
5200 Reporting	500	1,000	1,000	1,000	1,000	4,500
5201 Publication of newsletter	1,000	1,000	1,000	1,000	1,000	5,000
5202 Printing of thematic maps	1,000	1,000	1,000	1,000	1,000	5,000
5299 Total	2,500	3,000	3,000	3,000	3,000	14,500
5300 Sundry						
5301 Communications	6,000	6,000	6,000	6,000	6,000	30,000
5302 Postage & pouch	500	500	500	500	500	2,500
5303 Freight & port clearance	10,000	1,000	1,000	1,000	1,000	14,000
5304 Other						
5399 Total	16,500	7,500	7,500	7,500	7,500	46,500
5400 Hospitality & entertainment						
5401 Hospitality reception	2,500	2,500	2,500	2,500	2,500	12,500
5499 Total	2,500	2,500	2,500	2,500	2,500	12,500
6000 UNEP PARTICIPATION COST						
6100 Project personnel (L4-post 18% of time)	10,520	10,520	10,520	10,520	10,520	52,600
6160 Travel on official missions to sites	5,000	5,000	5,000	5,000	5,000	25,000
6999 Total UNEP Participating Cost	15,520	15,520	15,520	15,520	15,520	77,600
GRAND TOTAL	44,820	20,083	26,779	25,115	29,524	1,392,600

ANNEX IX :

Organigram of the structure of the project



LIST OF ACRONYMS/ABBREVIATIONS USED

BRIMP: Botswana Range Inventory and Monitoring Project
CBD: Convention on Biological Diversity
DMI: Desert Margins Initiative
GEF: Global Environment Facility
GIS: Geographic Information System
GOB: Government of Botswana
GOK: Government of Kenya
GOM: Government of Mali
GTX: Deutsche Gesellschaft für Technische Zusammenarbeit
IGN: Institut Geographique National
IPAL: Integrated Project in Arid Lands
IUCN: World Conservation Union
NEAP: National Environment Action Plan
NES: National Environment Secretariat (Kenya)
NORAD: Norwegian Agency for Development Cooperation
NPL: National Project Leader
NPU: National Project Unit
OFP: Operational Focal Point
PLEC: People, Land Management and Environmental Change
PNAE: Plan National d'Action Environnementale
RCU: Regional Coordination Unit
RPSC: Regional Policy Steering Committee
SADC: South African Development Community
STAP: Scientific and Technical Advisory Panel
TAC: Technical Advisory Committee
TREMU: Turkana Resources Evaluation and Monitoring Unit
UNDP: United Nations Development Programme
UNEP: United Nations Environment Programme
UNESCO: United Nations Educational, Scientific and Cultural Organisation