The Study Report

A Synthesis of Factors Affecting Dryland Forests & Biodiversity Policies and their Implementation in the IGAD Region

By

James Mutimu
EU/IGAD Consultant

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Introduction

Africa has a wealth of natural resources, including, forests, wildlife, rich marine and terrestrial and biological diversity and mineral. But its natural wealth has not fully contributed to the African economic development. Throughout Africa, poverty is a major cause and a consequence of environmental degradation but with more severe impacts in the horn of Africa due to increased aridity, conflict and lack of enabling policies. Improving the living conditions of the poor majority remains the top political and economic imperative if Africa is to move towards sustainable development.

The 150 heads of States and government recognized this situation when they adopted on 8th September 2000 when they adopted the Millennium Declaration, at the United Nations Millennium Summit.

Further to this, the linkage between poverty and the environment in Africa was also emphasized during the inaugural meeting of the implementation committee of heads of state and government on the New partnership for Africa's development (NEPAD), held in Abuja, on 23rd October 2001.The African leaders recognized that a healthy and productive environment is a prerequisite for NEPAD to achieve its objectives. This called for the inclusion of an environmental initiative which identified eight areas of intervention as follows: global warming, cross-border conservation, environmental governance, combating desertification, wetland conservation, control and management of alien species and financing.

The African drylands and mostly the drylands in the horn of Africa harbor globally significant biodiversity and are also being recognised as important areas of speciation and genetic variability .Although the total number of species in these areas are lower than in other biomes, the percentage of endemism is very high. However these areas face many developmental and conservation challenges. The most significant being that of land fragmentation that results from the expansion of crop agriculture, associated with deforestation and sedentary overgrazing, thereby threatening the biodiversity of these dry land ecosystems.

To address these challenges, the Horn of Africa region through the IGAD Secretariat has draw a proposal that targets to improve the policies and institutional governance of Dryland Forests and Biodiversity Management (DF&BM) in the IGAD region, identify and disseminate the best practices for conserving and sustainably using biodiversity and dryland forests in the arid and semi arid ecosystems; increase cross bonder collaboration in drlands biodiversity and forest management by facilitating exchange of information, research collaboration and coordination disseminating lessons and best practices and facilitating the efforts of local communities to manage and sustainably utilize the dry land ecosystems.

The DF & BM proposal will borrow from the approach and experiences of the Desert Margins Program (DMP) that brought together nine countries of Sub-Saharan Africa to address common dryland problems under GEF funding. The countries are: Kenya, Botswana, Burkina Faso, Mali, Namibia, Senegal, Niger, South Africa and Zimbabwe. Unlike the DMP which build on the National Action Plans(NAPs) of the CCD, DF&BM will use selected dryland ecosystems both in- country and cross bonder to promote the conservation and sustainable utilization of dry land forests and biodiversity to improve the livelihoods of the local people and to reduce resource use conflicts in the horn region.

Contextual Analysis

Drylands have the lowest development indicators and the highest incidence of poverty. They have remained peripheral to national and regional development due to cultural economic, political and social barriers. In the drylands, human settlements increases with changing land tenure systems, thereby increasing pressure on land as grazing land is taken for cultivation, conservation and for other State uses such as military operations. This results to social insecurity and increase of conflicts over natural resources. Previously before the change of

land tenure from the traditional governance systems in Africa, customary law guided the land use where land was land was conveniently divided into zones each belong strategically located to suit a particular user such as grazing, common water points and human settlement. These systems had very minimal impacts to the ecological functions in the drylands and the adjacent rangelands, and thus maintained the vegetation cover and the biodiversity thereof. With the changing land tenure and land uses in the drylands, there is inadequacy of land use policies especially in determining what land uses to be accommodated owing to the high degree of vulnerability and difficulty of restoration once the drylands are significantly modified. This call for review of dry land policies to formulate policies that address the current and potential future challenges in the dryland.
Most dry land ecosystems in the IGAD region transcend national boundaries, but the absence of inter and intra regional arrangement or and cooperation over the agreements over such lands and their natural resources has contributed greatly to their under-development and to the escalation of transboundary tension and conflicts in those shared ecosystems. The proposed program targets to address the problems and challenges associated with dry land ecosystems natural resources(dry land forests and biodiversity) focusing mainly on landscapes the transcend regional boundaries.

THREATS TO DRY LAND FORESTS AND BIODIVERSITY MANAGEMENT IN THE IGAD REGION

Biodiversity Threats

The IGAD region is well known for its rich and biological resources and for its variety of habitats which ranges from high Montale forests to dense tropical lowland forests, plains and savannah ecosystems. The sub regions savannah parks have large populations of diverse animal species of antelopes, buffalo and other ungulates as well as rhino, hippos, crocodiles, elephants and large cats e.g. the Maasai Mara -Serengeti ecosystem which has high wildlife density. This richness makes the savannah parks to be very popular as tourist destinations. Most of these biological resources are thus found in the drylands where most wildlife parks, biosphere reserves and Ramsar sites a located. Conversely the rate biodiversity degradation and loss is highest in the high potential areas where agriculture potential is high leading the natural habitat being replaced by agricultural fields and human settlements. But recent trends indicate that the drylands have also started experiencing the challenge of encroachment due to population increase and use of irrigation technologies to grow crops in particularly the semi arid areas .This has resulted into loss of habitat for biodiversity and loss of species.
The resilience of dryland ecosystems is undermined by non-sustainable natural resources exploitation, wide spread environmental degradation, emergence of non-compatible land use systems and the influx of more people from high potential areas who continue to practice inappropriate land uses for livelihood support. In the IGAD sub region, the impact of climate variability and climate change has increased; while the scarcity of natural resources has fuelled conflicts and tribal animosity. The practices and responses by the people to increased poverty and human conflicts have resulted in non sustainable land use practices, extreme poverty and a great threat to coexistence of livestock and biodiversity in the dry land ecosystems. With the sub regions population growing at about 3 percent per annum, the pressure on natural resources and especially in the drylands are likely to increase in future (World Bank 2001a).

The following are the main threats to biodiversity and forest resources in the Horn of Africa's drylands:

- Clearing of natural habitats to give way for agriculture. This causes displacement of wildlife leading to increase in the incidences of human wildlife conflicts. This has been experience in

Kenya with the incidences of human wildlife conflict increasing significantly in Kajiado and Narok district as more wildlife habitat is encroached by other land uses

- Lack of adequate legal framework where some rich wildlife habitats are not adequately protected by law. A good example in Ethiopia where out of 38 wildlife conservation areas , only two are gazetted there by giving the legal protection(EPA/MEDC 1997).

- Poor monitoring of dryland biodiversity due to inadequate funding for management leading to damage of critical ecosystems. Most parts of Gabella National Park in Ethiopia have been converted into irrigated agriculture while another part has been settled by refugees from Sudan (EPA/MEDC 1997), human settlement in Lakes Abijatta-Shalla National Park and permanent settlements in Awash National Park

- Poor domestication of the Convention on Biological Diversity (CBD). With exception of Uganda which has a protected area system plan the other IGAD member states fall short of planning within the framework of CBD.

- Changes in Institutional mandates and political instability. In Uganda and Ethiopia, protracted civil war destroyed a lot of infrastructure necessary for the protection and management of biodiversity protected areas. For Example four Ethiopian National Parks lost their facilities including ranger camps and equipment, while in Uganda two parks have remained closed to both management and tourism. In Somalia civil strife has decimated their biological resources as no management or legal protection is in place while the civil war in Southern Sudan is responsible for the poor institutional framework for biodiversity resources in the south despite the rich biological resource in Imatong, Boma and Nimule ecosystems.
- Lack of adequate research and documentation on the sub-region's biodiversity, especially regarding indigenous knowledge such as traditional uses, of species, traditional conservation practices and limitations of use for sustainable utilization

Table 1**.** Below shows the numbers of threatened in the species per country by the year 2000.
From the table its apparent that threat to biodiversity is very high with at total of 531 species in the region being under threat. This includes breakdown total of 163 species of mammals, 81 species of birds, 48 species of fish 31 of invertebrates and 191 species of plants. Its notable that the highest threat is in the category of plants and this could be as a result of degradation, overgrazing desertification and wild fires to mention a few. Since most degradation takes place in the drylands it could be that most of the threatened species are to be found in the drylands but this will require further research to ascertain. Table I data also indicates that large mammals are the second in line of threat in the region. Since most large mammas such as the elephant, rhino, buffalo giraffe lion etc naturally occurs in the land forests commonly referred to as rangeland and in the high montane forests, their increased threat could be as a result of loss of their natural habitat due to encroachment, deforestations. Degradation and other anthropogenic factors. Further research could establish what degradation type causes how much threat to biodiversity species. Country wise, It's in Kenya, Uganda and Ethiopia where species are most threatened accounting for 39, 19 and 14 percent threat respectively, and this could be associated to their high human population growth that is continuously encroaching moist forests for growing of food crops and taking up space in the drylands for settlement, charcoal burning and irrigation thereby disrupting the natural habitat for most species and disrupting the food chains and food webs of others.

Table 1: Threatened Species in the IGAD region by 2000

Country	Mammals	Birds	Reptiles	Amphibians	Fishes	Invertebrates	Plants	Total	% threat
Djibouti	4	5	0	0	0	0	2	11	2.3%
Eritrea	12	7	6	0	0	0	3	28	5.5%
Ethiopia	34	16	1	0	0	4	22	77	14.5%
Kenya	51	24	5	0	18	15	98	211	39.8%
Sudan	24	6	2	0	0	1	17	50	9.5%
Somalia	19	10	2	0	3	1	17	52	9.8%
Uganda	19	13	0	0	27	10	33	102	19.3%
Total	163	81	16	0	48	31	192	531	

Source IUCN 200a

The DF&BM program should be informed by this data so that the program focuses on the major threats in terms of species and habitat.

Table 2. Shows the threat situation against the corresponding policy and institutional mitigation strategies that may be adopted in the implementation of DF&BM program in the IGAD sub-region drylands

Table 2.Mitigation to biodiversity Threats

Situational Analysis	**Policy/ institutional response**
Loss of biodiversity habitat	Use of GIS for constant monitoring of forest, National Parks and other protected areas. Changing habitat status to world heritage sites, Biosphere Reserves and Transboundary Parks is influential in establishing conservation priorities and attracting funding for conservation. The concept of biosphere reserves established in 1971 by UNESCO and Conservation International established biosphere reserves to protect whole ecosystems rather than selected species. This concept is ideal for transboundary landscape conservation in the IGAD region. Benefit Sharing programmes (CBRM) with communities in wildlife dispersal areas/establishment of wildlife corridors so that they can conserve their habitats and maintain compatible land uses to conservation. These programs have been introduced in Kenya with varying degree of success
Loss of Biodiversity species	Continued regulation through the Convention on International Trade in Endangered Species (CITES) Species reintroduction and ex-situ plant propagation in nurseries to counteract the recent rapid loss of species in the sub region. In Kenya the propagation of the rhino and their reintroduction to the wild has

	plummeted their population in the protected are after they were poached to the endangered level in the 1970s.
Invasive species	Policy instruments that create disincentives for importation of live organisms and germplasm. Tightening controls on importation of products of plant and animal origin despite lack of sufficient resources to police the borders. Mechanical or chemical removal of alien species and or use of biological control
Poor domestication of CBD	Development of National Environmental Action Plans (NEAPS) and National Conservation Strategies which should appreciate the need for regional integration.
Lack of adequate research and documentation on the sub- regions biodiversity	Recognition and inclusion the traditional and cultural contributions to conservation in the national conservation policies. Mainstreaming indigenous knowledge and knowledge holders into the new development projects, partnerships and institutional Conservation Boards
Lack of adequate legal framework where some rich wildlife habitats are not adequately protected by law.	Establishment of Forest or area conservation trust to take management responsibility and long term proprietorship of the biodiversity resource is a partnership between the government and local community. A successful example is the protection of Mgahinga- Bwindi Impenetrable forest Conservation Trust which supports communities around two parks in Uganda. The Trust funds community Development projects and park management activities and the arrangement has been successful (MBIFCT1994).This has a great chance of being replicated in other IGAD biodiversity areas.
Changes in Institutional mandates and political instability	To develop Protected area plans implemented by more than one institution with devolved responsibilities and authority. For example the newly completed Protected Area System Plan for Uganda will be implemented by different management set ups for different conservation aspects including: community wildlife management areas-by communities, forestry reserves-by forest department, animal sanctuaries by Uganda Wildlife Authority

Forest Threats

The climate of IGAD sub-region supports a variety of forest and woodland cover, from dense tropical forests in the humid and mountainous regions of Uganda to the dry savannas of horn of Africa. For this reason the sub-region has a huge diversity of fauna and flora patterns and has some of the richest biodiversity hotspots in Africa. There are four biodiversity hotspots within the IGAD Sub region namely; the Eastern Arc Mountains that straddle a belt between Kenya and Tanzanian, the Imatong Massif of Southern Sudan, the Jebel Elba region along the Red Sea border of Sudan and Egypt and the Jebel Marra region border between Sudan and Chad. The notable observation is that all these biodiversity hotspots occurs in the drylands ecosystems

The forests of the Eastern Arc mountain chain running through Kenya and Tanzania and the Albertine Rift Montane forests of Uganda are also of particular biological importance (Rogers *et al* 19918) The eastern Arc Mountains are the oldest mountains (ranging from 30to 100 million year) in the sub-region and their climate has been influenced by the Indian Ocean, giving rise to areas of forests which have evolved in isolation given their altitude and separation from one another. This isolation has resulted in large numbers of animals and plants being endemic to these forests and they have been identified as one of the 25 hotspots of biodiversity.

Table 3 below shows the structure of the Eastern Arc forests

Mountain/ Forest Site	Number of forest patches	Forest area Km Square	Forest Cover loss by year 2001	Distance from Indian Ocean	Altitude range in m a.s.l.
Taita Hills	13	6	98%	165	1500-2140
North Pare	2	25		220	1300-2130
South Pare	5	211		150	820-2463
West Usambara	17	220	84%	100	1200-2200
East Usambara	8	450		50	130-1506
Nguu mountains	-	140		150	100-1506
Nguru mountains	8	328		150	400-200
Ukaguru Mountains	1	155		220	1500-2250
Uluguru Mountains	5	291	75%	150	300-2400
Rubeho mountains	6	654	37%	300	520-2450
Mahenge mountains	3	5		300	460-140
Udzugwa	26	1017		300	300-2580

These mountains form a cross bonder belt with a stock of bio resources of up to 4000 different species of plants and animals of which 1,500 are endemic to the belt and to the specific mountain sites. These includes a large number of vertebrates species with up to 74 species being endemic, and up to 30 different species of amphibians, 23 species of reptiles , 11 mammalian species and ten species of birds. The Arc Mountains are also recognized by international institutions such as Birdlife International, conservation international, World Wildlife fund as rich biodiversity sites especially for birds, mammals and amphibians. The eastern Arc mountains are also a threaten environment due to the isolated nature of existence as island ecosystems in the heart of drylands.

The Imatong Mountain lies on the Sudan Uganda border rising to a height of 3,187m in the peak of Mt. Kinyeti. The Mountain is rich in floral diversity with about 950 species of plants and is similar in characteristics to the Usambaras of the eastern Arc Mountains

Between 1990 and year 200, the sub region lost 9% of its total forest and woodland cover (FAO 2001) with the highest rates of deforestation being experienced in Uganda(2%per year).In Uganda , it is estimated that forests originally(1890) covered 45% of the country but now accounts for only 21% (MUINR

2000,FAO2001a).Similarly, Ethiopian woodlands and bush land initially covered 30% of the country but now it's only 4% with some of the remaining forests categorized as heavily disturbed (EPA/MEDC 1997), while Kenya has been losing an average of 19,000hactare of forest per annum for the last 20 years.
Table 4 below show the trends of forest cover and corresponding biodiversity status in the IGAD countries between 1990 and 2005 .The data shows the number of threatened species increased with the increase in the annual rate of deforestation as demonstrated in the case of threatened mammals in Kenya Sudan and Ethiopia. The birds do not necessarily follow the mammals' pattern as most are migratory and could be nesting and feeding in forests outside their homing range. The impact of threat to higher plans is also lesser than that of mammals as plants have the ability to regenerate when a forest id restored. It therefore emerges that forest destruction poses a much higher threat to mammals in the IGAD region and the purpose for which forests are conserved need to be re-assessed under DF&BM so as to link forest conservation to the conservation of mammals.

Table 4: Deforestation and biodiversity

Country	Forest Area Thousand sq. km	Average annual deforestation %	Mammals		Birds		Higher plants		
	2005	1990-2005	Total known species 2004	Threatened Species 2004	Total known species 2004	Threatened Species 2004	Total known species 2002	Threatened Species 2002	
Djibouti	-	-	-	-	-	-	-	-	-
Eritrea	16	0.3	70	9	537	7	-	3	
Ethiopia	130	0.9	288	35	839	20	6,603	22	
Kenya	35	0.3	407	33	1,103	28	6,506	103	
Somalia	71	0.9	182	15	642	13	3.028	17	
Sudan	675	0.8	302	16	952	10	3,137	17	
Uganda	36	1.8	360	29	1,015	15	4,900	38	

The following have been identifies as the main causes of deforestation in the sub region;

Inappropriate policies

Inappropriate forest policies and lack of adequate funding for forestry institutions to implement their mandate. Forests have multiple functions with considerable overlaps among agricultural, pastoral, urban and rural development and require broad framework policies for integration of multiple forest

use management. Other than having intersectoral approach forest policies should create transboundary synergy to ease the management and cross border trade of forest products.

High Incidence of poverty

The high incidences of poverty in the drylands drive the local community to overexploitation of resources in the drylands and use of unsustainable methods of cultivation, irrigation and poor harvesting and storage techniques. However drylands forestry may contribute greatly in alleviating poverty and sustaining community livelihoods by stabilizing their environment enhance other production systems such as bee keeping, gum Arabic production etc.

Unsustainable fuel wood and charcoal harvesting

Increased Consumption of wood energy with a daily per capita consumption of 1-2 Kg (NEIC 1994, EPA / MEDC 1997).According to FAO, the demand for fuel wood and charcoal in the region will increase by more than 40% in the next 30 years.

Invasive species

Introduction of invasive species in the effort to green the drylands suppresses the native species causing them to die out hence affecting the dryland biodiversity, the structure and productivity of the dryland forests.

Land tenure

The changing land ownership and subsequent land subdivision in the dryland areas results into some land uses that do not support natural forest conservation or propagation of agro-forestry. Land subdivision in the drylands has lead to the transfer of communal responsibilities of the indigenous communities over the natural resources to individual legal persons. This has lead to deforestation and overexploitation of the available biodiversity resources

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Food insecurity and Population dynamics;

Clearance of forests and woodlands for agricultural extension, in order to feed the ever growing population

A constantly expanding population is adding pressure on drylands forests leading to increased reliance on dryland forest products for energy, food, and other products form medicine to household items, timber and agricultural land leading to clearing of the forests vegetation (deforestation) and overharvesting. This has lead to a growing threat, to the physical integrity, richness, biodiversity and productivity of these dryland forests

Overgrazing and land degradation

Increase in livestock numbers which has increased demand for animal fodder and unsustainable stocking levels exceeding the carrying capacities of the land has lead to land degradation. Dryland forests are rendered as poor fallows and wastelands and can no longer serve as buffer during drought related crises or offer food, fuel and fodder alternatives to communities.

Insufficient knowledge of resources and low institutional capabilities

Most forestry administrations do not have differentiated forest inventory and forest management services. The figures used to enumerate forest resources are often old and inadequate. This results in many negative impacts on the resources going undetected. In all the Sub Saharan countries, there is insufficient human resource to satisfy the huge needs for trained dryland foresters and other specialist for dry zones. Knowledge and expertise needs to be enhanced for systematic assessment, inventory and monitoring of dryland forest resources and processes for better management.

Decreased crop yields entailing increased cropland.

Rainfall is scarce and unreliable in the drlands and long dry spell threaten crop production. This together with the declining soil fertility calling for the opening of new fallow areas in the forests and woodlands by the local communities exerting far more pressure on forests, woodlands and rangelands as agricultural frontiers are extended.

In Uganda, agricultural encroachment has led to the degradation of 7241 hectare Mabira forest by 1981, cleared 10,000 ha of Mt Elgon National Park-Uganda by 1980s and affected the ecological integrities of Luung, Mubuku, Ksangi and Kasyoha Kitomi forests By the time they reached these relatively high potential forests, they had already cleared most of the low lying woodlands in the drylands adjacent to them.

Wild fires

The prevailing high temperatures and inappropriate methods for honey collection such as use of fire has lead to high incidences of wild fires which reduce the biodiversity and integrity of dryland forests especially if followed by a drought.

The impacts of deforestation are huge, ranging from the loss of wildlife habitat as in the case of the gorillas of Bwindi National Park in Uganda to loss of catchment areas as in the case of the deforestation of the Mau escarpment in Kenya which subsequently affects land use such as pastrolism downstream in the drylands where the water from the forest catchment is used for livestock, tourism, agro-pastrolism and for human consumption. The reduction in river flow of the North and South Ewaso-Ngiro rivers in Kenya as a result of deforestation in the Aberdares and Mau escarpment respectively have adversely affected the development activities planned by the North and South Ewaso-Ngiro Development Authorities of improving livelihoods and increasing resilience in the Samburu and Kajiado drylands

Climate change threat

Climate change is emerging as one of the central policy concerns of our time. The problems it raises are difficult ones involving science and economics to make decisions under uncertainty and balancing of interests across generations (DeCanio 1997)

Changes induced by climate change in the drylands are likely to result in species range shifts and altered tree productivity, adding further stress to the forests. There is great concern that many sub-Saharan Africa countries are already in the precarious position regarding food production and agriculture and that climate change is likely to have a far greater human impact in these countries than in more temperate areas. Climate change greatly increases incidences of fire outbreaks due to extreme temperatures, pests and diseases, and shifts in species composition. This is related to inappropriate management of the dry land forests hence deforestation which has depleted the carbon sinks and exacerbated climate change. Table X below contrasts climate change impacts against policy responses as synthesized by the commission on climate change and development regarding climate change in the drylands in their policy brief for March 2008.

Although biodiversity conservation may induce reduced crop yields in the drylands through competition, farmers consider that the overall benefits of the biodiversity rich system override the shortcomings of conservation. During years of drought, annual crops may fail completely but then dryland communities' rely on the products of trees and shrubs to survive the draught

Table 5. Climate Change Impacts on Drylands

Situational Analysis	Policy responses
Drylands population growth rates and poverty indices are very high	Advance regional cooperation to help scale up successful initiatives in the drylands

Poor climate observation data makes climate forecasting very problematic.	Ensure effective public information campaigns to help people understand and respond to climate change challenges faced in different regions
Uncertainties exist in the prediction of drylands responses to elevated CO2 in the atmosphere and global warming.	Support the developing countries' governments in dryland regions to engage effectively with the climate change negotiation process to ensure that they shape up the post- 2012 agreements in ways that are responsive to their priorities
Land tenure –encroachment as a result of land subdivision which interferes with traditional lifestyle of drylands	Ecotourism and conservation enterprises can be used by the pastoral communities to discourage subdivision, where the Maasai for example use their common land to attract tourists and to develop communal enterprises such as ecotourism facilities. This promotes conservation and the areas reserved for tourism activities become the dry season grazing refuge there by practicing resource partitioning.
Pastoral groups that manage significant proportions of national livestock herds are particularly vulnerable to climate change. Existing land tenure arrangements and ecosystem services will come under increased strain exacerbating relationships between communities and fuelling conflict	Policies to enable herd mobility while securing rights to critical resources (dry season pastures and water). Robust conflict management institutions, effective drought mitigation systems including early warning, insurance and safety nets to protect livelihood assts. Strengthening pastoral groups to engage with policy issues directly affecting their lives.
Non-climate stressors already affecting agrarian populations in the drylands regions will have strong interactions with climate change effects	Scale up pilot community based adaptation projects with poor and vulnerable communities in urban and rural areas in the drylands, to ensure the documentation and rapid replication of these activities at the community level.
Soil formation processes and water distribution resources management already at unsustainable levels	Focus on water resources and river basin management at regional national and local level to reduce flooding risks and capture rainfall for agriculture and ecosystem use through micro and large scale investments

The DFBM intervention will provide an avenue for information and awareness creation on climate mitigation through the biodiversity and forest landscape sites as well as application of mitigation technologies such as production of clean development mechanisms.

Socio-economic constraints

Most of the dry land population is termed as economically poor. This coupled by socio turmoil, disorder and conflicts affects several parts of the region with negative socio and economic consequences. This results to over reliance to the drylands forest to supply to the large array of the populations socio-economic needs which leads to depletion of resources. The DFBM intervention will work towards sustaining management of dry land forests by developing sustainable livelihoods and markets for dry land products such as gums, resins and oils and could be an important source of income for poor people in this area.

CURRENT DRYLAND STATUS IN THE IGAD MEMBER STATES

The IGAD countries of Ethiopia, Eritrea, Djibouti, Kenya Uganda Sudan and Somalia has an overall area of 5,200,000 Square Km and a population of 160 ,million people in a rich diversity of cultures, geographical features and biodiversity resources. Its northern limits include semi arid and arid lands going into the Sahara desert. This complexity has created a great diversity of land use by rural communities mostly impacting negatively on conservation of forest and biodiversity resources.

Four fifths of the sub-region is dry lowlands comprising of arid (100-400mm) of rainfall p.a. semi arid areas (9400-600MM), dry sub-humid (100-500MM). 12 million people live in these dryland as nomadic pastoralists, making the sub-region the home of the greatest number of pastoral communities estimated to be over 2.4 million households. These communities depend on the dry land resources for their survival and livelihoods mostly the grazing pastures including the dry land forests which act as the dry season grazing areas, the wildlife and other natural resources which have shaped the cultural evolution of the pastoral communities. As such the conservation of dry land resources is critical to the survival of dry land households. However these drylands lack behind in terms of development owing to the absence of enabling policies from the colonial era to the current post colonial regimes and is partly responsible for the rampant poverty in the drylands

The complexity of managing and conserving the dry land resources is complicated by their transboundary nature that involves cross border nomadic movement, wildlife migrations across international boundaries in a scale that requires concerted effort in planning and management by the trans-boundary governments.

IGAD with its Sub-regional mandate of all the IGAD member state is therefore in the best position to coordinate the intervention in the drylands as it has the necessary mechanisms and legitimacy to engage the member states in all fronts. The DF &BM program is an attempt to intervene to conservation the drylands forests and biodiversity in the IGAD sub region through this approach. The program will be informed by the biodiversity and forest threat analyzed above and the critical review of existing policies and efforts to sustain the drylands analyzed below.

CRITICAL REVIEW OF EXISTING DRYLAND POLICIES

Policy framework for management of Natural and biodiversity resources in the region

African countries have over the years developed a collective will to address environmental and related issues against the backdrop of social economic challenges being experienced especially in Su-Saharan Africa. Some of the key policy milestone towards improved environmental governance in Africa includes the following:

- In 1968, African governments signed the Algiers convention on conservation of nature.

- In 1972, African governments participated in the United Nations Conference on Human Environment that resulted in deliberate efforts to use and manage natural resources sustainably.
- In 1980 under the auspices of OAU, an extra ordinary summit of African heads of state and governments adopted the "Lagos Plan of Action", an African blue print for economic development which helped to highlight the challenges facing the region including environmental ones.
- In 1985, African countries established the African Ministerial Conference on Environment (AMCEN), which has been providing regional- wide leadership, awareness raising and consensus building on regional and global environmental issues.
- In 2001, African, heads of states agreed to transform OAU into the African Union, through which the new African recovery initiative "*New Partnership for African Development* (NEPAD) was established with a primary objective of returning the continent to the path of sustainable development.
- Improvement in sub-regional and regional coordination through the establishment of IGAD, East African Community, SADC, ECOWAS amongst other RECs and to foster development in the various economic blocks owing to their unique circumstances in terms of environment, poverty, conflicts and past histories.

In addition to the regional and sub - regional initiatives there have also been country level efforts with respect to the environment which includes the following:

- Gazettement of National Parks and Game Reserve
- Establishment of national conservation policies and policy review to accommodate the emerging paradigms , of inclusion, equity and sustainability
- Developing conservation strategies and management plans for protected are systems.
- Establishment of national institution and ministries to mange dry lands and drlands biodiversity
- Initiating Community based wildlife conservation initiatives to secure wildlife in dispersal areas and to develop conservation responsibility to grassroots communities

Table 6. below shows the nationally and internationally protected areas in the IGAD Region.

Nationally and internationally protected areas in the IGAD Region

Country	Number of protected areas	Terrestrial area(000)ha	% of land area	Number of Biosphere Reserves	Area (000 ha)	Number of World heritage sites	Area (000 ha)	Number Of Ramsar Sites	Area (000 ha)	Marine protected Areas
Djibouti	-	-	-	-	-	-	-	-	-	-
Eritrea	3	501	4.3	0	0	0	0	0	0	-
Ethiopia	21	5518	5.0	0	0	1	22	0	0	-

Kenya	50	3507	6.0	5	891	2	300	4	90	14
Sudan	11	8642	3.4	2	1901	0	0	0	0	2
Somalia	2	180	0.3	0	0	0	0	0	0	2
Uganda	37	1913	7.9	1	220	2	132	1	15	
Total	124	20261	26.9	8	1103 0	5	454	5	105	18

Data for Djibouti not available some biosphere reserves are also world heritage sites or Ramsar sites* *Source: UNDP & others 2000*

Table 6a. indicates that approximately 30 % of the IGAD sub-region has been set aside for conservation of biodiversity resources in form of protected National Parks and reserves while considerable areas have also been protected as biosphere reserves and Ramsar site. But even with this impressive conservation measure 531 Species of biodiversity is threatened while a considerable number are threatened. This can only mean that the protected areas management do not have adequate resources and capacity to protect and manage the resources and the conservation status assigned to a protected area does not translate into tangible conservation gain policy response on this challenge is to devolve responsibility to communities around those protected areas to come on board into a co-management arrangement with the formal institutions to improve the conservation out per ha. These also call for benefit sharing mechanism between the community and the institutions especially on proceeds from tourism, filming, and development of local social infrastructure.

Table 6b.

Country	Number of protected areas	Terrestrial protected area (000)ha	% of land area	Total No of threatened species	% threat
Djibouti	-	-	-	11	2.3%
Eritrea	3	501	4.3	28	5.5%
Ethiopia	21	5518	5.0	77	14.5%
Kenya	50	3507	6.0	211	39.8%
Sudan	11	8642	3.4	50	9.5%
Somalia	2	180	0.3	52	9.8%
Uganda	37	1913	7.9	102	19.3%
Total	124	20261	26.9	531	100%

Observation from Table 6b indicates that the countries with the greatest number of protected area and corresponding lager areas of protection (e.g. *Kenya with 50 protected areas and a protected area system of 3507 thousand ha which is 6% of it land cover has a total 211threatened species of plants and animals, same for Uganda and Ethiopia*) are also the countries with number of threatened species. This can mean that the establishment/gazettement of protected area system may not necessarily reduce the threat of biodiversity in the IGAD region and there is need to think of new approaches to conservation. The horn of Africa is a very vast region with almost 80% of the land being dry lands where most rare and valuable plant species are found. To include as much land as possible in the conservation bracket, the landscape conservation approche may offer some respite towards the replacement of protected areas systems which does seem to be effective in biodiversity conservation and protection The idea of landscape conservation is relatively new on the horn of Africa sub region but may address some of the current conservation challenge if the right policies are enacted

to support it. DFBM may experiment this approach in the region by establishing conservation landscapes in formerly protected areas such as reserves and moribund National Parks, where all stakeholders are involved in conservation effort, benefits are shared and conflicts are resolved amicably. This could be done for some years and then compare the results.

Table 7. Sector issues and policy response

Sector Issues	Policy Response
Environment and development In the past, development initiatives did not take sufficient due consideration to environment impacts caused by development. In this respect the greatest threats facing the drlands forest and biodiversity in the horn of Africa are perpetuate by development activities such as , charcoal burning, overgrazing, agricultural encroachment and settlements	Development of national strategies for sustainable development (NSSDs) and in countries, national Conservation Strategies (NCS) Domestication of Agenda 21 into national agendas Establishment of fully fledged ministries of environment and environmental protection Authorities such as NEMA in Kenya.
Poverty The increase in the incidence of poverty amongst the pastoral communities has resulted in the over utilization and overexploitation of natural resources (poaching, fuel wood, sand harvesting), in the drylands. This breed more poverty and environmental degradation	Preparation of poverty reduction strategies papers and poverty eradication action plans Formulation of sustainable livelihood strategies Promotion of South-South and intra African trade
Climate Change Climate change accelerates the loss of vegetation cover, biodiversity habitats and conflicts over scarce resources such as water in the drylands	Majority of the African states are parties to the United Nations framework Convention on Climate Change (UNFCC) and the Convention to Combat Desertification (UNCCD). Support for environmental education progammes
Land Degradation The land use in the drylands are not adequately regulated thereby resulting to widespread land uses	Formulation of land use policies Land reform programs

that cases soil erosion, forest fires, proliferation of invasive species, and escalation of human wildlife conflicts.	
Habitat loss Dry land ecosystems and interconnected to wetlands, upper water catchment areas and the traditional lifestyles of local communities. The sustainability of drylands will go hand in hand with the conservation of the upper water catchments, the lowland wetlands and the indigenous knowledge of local communities	Ratification of Conventions related to biodiversity particularly CBD, RAMSAR and CITES. Promoting Community Based Natural Resource Management Programs(CINRAM) Development of National Environmental Action Plans
Deforestation The most important natural resource in the drylands is the vegetation cover that comprises of the woodlands, the bush lands and the grasslands. Their combination support large assemblage of livestock wildlife and birdlife. Deforestation therefore devalues the drylands and interrupts evolutionary ecological functionality such as migrations and breeding of biodiversity	Improving forest harvesting sustainability through removal of subsidies for commercial logging and privatization of state owned forests Ensuring greater stakeholder participation in forest management through partnerships mainly between state and local communities. Use of technologies such as remote sensing and Geographical Information Systems to provide more accurate monitoring information

Source: Africa Environmental Outlook 2002

In spite of these achievements, it is realized that environmental challenges facing Africa are immense and are becoming increasingly complex and meeting these challenges will require regional and sub-regional cooperation and efforts by individual states which must be combined with strong political will, commitment and good governance. The need to develop policies governing the management and further ensuring that the policies of neighboring countries are in harmony with another is probably the most imports policy response required for the sustainability of drylands in the horn of Africa. Trans-boundary resources The DF&BM proposed project is classic example of a response to this realization where the environmental interventions are led for a sub-regional scale but the real actions are implemented and driven at the individual state level.

Another notable challenge in the implementation of environmental policies is associated with the weaknesses, failures and gaps in the management of Environmental thematic areas. The matrix below identifies those failures weaknesses and gaps that affect the positive change in the management of natural resources in the drylands and the proposed actions and activities required to address them. This is the basis of the DF&BM proposal.

Table 8.

Thematic area	Failures Weaknesses and barriers for implementation	Proposed actions
Land resources	Absence of planning and management systems Little community involvement in information gathering	Promote campaigns of environmental information, education and communication Encourage the production of land use plans and formulation of enabling land use policies Improve land tenure and land ownership systems that also address gender considerations
Forest resources	Inadequate information base on status of forest resources in the drylands and rates of deforestation Poor energy policies that allow over dependence on forest resources for provision of energy at the household level	Promote collaborative forest management between forest authorities and surrounding communities in the drylands. Promote access to affordable energy especially in rural areas. Promote research on development of cleaner energy technologies and energy use efficiency Promote greater use on non-wood forest products
Biodiversity resources	Biodiversity resources poorly inventoried Poorly coordinated dryland rehabilitation and restoration programs Exclusion of indigenous knowledge in dryland interventions. Failure to link conservation and food security	Promote landscape (transboundary) approaches to biodiversity conservation Rehabilitate degraded areas through habitat restoration Document and disseminate indigenous knowledge and practices applicable to biodiversity conservation in the drylands. Promote the conservation of agricultural biodiversity

Although carbon dioxide emissions from industrial operations is negligible in Eastern Africa- less than 2% of Africa's total emission in 1996(African development bank 2001), it is anticipated that climate change impacts will cause a 10% reduction in rainfall received in the Horn of Africa by 2050, with proportionate increase in temperatures and evaporation (IPCC2001). This will result into subsequent shifts of vegetation zones

particularly in the areas of agriculture, tourism, energy, industry and commerce (Ottichilo *et al* 1991). These changes could have enormously devastating effects on drylands which could easily translate into true deserts with monumental loss of endemic plants and animal species, loss of habitat for biodiversity and subsequent loss of livelihoods for millions of people who depend on drylands in the horn of Africa. The propose DF&BM interventions is an initial effort to slow down the spiral consequences of desertification which will most like be accelerated by climate change. If the policies governing the drylands before the onset of climate change did not achieve any significant results, the there is a great need for an innovative and radical policy shift by the horn governments to address the likely magnitude and scale of the impending degradation and the secondary spiral effects in the rangelands. At the community level information and awareness will assist the communities and individual to change their daily actions to minimize their compound impacts on the drylands in their midst.

Large parts of IGAD are characterized by the aridity and the semi aridity that is synonymous with the horn of Africa, and rainfall below 500mm being widespread.

Rainfall amounts and distribution are thus highly unpredictable making the region particularly vulnerable to the impacts of climate change and especially the effects on food production and the livelihood of pastoral communities who are predominant in the drylands.

Eastern Africa and the Horn of Africa by extension has experienced at least one major drought in each decade over the last 30years.serious droughts were recorded in 1973-74,1984-85, 1987. 1992-1994, and in 1999-2000 and the frequency has continued in recent years. This is evidence of increasing climatic instability in the sub region and intensity and frequency of drought (FAOSTAT 2000).For example records of dry and wet years for Uganda between 1943 and 1999 shows a sharp increase in the frequency of very dry years over the past 30 years (Meteorology department 2000), while rainfall records show that drought severity and rainfall unreliability are worsening by the year (Africa Environmental Outlook 2002).

Persistent deficits in rainfall in the sub region have had serious impacts, including total crop failure, which has led to increased food prices and dependency on food relief in Ethiopia, Kenya and Uganda. In Ethiopia the 1984 drought caused the deaths of about 1 million people, 1.5 million livestock and 8.7 million people were affected in all (DMC 2000). In 1987, more than 5.2 million in Ethiopia, 1 million in Eritrea and 200,000 in Somalia were severely affected by draughts. Similarly, severe water shortages increased water use conflicts and the drying of some rivers and small dam reservoirs thereby contributing to livestock deaths and increased conflicts over grazing lands.

Although these impacts are more widespread, they affect the drylands more severely and contribute significantly to the loss of dry land forests and biodiversity through over harvesting, charcoal burning, wildlife poaching for food and other unsustainable resource utilization tendencies as a mean of drought resilience and mitigation mechanisms.

The table below shows how the population affects forests and biodiversity through agricultural activities. Noting that rural populations in all the sub region depends on agriculture and pastrolism for their livelihoods, it's imperative that these land uses are responsible for biodiversity loss in the region to a larger extent. The data therefore demonstrates strongly that population growth has a direct negative impact to loss of both lowland forests and biodiversity in the region.

Table 9. :Rural Population and land use

	Rural Population			Land area	Land use % of land area							
	% of total	% of total	% average annual growth	Thousand sq.km	Forest Area		Permanent Cropland		Arable land		Arable land hectares per 100 people	
Country	1990	2005	1990-2005	2005	1990	2005	1990	2005	1990	2005	1990-92	2003-05
Djibouti	-	-	-	-	-	-	-	-	-	-	-	-
Eritrea	84.2	80.6	2.3	101.1	-	15.4	-	-	-	5.6	15.1	13.1
Ethiopia	87.4	84.0	2.0	1000.0	13.7	13.0	0.6	0.7	9.6	11.1	15.5	16.1
Kenya	81.8	79.3	2.3	569.1	6.5	6.2	0.9	1.0	7.4	8.2	14.6	14.2
Somalia	70.3	64.8	1.0	627.3	13.2	11.4	0.0	0.0	1.6	1.7	14.5	13.6
Sudan	73.4	59.2	0.8	2376.0	32.1	28.4	0.1	0.2	5.5	7.2	48.4	48.8
Uganda	88.9	87.4	3.1	197.1	25.0	18.4	9.4	10.9	25.4	26.4	20.3	19.4

Source: world development indicators (2007)

For example the population increase in Ethiopia between the years 1990 and 2005 had a corresponding forest loss of 0.7 % of the total forest cover for the same period, an increase of 1% of permanent crop land, a one percent increase of arable land and at the same time reducing the arable land available to per 100 people. This trend increases the deficit for arable land and the drlands and forest areas are the ones that are encroached to accommodate that deficit. The same observation was made for Kenya and Uganda (1990-2005) with Uganda registering the highest Percent of annual population growth rate of (3.1%) , that corresponds with the highest percent loss of forest cover (3.3%) in the same period and registering one of the highest deficit of arable land(-0.9%) for the same period second to Ethiopia. Although Ethiopia had a lower annual population growth rate, it registered the highest increase of arable land (0.7%) which was not corresponding to the forest cover lost (1.5) for the same period. This could only mean that the arable land increase was made in the drylands. Sudan lost more forest cover (3.7%) than was converted to arable land (1.6%). This could mean that the forest that was not concerted to arable land (2.1%) was lost to degradation or to charcoal burning, wildfires or and overgrazing.

In response to these growing environment trends, the Eastern African Governments have signed and ratified the UNCCD. Djibouti, Ethiopia, and Uganda have also produced National Action Plans(NAPs) and the Intergovernmental Authority on Development (IGAD) has produced a sub-regional Action Plan for the countries in the Horn of Africa (UNCCD 2001) Monitoring and early warning systems have been put in place through IGAD, to improve the ability to cope with climate variability, but most of the national institutions in the sub-region are under –resourced and the early warning program may only succeed with donor support. The DF&BM program will supplement and complement these efforts under the umbrella of IGAD which has the mandate to coordinate drought and development in the horn of Africa Sub-region from its member states.

By targeting the conservation and sustainable utilization of dry land forests and biodiversity in the drlands, the program is not only addressing the primary causes of loss of livelihoods in the sub-region but also Stemming the secondary impacts created by loss of livelihoods that include, deforestation, conflicts, internal displacement, insecurity, food insecurity, loss of human life and loss of wealth amongst the vulnerable communities who live and depend on the drylands.

Strong and clearly articulated policies are essential for improving forestry administration and practices in the drylands of sub-Saharan Africa. Although some countries in the region have draw up specific policies that present their strategic vision and objectives for developing the forest sector, those policies must evolve to accommodate and embrace other sectoral, temporal and spatial linkages if they are to remain effective. These policies should also be anchored in strong institutions with elaborate plans for research, capacity building and inter institutional collaboration in order to keep abreast with the scientific and technological approaches and innovations. These will call for regular updating of legal regulatory instruments to incorporate new issues and paradigms of forest and drylands management.
To address the high incidence of poverty that results to the degradation of forests and biodiversity in the drylands, there is need to explore new policy instruments such as Payment for Ecosystem Services (PES) and compensation of conservation through carbon and biodiversity credits at the global level. These instruments would reduce the need for land use change if the status quo would derive sufficient benefits to support drlands livelihood. In the long run, this approach would increase the vegetation cover of dry land forests, improve the habitats for biodiversity to thrive, reduce desertification, sustain ecosystem functionality and sustain dry land livelihoods holistically.

Table 10.Regional Poverty Estimates

People living on less than a dollar($) a day(millions)									
	1981	1984	1987	1990	1993	1996	1999	2002	2004
East Asia &Pacific	796	564	429	476	420	279	277	227	169
Latin American &Caribbean	39	51	50	45	39	43	49	48	47
Sub Saharan Africa	168	200	223	240	252	286	296	296	298
South Asia	473	457	469	479	440	459	475	485	462
TOTAL	852	854	866	871	821	860	869	884	853

Source: World development indicators (2007)

From a regional perspective, the wealth of sub-Saharan Africa id mostly agrarian supplemented by harvesting of natural resources as the region is not industrialized and did not oil until recently when oil was discovered I Sudan and Uganda. This means that to a larger extent the per capital growth of rural populations will continue to be land use based. With high population growth the pressures on land will increases the increased number of people compete to share the dwindling resources from the land. This will exert severe pressure on natural resources resulting in loss of biodiversity and forest cover. Subsequently this will make the rural populations and especially pastoralist more vulnerable and susceptible to climate change, food insecurity thereby

exacerbating abject poverty in the region which could open new avenue of conflict in the region. Table 5 above compares the poverty trends from similar regions in all continents and confirms this fear.
The scenario in other regions of the world is that their populations are stabilizing to increase the per capita wealth as illustrated by East Asia and Pacific region, Latin America and Caribbean and South Asia whose population that lives on less than a dollar a day stated stabilizing and reducing between year 1999 and 2000. But in sub-Saharan Africa instead of stabilizing more people were recruited into this poverty bracket which will have a devastating impact on natural resources as they try to eke a living from the land.
To counter this trend the nation States of sub-Saharan Africa should start thinking as economic blocks not only in terms of cross border trade but also in terms of conservation and land management by regarding their natural resources as the biggest wealth of the region. DF&BM program under IGAD has an opportunity to explore and effect the management of drylands as a regional business on pilot phase for some of the selected areas. the profit and loss accounts and the Annual balance sheet of this regional nature business will generate useful information and experience on how these drylands will be sustainably be managed into the next century

Other proposed actions for improving and harmonizing development of dryland forest and biodiversity resources in the dry lands will be achieved by the IGAD member state;

- adopting the best practices in each sector that affects the drylands and complementing and integrating the efforts of the neighboring state on the same sector through institutional collaboration for example in the pastrolism sector, transboundary policies should aim to enhance the dual roles of pastrolism as a conservation and a livelihood support system through the following strategies:
- Working with pastoral customary institutions such as grazing committees and village elders
- Respecting the use of pastrolism knowledge systems about the use of diverse flora of dryland ecosystems and enhancing their diverse usage as fodder, food, fuel, or as marketable commodities.
- Assisting both the market integration and the subsistence economy of pastrolism through incentives and regulations that encourage the sustainable use of natural resources.
- Developing incentives to promote the social and economic security of dryland pastoralists by ensuring greater benefit flows from wildlife conservation and supporting community wildlife and forest management to diversify from the livestock economy thereby increasing resilience.
- Improve land rights and land tenure security.
- Payment of Ecosystem services (PES) to communities for maintaining the heath of their ecosystems for example for maintaining a certain percent of ground cover by not cutting trees or overgrazing. Dryland forest have a value greater than charcoal and fuelwod as they regulate ecosystem functionality by absorbing upstream effects and moderating downstream effects, not to mention the non timber forest products such as honey, medicinal herbs and genetic banking, services that are undervalued and which would enhance livelihoods and maintain the integrity of drylands. IGAD region governments should develop common policies on PES and establish appropriate institutions and mechanisms for implementation.
- Linking dryland production to markets .From livestock, biofuels, drylands non timber products, cultural tourism, charcoal, meat, , hides and skins, to both nation and transboundary markets complete with build checks and grassroots regulatory controls for sustainability and to minimize losses and shortfall created by frequent droughts.
- Providing Tax and infrastructure in policy incentives for investors in the drylands to attract capital especially for investments that need large tracks of land and higher temperatures in less densely populated areas.

Relevance of the DFBM interventions

Dryland forests of Sub-Saharan Africa have the potential to contribute to poverty reduction and food security, as long as they are well valued and sustainably managed. The inhabitants of dryland forests are mostly farmers, herders and forest product gatherers whose livelihoods are largely dependent and those forests and woodland resources. To sustain these forests and especially in the growing incidences of population increase and climate change, there is need for dedicated forest management regime that respond the logic and both the immediate and long-term needs of dryland populations. A critical aspect of this management is to ensure that communities derive the consequent benefits from the drylands so that they became the agents of controlling degradation, deforestation and mitigation of the impact of climate change. The DFBM program endeavors is relevant to this approach as it seeks to strengthen the policies governing the drylands in general and drlands forests in particular; create awareness and disseminate information on the best practices and value addition of dryland products at the local level ; establish biodiversity and forest landscape sites where best practices will be demonstrated and build capacity at the community and national levels to increase people's ability to cope with the challenges on livelihoods in the drylands.

There is need for development of policy instruments for the management of shared natural resources and for the implementation of projects that target transboundary ecosystems. This will involve development of regional agreements as well as strengthening the existing ones, and strengthening of policies that reduce land and resource tenure at the national and community levels. Such instruments would promote Regional Corporation and coordination of activities across political and sectoral boundaries in the management of spatially and temporally variable environments such as drylands. A case in point is the Integrated Sustainable Management of Transboundary Environmental resources in South Western Djibouti and Northeastern Ethiopia project supported by GEF. In order to conserve the environmental resources in the Afar depression between Ethiopia and Djibouti, such as Lake Abe and associated wetlands and plains, it is of critical importance that a regional integrated Ecosystem management program is developed for the lower Awash River basin and the terminal lake. Such a program would be very difficult to implement and sustain in the absence of transboundary policy instruments. The IGAD secretariat could use the DFBM transboundary experiences and lessons from other pert of Africa to develop such instrument for ease of integrating transboundary interventions in the sub-region

Feasibility

The most important contributing factor towards degradation of fragile lands in Sub-Saharan Africa is a nexus of poverty, rapid population growth and inadequate progress in increasing crop yields. Poor people in their quest for food and other livelihood needs are increasingly expanding cultivation into forests, steep hillsides and other fragile areas, overgrazing the pasture lands and cutting down trees for fuel wood and charcoal. To address this nexus there is need to focus on the many opportunities for investment in the drylands and to address the formidable challenges such as vulnerability to droughts and desertification. The greatest opportunity lies in the dry land forests and biodiversity out of which the livelihoods can be improved and environmental challenges such as land degradation addressed at the same time by choosing appropriate household and communal interventions. Towards this end there is need to integrate not only the needs but also the productive potential of drlands peoples into economic and trade strategies that can improve their wealth without compromising the integrity of the drylands

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ANNEX I

UGANDA

Uganda has an area of 236,587Km2 and a population of 17,008,000(1989 data). Its predominant vegetation is secondary grasslands and cultivated landscapes, but the natural vegetation of the South and west is lowland forest, with Sudanian woodlands in the North and *acacia/comiphora* thickest in the drier north east.

Although Uganda is a relatively small country, it has rich diversity of species and habitats. Until the early 1970s, Uganda had a well organized conservation effort but this was disrupted by 15 years of political instability.

Critical Conservation sites

i. Queen Elizabeth national Park (formerly Ruwenzori's) also a biosphere reserve which consists of savannah woodlands/ swamps, lake shore and Maramagambo forest, and the adjoining reserves of Kigezi, Kyambura and Kibale forests.
ii. Murchison falls national park and the Rumbongo forest patches and the adjoining Bugungu and Karuma Game Reserve.
iii. Kidepo Valley National Park characterised of bushed savannah which is a trans-bonder park with southern Sudan
iv. Lake Mburo National Park
v. Savannah reserves of Toro Game Reserve, Katonga game reserve in the South,Anjai's game reserve and Mt.Kei Otze and Dufile Game Reserve in the semi arid north eastern province of Karamonja
vi. Forest reserves of Semliki, Ruwenzori, Mgahinga, and Kibale forest, Bundongo, Bugoma, Itwara, Kalinzu, Kasyoha- Kitomi , maramgambo-Kalinzu, Mabira and Mt Elgon.
vii. Wetland, lake Kyoga, Lake George(Ramsar site) ,lake Edward, Lakes Bistina Kwania and Victoria

Threats to biodiversity

Insecurity resulting to poaching and encroachment

Deforestation and forest fragmentation as a result of agriculture encroachment

Wetlands clearing and pollution

Enabling Policies and policy Gaps for DF&BM in Uganda

The policy and legislative framework for environmental protection and natural resources management in Uganda is well developed. These include the Constitution of the Republic of Uganda,(1995), the National Environment Policy (1994), Environment Statute (1995), THE Wildlife Policy(1995&19199), the Wildlife Statute (1996), the national policy for the conservation of Wetland resources (1995), the forest sector Policy(1999) and the Land Act (19980) . Some of the policies and implemented by capable institutions such as National Environmental Management Authority (NEMA), Uganda Wildlife Authority (UWA), and

National Forest Authority(NFA) supported by a range of civil society organizations and NGOS. Although there is no specific policy on drylands, it is included in some of those policies.
UWA and NFA have effectively increased the size of the protected areas network and improved the management of Uganda's parks, wildlife and forest reserves, but these gains could be undermined by discontent among surrounding communities unless more attention is paid to community outreach, environmental education and through a range of measures to sharply increase the range of economic benefits to local communities generated from conservation and protected areas.
The existing policy that cuts across the dryland forests and biodiversity includes the following:

- National Forest policy (20010)
- National Environmental Management Policy
- National Wetlands Management Strategy
- National decentralization Policy.

Although these policies are supportive and embracing for all forest types including dry land forests and biodiversity conservation, they have inherent weaknesses in their implementation due to low capacity of the implementing institutions, limited awareness on those very policies and insufficient funding for their implementation. Irrespective of those limitations, Uganda has demonstrated its commitment for forest and biodiversity conservation and management by ratifying the Convention on Biological Diversity (CBD), the Kyoto protocol and the Ramsar Convention on the management of wetlands.

The DF&BM project fits well in the national Development plan for Uganda (2010-2015) where forestry has been earmarked as one of the national primary growth drivers for the transformation and growth of the national economy, thereby becoming one of the priority sectors for funding. It also contributes to the Prosperity for All policy (PAF) that aims at improving the well being of all Ugandans and especially the poor. Some of the other similar initiatives to this project includes, the Community tree planting Program, Farm Income Enhancement and Forest Conservation Project (FIEFOC), Sawlog production Scheme (SPGS),TCP-FAO support to rehabilitation and management of forests in northern Uganda and, Tree planting by Tree talk Foundation in northern and North eastern Uganda

The DF&BM project will be coordinated by the Ministry of water and Environment which is based in Kampala Uganda but with field offices in the districts

Proposed Interventions
Based on the trends of the escalating degradation of forests including dryland forests in Uganda, the implementation of the DF&BM will focus on the following

Policy improvement for DFBM through

- Review the boundaries of game and forest reserves
- Enact a policy on sustainable utilization of natural resources
- Harmonization of the various policies and legislation impacting on the management of dryland forest and biodiversity especially in Northern Uganda
- Elaboration of the existing forest law and guidelines, their translation into key local languages and dissemination.

Information generation and awareness creation. This will be done through :

- Protection of savannah reserves from overgrazing and poaching and linkages to integrated participatory development schemes

- conducting baseline surveys including potential investments and livelihood opportunities in selected dryland forest and biodiversity areas;
- Conducting cost benefit analysis of land use in drylands.

Conservation of dry land forests and biodiversity through

- demonstration of best practices at the ecosystem level, targeting natural forest reserves, community forests and private forests
- Promotion of tree planting in the dry land ecosystems to alleviate deforestation and degradation pressures in existing natural forests

Capacity building

- Building a portfolio for Reduction of Emissions from deforestation and degradation (REDD)
- Capacity building
- Support forest management institutions
- Building Capacity at National and community levels particularly focusing on the implementing institutions and stakeholders in DF&BM. This will involve the establishment of a coordination unit.

Stakeholders of DF&BM in Uganda

Institutions	Role in DF&BM
Government Agencies and institutions	
Ministry of Water and Environment (MWE)	Sector policy influence on protection of biodiversity areas as they also form key catchment area
National Forest Authority (NFA)	Mandated to implement the Forest policy in Uganda
Ministry of Finance planning and Economic Development (MAPPED)	T0 sanction the funding from EU through IGAD into the Uganda national development programmes
District Forest Services (DFS) of the following local governments; Moyo, Koboko, Yumbe, Arua and Adjumani	Community mobilization and field operations of the project
Wetlands Management Department (WMD)	Synergy in the implantation strategies
Uganda Wildlife Authority	Implantation as it has the mandate of conserving and managing the protected area system of Uganda
National Environmental management Authority (NEMA)	Synergy and policy guidelines as it has the mandate for censuring compliance on the environmental laws
Forest Sector Support Department (FSSD)	Implementation and bringing on board best practices and sustainability approaches

Ministry of Agriculture, Animal Industries and Fisheries	Synergy and sectoral support
Partners	
Civil Society Organizations	Capacity building Community mobilization and horizontal learning-
Service providers	Consultancies , transportation and other skilled labor services
Contractors and suppliers	Goods and supplies
WCS	
Civil Society Organizations	Information Dissemination
Service providers	
Implementing Institutions	
Local communities	Own and host the projects
DFS	Implementation
UWA	implementation
ICRAF	Technical inputs on forestry and forest development
IUCN	Technical input on Biodiversity protection and research

Sites Selection Criteria

Based on the project objective of improving community livelihoods through sustainable conservation and utilization of dry land forests and biodiversity the following criteria were used to select the implementation site:

- Area of highly threatened dry land forest ecosystems
- Areas of high population growth in drlands environments
- Ecosystems that have sizeable natural forests and dry land woodlands under customary land tenure
- Dry land ecosystems where similar projects or programs are absent
- Transboundary ecosystems with potential for project implementation

Given the above criterion, the Zoka-Otze-Mt. Kei community landscape in Northern Uganda was selected. The international boundary between Southern Sudan and Uganda harbor exceptional biodiversity on a global scale. These biodiversity regions are key areas for the creation of peace parks or landscapes. The Otzi Nimule –Mt. Kei-Aloma landscape is among those areas identified as possible conservation landscapes for peace, and a formal memorandum of understanding for transboundary cooperation between the Governments of Southern

Sudan and Uganda has been signed. To implement this program, a WCS program in cooperation with the two governments and USAID has been under implementation since 2008 with the following objectives:

- Develop and adopt participatory strategies to reduce wildlife threats to wildlife in Southern Sudan- Northern Uganda transboundary landscape
- Develop and implement sustainable and adaptive mechanisms to strategically address threats across the landscape
- Learn and teach best practices in the landscapes
- Guide and design wildlife focused planning and adaptive management.

In consultation with WCS, IGAD could piggy back on this project to use the already established groups by WCS to implement DFBM on the same transboundary scale and to benefit from the mobilization made by the earlier project

Partnership arrangements for project implementation framework, ownership and sustainability
The project host communities will be organized into formal umbrella groups that will implement the various project activities together with the relevant implementing agencies
Partnerships will be formalised through Memoranda of Understanding (MoUs), contractual arrangements, agreements, licences and other appropriate mutual and legally acceptable instruments.
Project ownership and sustainability will be achieved through the active involvement of the various stakeholders at all project implementation levels from mobilization, capacity building, planning, budgeting and various levels of decision making during and after the funding period.

Considering the multi-institutional and stakeholder nature of the mandate required to deliver the DF&BM interventions, the lead institution and budget holder at the national level should be the ministry of water and Environment which is responsible for all forests in Uganda. The ministry will establish a small project coordination unit under the director of environmental affairs that will oversee and coordinate project implementation. Under this arrangement a technical officer will also be appointed by the director to support day to day operations of the project.
Deliberate efforts will also be made to ensure that all gender is made to actively and equitably participate in the project planning and implementation. Special attention will also be paid to participation of women, youth, elderly, people living with HIV/AIDS (PLWA), and the physically challenged.

ETHIOPIA
Ethiopia occupies an area of 1,023,050 Km square with a population of 49,763,000(1989 data) with biogeography affinities of Afro-montane in the centre of the country, afro alpine in the mountain areas and Somali- Maasai, Sudanian and Sahel in the transition zones referred to as drylands.

Critical Conservation sites

a. Ethiopia has many critical sites for biodiversity conservation but only two of these are legally gazetted i.e. Simien Mountains National Park and the Awash National Park.

b. A number of important reserves in the southern drylands all of which lack legal status yet very important for large mammal. These includes; Omo and Mago National Parks, and Tam and Chew and Bahar Conservation areas

c. The un-gazetted Bale Mountains National Park covers the largest Afro- alpine habitat in Africa is rich in endemic species and its conservation would preserve the water catchment of three rivers.

d. Yavello wildlife area in Sidama province where five endemic bird species, and endemic Swayne's antelope are found

e. All Ethiopian Rift valley lakes

f. Awash River valley including populations of Somali wild ass. Awash protected include. Awash National Park, Awash West Conservation Area, Gewane conservation area Yangundi Rassa National Park

g. Gabella national Park in the west remains un-gazetted and threatened by the adjacent agricultural development

Threats to Biodiversity and conservation in Ethiopia

- Poor legal protection of the un-gazetted parks
- Important biodiversity areas being left outside the protected areas system as in the Ogaden region
- Poaching particularly of elephants which was enhanced by the civil war for Eritrea
- Habitat clearance for agriculture is destroying large areas of forests in the mountain areas and dry land forest of the western region
- Overgrazing by livestock is leading to severe environmental degradation in many areas especially in the North and Ogaden areas
- Rinderpest outbreaks in Southern Ethiopia also threatening wild ungulates.

Enabling Policies and policy Gaps for DF&BM in Ethiopia

a) The constitution of the Federal Democratic republic of Ethiopia (Proclamation No.1/1995), contains provisions which recognize the importance of environmental protection and the need for its proper management. These provisions are a major spring board for subsequent legislations in environmental management as well as for mainstreaming environmental sustainability in the political social and economic development sectors of Ethiopia.

b) The Environmental policy of Ethiopia was approved in 1997 and emphasizes the need to arrest land degradation. The policy's sections on Soil Husbandry& sustainable Agriculture, forest woodlands & tree Resources, Genetic Species and &Ecosystem Biodiversity, water resource. Energy and Mineral Resources addresses the issue of combating desertification. The conservation strategy of Ethiopia also provides adequate strategic framework, detailing principles, guidelines and strategies for effective management of the environment and its resources. Some of the policy strategies with strong support for dry land interventions include:

c) The Agriculture and rural development policies and Strategy (RADPS) which was adopted by the Ethiopian government in 2002, and which emphasizes on resolving the problems of drought prone regions, improving the agricultural marketing systems and developing the rural energy sector amongst other strategic actions
d) Sustainable development and Poverty Reduction Strategy Programme (SDPRP) which gives special attention to highly degraded, drought prone and food insecure areas, strengthening regulatory and institutional capacity and strengthening the measures to preserve, develop and sustainably use biodiversity resources.
e) The food Security Strategy which was adopted in 2002 considers the importance of conservation,, rehabilitation and restoration of **natural** resources as entry points to improve the existing livelihood situation in rural households
f) The Environmental Organs Establishment Proclamation No. 295/2002 stipulates the mandatory need for the establishment of environmental organs by regions in the federal republic and mandates these organs to coordinate environmental activities, improve the dissemination of environmental information and to undertake studies and research, and, develop action plans in the area of combating desertification.
g) The institute of Biodiversity Conservation (IBC) established under proclamation No. 381/2004 with the mandate to undertake *ex situ* and *in situ* conservation of biodiversity is also strategic for the conservation of dry land forests and biodiversity.

Despite these legislations and strategies Ethiopian forests have decreased gradually over the years to the present cover of only 3.6% of the land. Although the new forest policy for Ethiopia targets to increase the forest cover to 9% in the short term, forest cover is still shrinking despite large scale interventions. In order to reach its forestry potential, Ethiopia needs not only to have an effective forestry service, but also to attract investment from individuals, communities and commercial actors. For this to be realized, there is need to establish appropriate institutions, appropriate policies, clear guidelines and build technical capacity for forest extension conservation and management .The DF&BM program will support this need by intervening in some forested landscaped and bringing out the best practices while at the same time building the local capacity of communities in those landscapes. This will be achieved through some of the following activities:

- Co-Managing of state forests and participatory forest management between governments and local communities especially through the support of evolving community institutions for forest management
- Private commercial forestry on drylands and policy support for forest property rights
- Energy consumption efficiency from fuel wood
- Preservation of biodiversity gene pools in forests
- Monitoring and evaluation of forest indicators
- Information sharing and networking between institutions
- Biological and economic research on forest products and market value chains
- Tree planting campaigns

Proposed Interventions

The proposed interventions under DF&BM in Ethiopia will include the following:

Policy improvement for DFBM through

- Legal gazettement of National Parks

- Gazettement of new forest reserves to protect forest habitat especially montane and dryland forests
- Establishment of a protected are in Ogaden region and the restoration of Harrar Wildlife Sanctuary
- Dryland and Biodiversity policy formulation

Information generation and awareness creation

- Baseline surveys for both lowland and Afro-montane National Parks
- Survey to update the status of threatened species

Conservation of dry land forests and biodiversity

- Rehabilitation of selected protected areas (Omo, Gabella and Lower Awash) National Parks and degraded biodiversity sites
- Develop a land use plan for Gabella National Park
- Soil and water conservation at the project site, water harvesting and small scale irrigation
- Forest fire management

Building Capacity at National and community level;

- Establishment of CBNRM programmes and institutions in conservation project sites
- Training of forest and national park field mangers
- Introduction and improvement of livelihood support system through, livestock feeds, homestead gardens
- Improvement of market infrastructure for dry land natural resources
- Building Sustainability practices of conservation and production initiatives

Institution	Role in DF&BM
Government Agencies and institutions	
Ministry of Agriculture (MOA)	Policy support
Natural Resources Management Directorate (NRMD)	Has the jurisdiction to mainstream the project in national development agenda
Institute of Biodiversity Conservation(IBC)	Ensure that the project falls within the wider national strategy of dry biodiversity
Forest research Centre (FRC)	Provide the information necessary for project preparation and implementation
Agriculture Research Institute	Will provide and share information on DFBM and disseminate the lessons and experiences
Amhara Regional Bureau of Agriculture and Natural Resource Process	Mainstreaming the project within the regional government
Ministry of Finance and Economic development (MoFED)	Facilitating the financial die process of the project
Worenda Agricultural development office	Community mobilization and on the ground logistics for project preparation an implementation

Partners	
Local community	To own and host the project
Civil society organizations	To mobilize communities and disseminate the best practices
IGAD	To coordinate the program
HoA	
Implementing Institutions	
MOA	Policy guidance and policy change
IBC	Reference to national plan commitments to MEAs on Biodiversity
IGAD	Overall implementation responsibility in the region
ICRAF	Technical and practical inputs on Forestry ,forest protection, expansion and research
IUCN	Technical and practical inputs on biodiversity protection research and listing in CITES, Red list etc

Recommended landscape sites for DFBM program in Ethiopia is the Omo-Boma Gabella landscape that is a transboundary site with Southern Sudan. The landscape encompasses the Omo and Mago protected areas and the Boma Gabella ecosystem which hosts the migration of the white eared Kobb from south Sudan to Ethiopia, representing one of the most fascinating and numerous wildlife migrations in the world. In terms of ecosystems and topography this region is one of the most diverse, encompassing moist forests, arid areas of south Omo, and the flood plains of Gabella (Ethiopia) and Jonglei/Upper Nile in Southern Sudan. The landscape harbors wildlife and vegetation species that are threatened by impacts of poverty, regional conflicts and mismanagement due to limitations of capacity, weak institutions and poor infrastructure. The area also covers the partially forested highlands of South West Ethiopia, the head waters of Baro-Akobo river system which is a major tributary of the White Nile and a source of water for millions of people and animals downstream. These highlands also have abundant forest and biodiversity resources.

Perhaps more so than any other region in Ethiopia, Gambella features great potential for sustainable development. With a land area of approximately 34,000 square kilometers and an elevation range from 395 to 2,300 m., the region has numerous perennial rivers; vast permanent and semi permanent wetlands; extensive woodlands, lowland and montane forests; fertile soils and numerous water bodies. With an average population density of 5 - 7 people per Kilometers Square, Gambella is the least densely populated region in Ethiopia.

An aerial wildlife survey was conducted in March 2010, and based on this survey it was estimated that more than 250,000 White-eared-kobb reside in Gambella during the dry season. This is more than all the livestock in the region combined. The White Eared Kobb assimilate poor quality food, which they convert to meat, and they grow faster than any other bovid species; making them a potentially exceptional valuable resource.

Baro river backbone (Photo by:Marchal 2011)

A permanent wetland area 40 Km due west of Gambella town, the Duma wetland, supports a phenomenal diversity and abundance of wildlife, and sustains a large population of the rare Nile Lechwe, an antelope species which is restricted to wetlands, and only has two known sustainable populations (in the Duma and Sudd wetlands). The wetlands in Gambella also support a large population of Shoe billed stork, a rare bird species. Gambella region also harbors populations of elephant, Nubian Giraffe, buffalo, Roan antelope, waterbuck, tiang, reedbuck, and numerous smaller mammals. Carnivores are well represented, and lion, hyena and wild dog have been documented.

The Gambella National Park could potentially link up with the Boma National Park in Southern Sudan, creating the largest cross border protected area in the Horn of Africa, and representing another Maasai Mara-Serengeti phenomena and tourism hub. The Serengeti-Maasai Mara Ecosystem generates over 100 Million US$ per year from the wildebeest migration.

The plains of Gambella National Park (Photo by: Marchal 2011)

Partnership arrangements for project implementation framework, ownership and sustainability
At the national level the implementing institutions are the institute of Biodiversity Conservation and the Forest research centre both of which fall within the ministry of Agriculture
The local communities are implementers and beneficiaries of the project

SUDAN
Introduction

Sudan has an area of 2,505 Km2 and a population of 24,484,000(1989 data) although these Statistic will change soon when Southern Sudan becomes an independent state later this year.
The vegetation cover depends on the zones and the rainfall received with desert and semi desert characteristic dominating the north, Acacia wooded grassland in the Sahel zone, Sudanian woodlands in the South, lowland forest along the border with Zaire and Montane forests in the Imatong Mountains. Around the White Nile are very extensive swamps and floodplains.
Sudan is currently the largest country in Africa with some exceptional biological resources occurring indifferent parts of the vast territory.

Critical conservation Sites

i. The lowland rainforests of South West Sudan in Bangangai Bire -Kpatuos and Marizunga reserves
ii. The montane forests of the Imatong mountains in the South near the border with Uganda and in the Boma National Park which border Ethiopia in the South east of Sudan
iii. The Southern reserves and National Parks including, Nimule national Park, Kidepo Game Reserve, Ashana game reserve and Juba game reserve most of

which may have been destroyed during the civil war of Sudan and armed conflicts of Uganda

iv. The Sudd swamps along the White Nile that represents some of the most extensive wetlands in Africa that are conserved under the Zeraf, Fanyikang, Shambe, Mongalla and Bdngeru Game Reserve

v. The only protected area outside the South is Dinder national park. The area includes a flood plain and surrounding Savannah

vi. Red Sea hills of Jebel Marra and Jebel Gurgei which have unusual flora and fauna and are recognised as biodiversity hotspots by IUCN and Conservation International

vii. The proposed Port Sudan and Sanganeb Atoll marine National Parks

Threats to Biodiversity

The Northern desert and semi-desert areas and marine ecosystems are not included within the protected area system and consequently there is little attempt to conserve the biological resources of those areas

Civil war in Southern Sudan

Tea growing and forestry projects in the Imatong threaten the richest *podocarpus* forest in Eastern Africa

Overgrazing that results to degradation,

Wetlands in the south are threatened by pollution of the oil industries

Rinderpest outbreaks

The Global Forest Resource Assessment of 1990 and 2010 indicated a declining trend in the Sudan forest cover from 32.1% (76.4 million hectares) to 29.4% (69.95 million hectares) respectively. However, it also indicated an improvement in the annual removal of forests, which declined from 589 to 542 thousands hectares for the same period.

The reserved forest area is remarkably increased, from 1.22 million hectares which were reserved during the period (1926-1989) to approximately 12.6 million hectares by the end of 2009. These reserved forests comprise, public, private and community forest reserves. The total area of the reserved forests represents 4.8% of the total area of the country. In addition to that, the total area occupied by other protected areas (Game Reserve) represents 5.7% of the total area of the Sudan. This entails that, 10.5% of the total area of the country is currently under forestry and other natural resources uses, while the Comprehensive National Strategy (CNS) (1992-2002) and the quarter century Strategy (2003 – 2027) allocated 25% of the country total land for natural resources, namely forestry, range & pasture and wildlife.

The ecological diversity of Sudan is reflected in the richness of biodiversity occurrence in the Sudan territory, where out of the 13 mammalian orders in Africa, 12 of them occur in Sudan and 971 species of birds recorded.,

Enabling Policies and policy Gaps for DF&BM in Sudan

The constitution of the Republic of Sudan (1998) provides that the state shall protect the environment in its purity and natural balance in pursuant to sustainable development for the benefit of generations. In article(9) on natural resources, the constitution stipulates that natural resources ,under or on the surface and in the

territorial waters of Sudan are regulated by law. In addition to the constitutional directives the country has enacted the Environmental protection Act (2000) with the following main objectives:

- Protection of the environment in its holistic definition for the realization of sustainable development
- Improvement of the environment and the sustainable exploitation of natural resources
- Creation of linkages between environment and development issues, and the empowerment of national institutions to assume effective roles in environmental protection.

- The Higher Council for Environment and Natural Resources under the Ministry of Environment and Physical resources is in charge of the environment policy and related development work in general.
- On the international Scene, Sudan is party to the Kyoto protocol of combatant climate Change and the UNCCD convention to combat desertification.

Forest Policy, 1986 (Prevailing Policy)

In response to the drastic decline of the forest cover and the growing threat of deforestation coupled with the growing population and increasing demands for forest products and services, the Minister of Agriculture and Natural Resources in 1986, approved the Statement of Forest Policy. The prime objective of the statement is the establishment, reservation, protection and management of forest resources for the purposes of production and environmental protection.

The Forest Policy Statement responded to the new concepts, perceived since the seventies based on the emphasis on environmental protection, popular participation and the multiple uses of forests. The Statement:

Recognized new forms of forest tenure including private, community, and institutional forests, targeted 20% of the area of the country as forest reserves;

- Stressed the role of forests in environmental protection by creating new obligations on a lessee in mechanized farming or irrigated area to maintain or establish green belts;
- Emphasized the role of public participation and the international community in afforestation and sustainable management of forests;
- Recognized the need for research in forest development and emphasized the role of forest extension.
- Forestry resources will be used in a wise, efficient and sustainable manner according to the values and in response to the needs of the people of Sudan, thus creating jobs and opportunities for trade that will help eradicate poverty, achieve food security, and bring about improvements to the country's physical environment.

Proposed Interventions

The proposed interventions under DF&BM in Sudan will include the following:

Policy improvement for DFBM through

- Support of the re-gazettement of Sudan's National Parks under the new laws of the new Sudanese States
- Review of the relevant policies to determine policy gaps and develop a sound national strategy to reverse the loss of dry land forests and biodiversity

Information generation and awareness creation

- Survey and inventory of the biodiversity resources of Southern Sudan

- Optimizing the resource use through communication and awareness creation on the need to use biomass energy efficiently and enhancing such concepts by introduction of efficient fuel stoves and improved cooking techniques.
- To raise the awareness of target beneficiaries and encourage their participation in restoration of the tree cover.

Conservation of dry land forests and biodiversity through

- Support the management of protected areas systems in Sudan
- Extending and rehabilitating the forest resource base through the establishment of community woodlots, shelter belts and improved forest management techniques
- Establishment or rehabilitation of central forests nurseries in the demonstration site for production of required seedlings of such species as Acacias, Eucalyptus and other economically valuable tree species for planting in reserved forests, community forests, individual homes together with seedlings of horticulture as mango, papaya, guava and lemons
- Enhance ecosystem productivity through the establishment and wind breaks in rain fed and irrigated farming areas. This includes planting of indigenous trees and trees characterized by high economic values (Acacia Senegal) planted as shelterbelts, windbreaks and village woodlots

Building Capacity at National and community level;

- Support CBNRM programmes and the establishment of CBNRM institutions around biodiversity areas

Stakeholders of DF&BM in Sudan

Institutions	Role in DF& BM
Government Agencies and institutions	
Ministry of Agriculture	Policy guidance and policy change
Forest national Corporation (FNC)	Project mainstreaming into the national programs and development agenda
Partners	
CARE	Share experience having worked in the region of the proposed intervention site/ information dissemination
Save the Children	Share experience having worked in the region of the proposed intervention site
Finnida	Share experience having worked in the region of the proposed intervention site

World Bank	Give e the indicators that could guide the project evaluation
IUCN	Share best practices from previous project in the area.
UNHCR	Mobilization of the refugees who are part of the threat to biodiversity
Other NGOS	Mobilize community groups and share best practices/capacity building
Farmers	Own and host the project
Refugees	Own and host the project
Nomads	Own and host the project
Implementing institutions	
IGAD	Project vision and coordination
Forest national Corporation (FNC)	Implementation co conservation activities on the ground
Nomad, nomads and farmers	Provide project leadership for CBNRM
ICRAF	Technical inputs on forestry , forest conservation and research
IUCN	Technical inputs on biodiversity protection conservation and research

Sites Selection Criteria

Gedarif State is located in eastern Sudan, and is borders by Ethiopia on the East. It shares its border with four other states namely Khartoum, Gezira, Sennar and Kassala. The state is characterized by arid and semi arid climate with summer rainfall which many range from 200-900 per annum. The state has a flat or undulating topography and various vegetation communities ranging from short grass shrub to Acacia woodlands and mixed forests. Soils are mainly heavy cracking clays. The major land use types are mechanized large-scale farming, smallholding traditional farming and pastrolism. Forest utilization is important in the State.

Soil deterioration and land degradation are evident in both mechanized and traditional farming areas due to mono – cropping of sorghum and continuous use of the land. Large - scale forest clearance and felling of trees is practiced for cultivation. Fuel wood production, charcoal making and overgrazing is evident in many locations .The site which falls in the same ecosystem with the Dinder forest reserve has the following characteristic that are of interest to DFBM:

- Dinder Biosphere Reserve (DBR) bonders Ethiopia in the south Eastern part of Central Sudan The reserve is dominated by the *A, Seyal balanites* drylands vegetation cover. The importance of DBR for conservation can be viewed through several aspects.
- The reserve is an important buffer zone for the vegetation cover of central African species and an important watershed area protecting the most influential feeders of the Blue Nile.
- The reserve together with the Ethiopian plateau makes a complete ecosystem for wildlife in which the Dinder reserve is the dry season habitat for the migratory species. It also supports a high diversity of fauna and flora and its conservation will preserve the biodiversity of the region.
- The greatest threat to the reserve is human settlement with 36 villages surrounding the reserve and eleven villages being located inside the reserve with a total population of about 70,000 people

Partnership arrangements for project implementation framework, ownership and
Sustainability

- The (FNC), being the main stakeholder in the forestry sector of the Sudan, support the implementation of the (DFBM) project as it's' objectives tally with those of the (FNC) and the Sudan forest policy.
- The (FNC) can support the project implementation by providing technical support to the project, the provision of technical staff at both at National and local levels in addition to the other supporting staff if required by the project.

DJIBOUTI

Introduction
Djibouti has an area of 23,000 Square Km with a population of 394,000 (1889) and dominant vegetation cover of semi-desert grassland, scrubland and succulent scrub and dry evergreen forest in the mountains. The coastline is covered by coastal desert and mangroves.

Critical dryland Conservation Sites:

i. The small area of remaining Day National Park and the Mabla Mountains are of importance for birds and flora conservation. There is also an important and unprotected relict Juniper forest in the Goda Mountains adjacent to the Day forest park. In both Mabla and Goda mountains the forests are being damaged severely through wild fires, cattle grazing, tree felling and through military exercises.
ii. Lake Abe and the associated wetlands and plains, located in the Afar depression that is shared between Djibouti and Ethiopia.

Other critical sites for conservation:

i. The coastal mangroves
ii. The refs of Tadjoura

Critical Biodiversity species:

Plants: Only 534 species of plants are recorded in Djibouti, of which there is a good number of endemic species in Goda and Mabla mountains. Two species of interest are the Nubian Dragon tree *Dracaena ombet* which also occurs in Sudan ,Ethiopia and Somalia and the Bankouapalm *Wissmania carinensis* which also occurs in Somalia and Yemen

Mammals: Several species of antelopes, including Soemmerrings and Pelzens Gazelles. Antelope populations are recovering slowly following the hunting ban imposed since the 1970s.The warthog occurs only in Day National Park and is vulnerable and declining due to hunting and overgrazing pressure.

Birds: The endemic Djibouti francolin occurs only in Day National Park and the Mabla Mountains. The threat to the forest through degradation also offers a threat to the francolin as its habitat is destroyed

Enabling Policies and policy Gaps for DF&BM in Djibouti

The policy , legal and environmental framework for Djibouti focuses on four main themes of desert control, conservation of biodiversity, improvement of the populations' livelihoods and the management of water supply. In 1997, the Djibouti government launched the National Environmental Action plan (*Plan d'action National pour l'Environmenmt,* PANE) and by 1999 created the Ministry of Housing, Urbanism, Environment and Country Planning which enhanced the institutional arrangement for the implementation of PANE.
This was followed by the enactment of the Environmental Framework law which was approved in October 2000 and which is more comprehensive.

Proposed Interventions
The proposed interventions under DF&BM in Djibouti will include the following:

Policy improvement for DFBM through

- Extend the boundaries of Day National Park to cover the relic Juniper forest in the Goda Mountains
- Establish a protected area management for day National Park with particular emphasis in controlling overgrazing, deforestation
- Develop a national environmental program focusing of the process of establishing a policy of drylands and creation of national monitoring institutions

Information generation and awareness creation

- Undertake a biodiversity inventory for the Day forest and the Lake Abe –lower Awash landscape
- Develop a conservation Strategy for Djibouti
- Conduct a national campaign to control overgrazing

Conservation of dry land forests and biodiversity through

- Establish a re-forestation program to restore the integrity of Day forest
- Establish a captive breeding program for the Djibouti francolin
- Building Capacity at National and community level;
- Support training of field officers in forest and protected area management
- Establish community institutions for conservation and especially grazing committees to organize the grazing in the Djibouti drylands as overgrazing is the biggest threat to biodiversity and contributes significantly to loss of livelihoods.

Stakeholders for DF&BM in Djibouti

Institution	Role in DF&BM
Government Agencies and institutions	
Ministry of Housing, urban development, Environment and Physical planning-Djibouti	Policy support and policy change. Actual implementation of the project on the ground
Ministry of Foreign Affairs and International Cooperation	Securing the funding and position it in national development
Partners	

Ministry of Commerce Tourism and Transport	Guiding project implementation to complement other initiatives for tourism attraction and commerce
Implementing Institutions	
Local pastoralists	To own and host the project on the ground
IGAD	To coordinate project implementation
ICRAF	Technical input on forestry, forest conservation and research
IUCN	Technical input on biodiversity protection, conservation and research

Sites Selection Criteria

The recommended landscape site for the DF&BM is the Day forest located in the Tadjourah region in the northern part of Djibouti and the Afar depression in north eastern Ethiopia. Shared between Djibouti, Ethiopia and Eretria this region is an arid to semi arid region in character.

The Day forest site covers an area of about 900ha of forest habitat but which is part for a complex and singly unique ecosystem in Djibouti. It extends from an altitude of 1300m to 1783m in the Goda Mountains within a plateau bordered by deep cliffs. The forest vegetation is dominated by forest conifers that are attached to the dense forests of Ethiopian mountains (see Map 2 below) while preserving its own character resulting from the arid climate. It also contains vestiges of Juniper forests similar to those of East Africa.

The forest is also of biological and wildlife significance as it is the genetic reservoir for Djibouti as it contains 60% of the national biological diversity, not to add that it provides the ranging and nesting habitat for the critically endangered Djibouti Francolin

According to recent research by nature Djibouti, more than 65% of the juniper forest is dead, while 30% is ecologically moribund and the vegetation dominance is being taken over by fig species (Hussein 2008).

The reported tree death is a result of combined action of drought, overgrazing, soil compaction by livestock hooves, firewood collection and possible impacts of climate change.

There is need to save this island of forest and biodiversity by protecting it through policy change and instituting innovative and participatory practices to sustain the conservation and use of its resources.

The Afar depression represents 30% and 60% the arid lands of Ethiopia and Djibouti respectively with very sparse vegetation dominated by acacia shrubs. The ecosystem in the Afar region and the lower awash basin are a unique assemblage of drylands, wetlands and lakes in an extremely dry area of the Easter great African Rift Valley. The area is of global significance as it plays a key role in sustaining livelihoods that are based on livestock rearing and transhumance.

In terms of conservation importance, Lake Abe and the associated wetlands are considered to be Important Bird Areas (IBAs) as the landscape is important migration route to and from the Arabian Peninsula, used by many Palaearctic species in spring and autumn.

The DF&BM aims to address issues with respect to policy, institutional arrangements for conservation information gathering and dissemination and capacity of the local communities through the ecosystem landscape approach. UNEP together with the governments of Ethiopia and Djibouti has been implementing an integrated Ecosystem management program in the same area which DF&BM will be building on with respect to dryland forest and biodiversity conservation approach.

KENYA

Kenya has an area of 582,664 Km2 with a population of 42m people (2010). The predominant vegetation is dry bush land in the north and east of the country giving way to savannah grasslands in the south lower areas and Afro-montane in the mountain areas. Kenya has a huge diversity of critical biodiversity sites, many of which comprise protected areas. Its best known for the Savannah parks which encompass nearly all the savannah habitat types within the country.

Critical conservation sites

a. Bush land Savannah parks: Tsavo ecosystem which include the Tsavo East and West National Parks, South Kitui Reserve and Taita Hills Game Sanctuary. The Tsavo ecosystem adjoins to the Nkomazi game reserve in Tanzania, forming a large block of Semi arid lowland woodland

b. Plains Savannah parks: Maasai Mara Game reserve which adjoins to the Serengeti national park in Tanzania and has the highest wildlife concentrations in Kenya Amboseli National park which is a wetland park in the middle of a relatively dry land environment, and Nairobi national park

c. Rift valley and associated lakes National Parks and reserves (Lake Nakuru, Lake Bogoria, Sibiloi National Park, Central Island and South Island N.P in Lake Turkana, Hells gate , Saiwa swamp, Yala Swamp and Labwe valley).

d. Mountain Parks of Mt Kenya, Aberdare's, Mt. Elgon, Meru National Park, Oldoyo Sabuk, and Marsabit National Parks ,and Mt. Kulal Biosphere reserve and mountain conservation areas of Cherangani hills, Loita hills, Chyulu Hills, Taita hills,, Mau escarpment and Ngurumani escarpment.

e. Forest Reserves of Kakamega forest, Arabuko Sokoke forest, Boni and Ndundori reserves, Tana River Primate Reserve, Shimba hills national reserve most of which area under serious threat and in view of their uniqueness should be protected.

f. Marine parks and reserves of Kisite Mpunguti, Malindi-watamu,, Kiunga marine and Biosphere reserve, Diani Chale, and Ras Tenewi.These areas include coral reefs, sea grass beds, dugong and turtle populations and sea bird colonies of international significance.

Biodiversity threats

- The habitats and species of the arid northern part of the country and those of forests and dry land wetlands are not adequately protected.
- The forests are seriously threatened with encroachment both in the mountains and lowlands. The main causes of encroachment are agricultural expansion, and demand for fuel wood and charcoal.
- Rinderpest still presents a threat to all susceptible ungulates, especially those whose populations are small
- Illegal hunting and poaching has severely reduced the population of several species of large mammals such as elephant and rhino.
- Invasive species especially in the wetlands,(water hyacinth and Nile cabbage)
- Coral reefs are under threat of siltation , pollution and tourist pressures
- Lack of adequate control measure for tourism activities (such as off road driving, development of tourist facilities in the heart of the ecosystems) is seriously disturbing wildlife and causing habitat degradation particularly in the smaller protected areas.
- Poor water management is threatening several important wetland areas such as Lake Naivasha and lake Victoria,

Enabling Policies and policy Gaps for DF&BM in Kenya

The new constitution of Kenya(2010) Chapter (5) section 69 stipulates that the state shall ensure sustainable exploitation, utilization, management and conservation of the environment, natural resources, and ensure the equitable sharing of the accruing benefits,, further, (a) it will work to achieve and (b) maintain a tree cover of at least 10% of the land area of Kenya, (d) encourage public participation in the management, protection and conservation of the environment,(e) protect genetic resources and biological diversity. Section (72) directs that parliament shall enact legislation to give full effect to the above provisions. But there are also existing policies and strategies which were established under the previous constitutional under which the environment and biodiversity resources including dry land forests are currently managed. These include: Forest Act (Cap 385),Environmental Law (EMCA 1999), Land Act (Cap 288),The wildlife Conservation and management Act of 1976 and the 1989 Amendment, The timber Act (Cap 386),the agriculture Act (Cap 318) ,Vision 2030 provides for 10% forest cover and the new constitution provision for 10% tree cover amongst other sectoral legislations. All these policies strategies to promote dry land forestry and allied resources for livelihood improvement and environmental conservation and management

The formation of the Ministry of Northern Kenya where most of the drylands in Kenya are located the proposed site lies is major government and donor initiative to address the environmental and social economic challenges facing the drylands in Kenya.

Over the past 20 years, Kenya has experienced intense deforestation where an estimated 19,000 ha of forest cover are lost every year. In response to this unsustainable practice, significant changes area taking place in the forest sector by way of restructuring the forestry department, new impetus for the implementation of the Kenya forestry master plan, and stake holder inclusion in the implementation of the new forest Act. At the same time the legislative framework that protects biodiversity can no longer cope with the emerging challenges of threats and trends of human wildlife relationships especially the increased rate of encroachment to wildlife habitats the has resulted to the increase in the dimensions human wildlife conflict.

The increase in land degradation in the rangelands and drylands that result in the loss of ecological diversity, loss of species and subsequent loss of human livelihoods will also require new attention in terms of legislation and policy instruments.

Proposed Conservation Interventions
The proposed interventions under DF&BM in Ethiopia will include the following:

Policy improvement for DFBM through

- Establishment of more forest reserves and National Parks in northern Kenya and upgrading the level of protection in existing reserves.
- Gazettement of wildlife and livestock movement corridors in the Northern Rangelands of Lakipia, Samburu and Marsabit
- Developing forestry policies as well as developing strategies on drylands forests and biodiversity.
- Develop policy guidelines and schemes for benefit sharing of ecosystems services at national and community levels.
- Organise policy dialogue workshops at the regional, national and community levels involving all key stakeholders.
- Facilitate engagement between communities and their parliamentary representative to dialogue on dryland policy change.

Information generation and awareness creation

- Community Environmental education

Conservation of dry land forests and biodiversity through

- Improve the management of lowland forests such as Arabuko Sokoke and Tana River primate reserve.
- Conservation assessments for desert areas beginning with Chalbi desert and Karoli in northern Kenya
- Demarcate and gazette dry bush lands and woodlands as forests of value.
- Develop and implement management plans for drylands forestry

Building Capacity at National and community level;

- Provide capacity building for communities in natural resources management at local level.
- Provide technical training to address the inadequacy of skilled personnel to support the sustainable management of dryland forests and livelihoods.
- Establish production and trade guidelines for Orchids, cycads, aloes, gum Arabic and promote *ex situ* production
- Review the appropriate institutional structures for sustainable management of dryland forests and biodiversity.
- Strengthen and facilitate dry land forests and biodiversity resources coordination committees, production groups and marketing unions to benefit from economies of scale.

Take stock of Indigenous Traditional Knowledge (ITK) and community involvement and participatory learning approaches to strengthen dryland resources management system.

This project is relevant to other national , regional and global initiatives that target drylands such

- NALEP project
- Desert Margins project
- United Nations Convention to Combat Desertification(UNCCD)
- UN Convention on Biological Diversity(UNCBD)

- UN Framework Convention on Climate Change(UNFCCC)

Stakeholders of DF&BM in Kenya

Institution	Role in DF&BM
Government Agencies and institutions	
Ministry of local Government	Authority of the areas for project implementation
Ministry of Environment and mineral resources	Policy support and implementation of environmental policy change
Ministry of Forestry and Wildlife	Policy support and implementation of policy change on forests and biodiversity
Kenya Forest service	Mandate for forest management and support for project planning.
Kenya Wildlife service	Mandate for protected area system and management of biodiversity resources in Kenya
NEMA	Synergy –Custodian of the complementary environmental law
Partners	
NGOs	Sharing of the best practices and policy advocacy
Community Based Organizations	Community mobilization and information sharing
FBOs	Community participation in forest management at the project level
KEFRI	Information gathering and dissemination on research, and best practices in forestry
Kenya Forest Working Group (KFWG)	Policy advocacy for dryland woodlands and biodiversity
IUCN	Technical support on biodiversity conservation strategies and scientific innovations and best practices
ICRAF	Technical support on scientific innovations ad practices in forestry, agro- forestry and forest conservation and expansion
Implementing institutions	
Local Community	To own and host the project
IGAD	Overall project coordination
NEMA	Synergistic support at policy level for example on EIAS
MFW	Actual project implementation at policy level
KFS	Actual project implementation at the forest sites
KWS	Actual implementation on the biodiversity sites

Sites Selection Criteria

Kenya Shares bonders with five other Eastern African countries: Ethiopia, Sudan, Somalia, Uganda and Tanzania. Along the Northern border with Ethiopia, are the Marsabit-Turkana landscape that is characterised with severe aridity and, dry land lakes and isolated elevated landforms such as Mt Marsabit.
Samburu- Marsabit Ecosystem which display both negative and positive aspects of dry land resource management and degradation and where the impact of dry land forests and biodiversity has a very critical relationship with the livelihoods of the local community.
Most of the landscape characterised by extensive plains lying between 530-760m above sea level and occasionally interrupted by mountain elevations like the Ndoto Ranges (2500m) and Mt. Nyiru (3010 m) in the south west along the Samburu Marsabit district border. Other landforms are sedimentary plains, volcanic plateaus and volcanic hills. Chalbi desert which is an old saline lake bed is the lowest land surface at 4535-500m.
Due to variations in terrain, rainfall also varies with elevation. Mt Marsabit at a much higher elevation (1700m) receives 800mm while the lower parts receive less than 200mm pa.
The district is endowed with limited forest cover due to its low levels of precipitation. There are significant stands of forest at mountain tops, for instance Mt Marsabit and Mt. Kulal have forests that area protected as conservation areas but are faced with serious problem of overexploitation.
In the same landscape lies the Marsabit National Park and reserve, comprising of a densely forested mountain and three crater lakes that are the only permanent surface water in the region and that provide habitat to a variety of birdlife. The forest cum dry land ecosystem is rich in wildlife with elephants, gravy's zebra, lion, leopard, buffalo, and bushbuck amongst other plains species occurring abundantly.
On the Ethiopian side, this transboundary site should include Harenna forest and Bale mountains National Park. The Bale mountains National Park which protects over 2400 square km of pristine plains, woodland and bush land is home to a unique multitude of flora and fauna species as well as several endemic mammals namely, Mountain Nyala, Semien fox and Ethiopian wolfs amongst others

Partnership arrangements for project implementation framework, ownership and Sustainability

- Ministry of forestry and wildlife as policy makers, Kenya forest service as implementing institution.
- Kenya forest service Board of management
- Forest Conservation Committees(FCC) and their sub committees
- Community forest associations(CFAs)
- CBOs and NGOs both local and national resident and operating within the project sites
- Government policies recognize 30 % women in every sectoral man power development
- Forest ACT, CFC and CFA should have women presentation.
- Committees from the National to local level strive to enhance gender involvement in its structures both women and the youth

ERITREA

Enabling Policies and policy Gaps for DF&BM in Eritrea

The government of Eritrea has developed several policy documents to address environmental and sustainable management of natural resources. The policy documents include;

- The National Environmental Management Plan for Eritrea(DOE 1995) that provides the basic policy document for action in the environment sector and lays out a strategy for conservation activities.

- The national Biodiversity Strategy and Action plan (NBSAP 2000) which indicates Eritrea's position with respect to biodiversity conservation and prioritizes this policy in the context of other government's major developments objectives. The policy is implemented under the ministry of Land water and Environment and is inclusive of the government's commitment to implement the Convention on Biological diversity (CBD). Some of the policy action under this policy and which are relevant to DFBM includes the gazettement of protected areas for wildlife habitat conservation, promoting afforestation through conservation, promoting public awareness in biodiversity conservation and creating linkages among stakeholders. The policy further recognizes and supports capacity building of its institutional resources, communities and stakeholders as a means of achieving its purpose.
- National Environmental Impact Assessment Procedures and guidelines(NEAPG)
- Eritrea's initial national Communication(INC) on Climate Change (1995)
- National Adaptation program of Action
- National Action program to Combat Desertification Land and Forest Tenure policy Proclamation No. 58/1994(GOE1994)
- The national Forestry Strategy and Policy

These are some of the existing policies and strategies that support dry land forests and biodiversity conservation in Eritrea. But other more sector specific policies area proposed such as land and energy policies as the support biodiversity and forest conservation.

SOMALIA

Somalia has a surface area of 630, 000 km2 and a population of 8,248,000 people (1989 data).The predominant vegetation id dry deciduous bush land and thicket with semi desert grassland and deciduous shrub land.

Although Somalia possesses some important and unusual biological resources, with a high proportion of endemic species (particularly plants), the country has been severely ravaged by civil strife and security problems, drought and subsequent human disasters. There is no Protected Area System neither adequate legislation for the protection and conservation natural and biodiversity resources.

Critical Conservation sites

i. Zeila; Las Anold-Taleh Chebet which has been proposed as a national park.Rsa Hajun-Ras Gubah, Ie Hamure, Far Wamo and Lack Badan.These areas were rich in biodiversity but poaching of wildlife has been rampant.
ii. Areas along Shebelle and Juba Rivers-Jowhar-Warshek, Har Yiblem, Eji-Oobale,Awdhegle-Gandershe,Boja swamps and Lake Radidi.
iii. The mountains of Northern Somalia which have rare species and where two National Parks are proposed at Goan Libaax and Daalo forest up to the Northern coastline of Somaliland

Biodiversity threats in Somalia

- Somalia lacks any organized protected area system to conserve its critical sites. As a result, the most important sites for conservation are experiencing heavy overgrazing of livestock and hunting of large mammals.
- Hunting of large mammals has reached catastrophic levels due to inadequate protection.
- Most wildlife and economically valuable plant life are threatened or endangered due to overexploitation

Enabling Policies and policy Gaps for DF&BM in Somalia

Somalia is located at the horn of Africa at an advantageous position bordering both the India Ocean and the Gulf of Aden on the Eastern and Northern boundaries respectively. It bonder Kenya to the South ,Ethiopia to the West and Djibouti on the North West border.

Most of the country is typically savannah with few forested areas. According to the World Bank, 55% of the land is suitable for grazing with a forest cover of 52,000 ha of dense forest and 5.7 million ha of low density woodlands.

The main environmental Challenges in Somalia includes, alarming deforestation and overgrazing resulting to soil erosion and desertification, Stalinization of the soils due to inefficient irrigation methods, dumping of toxic waste in the sea and coastal areas, unsustainable hunting and subsequent depletion of some wildlife species. Despite these challenges there is n central government institution charged with environmental institution currently, but several ministries and state agencies were responsible for the protection and management of the environment before the civil war, such as the National Park Agency which was established in 1970 for the purpose of initiating the gazettement of parks and reserves and the National Range Agency which was created in 1976 to establish grazing and draught reserves. These institutions are no longer functional and the war began before they could implement their mandates.

During the last several years deforestation in Somalia has been accelerated by the emergence of a business where charcoal is exported to Gulf States with considerable profits. This has increased the use of power saws to cut down acacia trees in order to meet the insatiable demand for charcoal. From the rural interior of Somalia charcoal is transported by trucks to the ports of Mogadishu. Kisimayo and Bosaso from where it is shipped for export (BBC 2000, IRIN 2000).Due to absence of a functional government, there are no records of the charcoal volumes being exported or the amount of trees being cut.

The habitat loss due to deforestation will cause huge impact to biodiversity conservation and some of the anal and floral species may be depleted from the Somali ecosystem.

Proposed Conservation Interventions

The proposed interventions under DF&BM in Sudan will include the following:

Policy improvement for DFBM through

Support the development of a conservation plan for the protection of Mountains of Northern Somalia which have rare species and where two National Parks are proposed at Goan Libaax and Daalo forest up to the Northern coastline of Somaliland

Information generation and awareness creation

Undertake an inventory of the biodiversity of Somalia beginning in the Northern parts where order is resuming

Develop an interim framework for conducting baseline surveys and for identifying traditional conservation institutions in Somali so that they can continue with conservation activities before the establishment of formal institutions.

Conservation of dry land forests and biodiversity

Explore the possibility of establishing and managing protected forests and biodiversity areas in northern Somalia

Building Capacity at National and community level;

Identify and engage institutions and stakeholders who can implement conservation projects in Somalia and build their capacity after a capacity needs assessment

SELECTED PROJECT IMPLEMENTATION SITES

Based on the findings analyzed in this study report and making consideration of geographical distribution and focusing on the most critical and threatened ecosystems and species/ species habitats, the sites listed below were selected.

Each IGAD Member State had its own criteria of selecting a site depending on its conservation priorities and strategies.

The overall selected representative landscapes were also selected with consultation to the member states institution that are responsible for the conservation and management of forests and biodiversity, stakeholders, implementing partners and donor considerations.

Although initially the demonstration site shad been identified as the suitable approach to deliver the objectives of DF&BM, there were fears that the program would be reduced to national projects thereby losing its initial regional focus articulated by IGAD in the initial approved Project Identification Fiche

Table 1 below shows the proposed sites/ landscapes for the DF&BM in the region:

Site/Landscape	Transboundary area	Remarks
The Omo-Boma Gabella landscape	South Western Ethiopia and Southern Sudan	
The Zoka-Otzi-Mt Kei-Nimule landscape	Northern Uganda and Southern Sudan	Including the Nimule National Park, Aloma plateau and Ewatoka mountain in Southern Sudan, and Mt Kei Otzi and Era forest reserves in Uganda
The Gadarif – Dinder- Alatish landscape	North West Ethiopia and Sudan	

Samburu Marsbit- Oromia landscape	Northern Kenya and Southern Ethiopia	
Day forest-lake Abe Basin-Lower Awash Landscape	Djibouti and North eastern Ethiopia	

The stakeholder and program implementation partners have of the project have been identified in this Annex but only the role of key implementation partners are described in detail because the other implementing institutions wound be playing supportive and administrative roles.
For effective implementation, each member state team will implement on some tasks on their side of the boundary but the overall implementation committees should be transboundary and cross and intra institutional in their composition.

Relevance of the DFBM interventions
Dryland forests of Sub-Saharan Africa have the potential to contribute to poverty reduction and food security, as long as they are well valued and sustainably managed. The inhabitants of dryland forests are mostly farmers, herders and forest product gatherers whose livelihoods are largely dependent and those forests and woodland resources. To sustain these forests and especially in the growing incidences of population increase and climate change, there is need for dedicated forest management regime that respond the logic and both the immediate and long-term needs of dryland populations. A critical aspect of this management is to ensure that communities derive the consequent benefits from the drylands so that they became the agents of controlling degradation, deforestation and mitigation of the impact of climate change. The DFBM program endeavors is relevant to this approach as it seeks to strengthen the policies governing the drylands in general and drlands forests in particular; create awareness and disseminate information on the best practices and value addition of dryland products at the local level ; establish biodiversity and forest landscape sites where best practices will be demonstrated and build capacity at the community and national levels to increase people's ability to cope with the challenges on livelihoods in the drylands.

Feasibility
The most important contributing factor towards degradation of fragile lands in Sub-Saharan Africa is a nexus of poverty, rapid population growth and inadequate progress in increasing crop yields. Poor people in their quest for food and other livelihood needs are increasingly expanding cultivation into forests, steep hillsides and other fragile areas, overgrazing the pasture lands and cutting down trees for fuel wood and charcoal. To address this nexus there is need to focus on the many opportunities for investment in the drylands and to address the formidable challenges such as vulnerability to droughts and desertification. The greatest opportunity lies in the dry land forests and biodiversity out of which the livelihoods can be improved and environmental challenges such as land degradation addressed at the same time by choosing appropriate household and communal interventions. Towards this end there is need to integrate not only the needs but also the productive potential of drlands peoples into economic and trade strategies

Roles and Responsibilities

IGAD secretariat/TAT

- IGAD secretariat (TAT) will coordinate the DFBM project activities and disburse the funds from its headquarters in Djibouti to the national focal points, implementing partners and the biodiversity and

forest landscape sites and retrospectively receive progress and financial reports from the implementing partners on a quarterly basis. Through the support of the TAT, IGAD will also take the lead in the implementation of Result Areas 1 and 4.

- The TAT through the IGAD secretariat will subsequently report to the EC delegation Addis Ababa according to their financing agreement and following the 10th EDF guidelines.
- The TAT will particularly coordinate the implementation of the biodiversity and forest landscape sites annual work plans and monitor the implementation of demonstration site work plan.
- The TAT will also organize, conduct and report on the regional workshops including selection and invitation of participations.
- IGAD secretariat will enter into MOUs and partnerships with implementing partners while the national focal points will coordinate local agreements between communities e.g. on land acquisition/selection.

National focal points

- The national focal points will put in place the institutional arrangements for project implementation from the national level to the grass root level.
- The national focal point will provide the policy framework for project implementation and mobilize relevant ministries and related sectoral policies and projects to give synergy to the DFBM project.
- They will also work with the relevant institutions, partners and communities to identify and justify the location of the biodiversity and forest landscape sites
- The national focal points should organize for the launch of the project to give the project national visibility and support.
- Reports on the project progress at the national level.
- Account to IGAD secretariat for the funds disbursed to them according to the 10th EDF guidelines.

Roles of Implementing partners

IUCN

- Participate in coordinating implementation of activities on the biodiversity and forest landscape sites.
- Reach multi-stakeholder consensus over activities.
- Develop national implementation plans for the member states.
- Prepare and manage partnership contracts with government and non government partners.
- They will also monitor and evaluate the implementation of activities
- Communicate lessons to other communities and stakeholders through publications.
- Will facilitating national policy dialogue.

ICRAF

- ICRAF will carry out an agro forestry research survey in every demonstration site.
- Provide advice on appropriate agro forestry tree species and management strategies
- Will build an understanding of monetary, social and environmental values of tree-based systems.
- Will build capacity on local systems of natural resources governance
- Marketing of Agro forestry products by developing value chains and market links for tree products.
- Will promote land health management through improving and managing land health in the pilot sites and at the same time avail methodologies and technologies for monitoring changes in land conditions.
- Advise on climate change adaptation strategies for the pilot sites.

- Assist Site steering committees in implementing policies as well as incentives for successful Agro forestry systems in the pilot sites.
- Link the project to available (and appropriate) information exchange systems.
- Communicate project research results to intended users.

Project Steering Committee (PSC)

- mobilize the community to own the project and to undertake the respective project activities including community contribution
- Develop the work plan for the biodiversity and forest landscape sites in conjunction with other implementing partners.
- Mainstream the project in the local development Agenda.
- Supervise staff and oversee all project activities on site.
- Act as the procurement committee for the demonstration site with other implementing partners sitting as its ex-officials.
- Represent the biodiversity and forest landscape sites communities at the national and regional fora.
- be the custodian of accounting and administrative document working in close collaboration with technical sites officers
- Take steer the project beyond the funding period.
- Account for the funds expended at the biodiversity and forest landscape sites level.
- Give quarterly progress and financial reports to the national focal points and other implementing partners.
- The site technical officer will be the executive secretary of the environmental committee.

Cost effectiveness

This is a regional project but which will be implemented at the national local levels by national focal points and local communities. The land for the biodiversity and forest landscape sites will be donated by the local community and the project will prefer where the land is communally owned. In case of private ownership, the land tenure should remain but other community members should have an understanding with the private land owner for access. There will be no capital outlay to purchase the land.

The casual labor will be sourced from the local community in addition to the community contribution which will bring the cost of implementation down as the local rates will be used without additional cost of transportation and accommodation.

Supervision will be at national level while coordination will be done from IGAD headquarters in Djibouti. This will afford national focal point officer sufficient time at the project site and in contact with the implementing community. The implementing partners (IUCN, ICRAF) will also use their national agents to implement their components thereby reducing the cost implementation from their head offices significantly as they will not be required to fly to the biodiversity and forest landscape sites very frequently. Each demonstration site will have a technical officer based at the site to support the project steering committees thereby further reducing the cost of communication.

Other than where manufactured goods and equipments have no alternatives local materials and services will be preferred not only for convenience and timeliness of delivery but also to support the local community economy.

Capacity building for the local community will be done on site or in close proximity where training facilities are available except in case like exchange visits and participation of national and regional workshops. This way the cost of training especially that of travel and accommodation will be reduced significantly.

We recommend that consultants be first sourced from the member states where the consultancy assignment will be done and only result to external consultant only in cases where national capacities is inadequate or lacking.

Regional workshops should be held in central locations to reduce the cost of air tickets by participating representatives from member states.

At the national and local level, payments should be done at local currencies to reduce the transactional costs in banks for operating EURO account.

DFBM Objective tree