



**PROJECT EXECUTIVE SUMMARY
SUBMISSION FOR CEO ENDORSEMENT**

GEF

AGENCY'S PROJECT ID: GEF ID 1848
COUNTRY: Kenya
PROJECT TITLE: Mt Kenya East Pilot Project for Natural Resources Management
GEF IMPLEMENTING AGENCY: IFAD
EXECUTING AGENCY(IES): United Nations Office for Project Services (UNOPS)
DURATION: 4 Years
GEF FOCAL AREA: Multifocal
GEF OPERATIONAL PROGRAM: Integrated Ecosystem Management (OP12)
GEF STRATEGIC PRIORITY: Integrated Ecosystem Management (EM-1)
ESTIMATED STARTING DATE: March 2005
IA FEE: US\$ 382 000 (shared IFAD, \$141K & UNEP, \$241K)

FINANCING PLAN (US\$)	
GEF PROJECT/COMPONENT	
Project	4,700,000
PDF A	
PDF B	350,000
PDF C	
Sub-Total GEF	5,050,000
Others	
Sub-Total Co-financing:	21,070,000
Total Project Financing (excluding PDFB funds):	25,770,000
FINANCING FOR ASSOCIATED ACTIVITIES IF ANY:	40,500,000
LEVERAGED RESOURCES IF ANY:	

CONTRIBUTION TO KEY INDICATORS OF THE BUSINESS PLAN:

Indicators for GEF-Funded Activities. An estimated 500 000 people adjacent to the Forest Reserve in 5 km diameter and another 300 000 in the next 5 km will benefit, 2 800 ha of degraded land rehabilitated 1 950 indigenous forests and 850 plantation forests), 50% reduction in area affected by wildfire, 85% reduction in frequency of illegal activities in the protected areas, 6 operational forest-specific management plans developed and implemented, operational ecological monitoring and information management system established, two participatory forest management strategic plans developed and implemented, Mweiga Research Station strengthened for Ecosystem monitoring, a research outpost established in Mt. Kenya National Park, development of a strategy to open elephant migratory corridors and seek alternative funding for implementation, establish 397 km of barriers, one set of guidelines and a document outlining decision support tools for improved water resource allocation by KWS and Forest Department in the National Reserve.

Indicators for IFAD-funded Activities. 260 000 people will be beneficiaries. Under Water Resource Management Component; 7 sub-basin management plans developed and increased downstream dry season flow by 20%, all new water abstraction (4/district/year) meet set guidelines and 50% of illegal abstractions regularized, 463 improved water projects developed, 13 RWUAs established and actively managing water resources. For the Ecosystem Management Component, 5 000 farmers adopt improved soil management practices, 15% reduction in soil erosion, Soil physical and nutrient condition improved by 25%, 25% increase in crop production and 1 000 Ha in non-protected areas re-afforested. Under Rural Livelihoods Component, diversification of household incomes through promotion of alternative income generating activities to account for 10% of their incomes, technology development to process farm produce at household level for increased incomes. Community Empowerment Component; baseline surveys for 7 sub-basins, 5 040 farmers trained in natural resource management, 72 functional groups formed and operational, 550 training sessions for 13 RUAs and 72 WUAs, 5 040 farmers enrolled as members of Farmer Field Schools, 72 CBO, 58 IGAs Groups(1 640 farmers) and 25 front line staff trained. Project Management Component, PMU appointed and operating financial systems operational baseline surveys conducted and M&E system implemented and progress reports submitted on time.

RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT(S):

Prof. Ratemo W. Michieka
Director General,
National Environmental Management Agency

Date: 17 August 2004

Approved on behalf of the International fund for Agricultural Development and United Nations Environment Programme. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for work program inclusion.

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PROJECT SUMMARY

A) PROJECT RATIONALE, OBJECTIVES, OUTPUTS, AND ACTIVITIES.

1. Mt. Kenya National Park and Forest Reserve measure 2,700Km² and were gazetted in 1945 and 1948 respectively. In 1993, one of the six World wide Global Atmospheric Watch Stations was established in the National Park to monitor climate change. In 1997, the National Park and Forest Reserve were declared a World Heritage Site by UNESCO. In 1999, the Kenya Wildlife Service carried out a survey and time series analysis of satellite imagery of the National Park and Forest Reserve and found serious degradation of the protected areas. Following the survey, the Government of Kenya (GOK) has implemented a number of strong actions to address the problem of degradation. These include:- (a) the management of the Forest Reserve was transferred from the Forest Department to the Kenya Wildlife Service, and the area was officially gazetted as a National Reserve, (b) logging in forest plantations was banned, and (c) plantation forestry replanting programme was initiated immediately. A follow-up survey was carried out in February 2003 which found that the area subject to degradation had not increased since 1999, there was a nineteen-fold increase in the area reforested and some natural regeneration was taking place in indigenous forests. However, there were problems associated with Non-Resident Cultivation system and the government reviewed the system during which it was evident the system was mismanaged and without adequate resources to improve it, GOK implemented its fourth major action on March 31, 2004 of banning the system. These actions are clear evidence of GOK's commitment to the conservation of Mt. Kenya.

2. Ecosystem degradation in Mount Kenya is caused by a complex and dynamic mix of driving forces and resultant pressures. The four major driving forces, or root causes of pressures/threats to the ecosystem are (a) poverty, (b) population pressure, (c) institutional constraints and (d) climate change.

3. **Poverty.** The project area is considered of high agricultural potential but the poverty levels are similar to the national average (60%) and increasing due to a combination of factors; population pressure, market failure of traditional cash crops, small farm holdings, low productivity and over-exploitation and, degradation of natural resources. There is a direct relationship between poverty and environmental degradation. Land degradation and loss of biodiversity exacerbates poverty through soil degradation resulting in declining yields and employment and incomes, and reduced food security and nutrition and hence human productive capacity.

4. **Population pressure.** Resource use and absolute numbers of people impact on environment but this is dependent on natural resources as well as agricultural management practices. Mt. Kenya area is densely populated (350-1 000 persons km⁻²), however, population pressure is not the problem since optimum resource management and land use patterns can sustain productivity even under heavy population pressure. Land degradation in Mt. Kenya is brought about by the conjunction of two factors, steep increase in population density and the absence of sustainable natural resource management practices.

5. **Institutional constraints** have contributed to the ineffectiveness to protect, regulate and conserve natural resources. Management of forest resources has largely been the responsibility of regulatory authorities with clear separation between the government and the people who depend on those resources however, the resources availed to the regulators have been inadequate. Consequently, lack of environmental awareness /incentives/involvement at local level has constrained conservation efforts as forest-adjacent communities have been excluded from forest management and conservation activities and so have had no direct stake or real interest in the sustainable use of forests. In addition, the lack or failure of adequately supported monitoring and information systems has led to inability of the institutions responsible to accurately assess the status of biodiversity and condition of natural resources and to implement long term and proactive ecosystem management plans and strategies. The government has recognised the shortfalls of the natural resource management approaches and has formulated new enabling policies in favour of community involvement in natural resource

management which promote awareness and a shift in emphasis from regulation to participatory management, but these will require improved institutional capacity. The increase in self-driven self-help groups witnessed in the last decade has been as a result of a genuine and collective commitment to conservation and sustainable resource management but this has operated in the absence of relevant legislative and policy framework. Community Natural Resource Management need to be promoted but training is required for field level technical GOK staff in the new policies, along with measures to increase community awareness and understanding.

6. **Climate change.** While the impacts of climate change on species and ecosystems, are subtle destruction of forests and soil degradation make significant contributions to climate change by reducing carbon stores and increasing atmospheric emissions and that many of the factors are influenced by land management practices. Whilst estimates for loss of carbon through land degradation in the project area are not available, it can be assumed that the significant loss of vegetation cover in both protected and agricultural areas has resulted in substantial losses in carbon storage and sequestration potential.

7. **Pressures (Threats) and Impacts.** The threats and impacts include:- (a) unregulated and excessive water use for agricultural production which have led to the reduction in the reliability of downstream water supply, impacted on riparian environments and decreased water quality in the slopes below the tea zone, (b) poor agricultural practices such as cultivating steep slopes, over-grazing and intensive cropping without adequate inputs hence the resultant declining soil fertility, (c) illegal activities in the National Reserve such as logging of native trees and poaching have led to local decrease in wildlife populations and (d) breakdown of Non-Resident Farming System or 'shamba system' (e) repeated fire occurrences which have altered structural and species diversity and encouraged establishment of invasive species, and (f) escalating human/wildlife conflict due to the close proximity of the human settlements to Mount Kenya National Forest.

8. **Development and Global Environmental Objectives.** The development goal of the GEF Alternative, the Mount Kenya East Pilot Project for Natural Resource Management Project, is to ensure equitable and sustainable use of nature resources for sustainable poverty reduction. The specific environmental objective is to improve conservation, management and sustainable use of biological resources in the protected areas of Mt. Kenya National Park and Forest Reserve while at the same time ensure equitable and sustainable use of natural resources by farmers in the agricultural areas. The intermediate purpose is to involve all stakeholders in improving biodiversity conservation and enhancing management through: (a) support for community-based water resource management along ecological boundaries, (b) implementing measures to address land degradation on community trust lands and farm plots; (c) improving sustainable on-farm food production and promotion of on- and off-farm income-generating activities together with protection from wildlife menace, (d) build district GOK technical staff and community capacity for local governance; and (e) support for project coordination in the agricultural areas and improved management of the National Park and Reserve.

9. The objectives will be achieved through integration of the following outputs:- (a) improved water regulatory systems and water use efficiency, (b) enhanced natural resource management and biodiversity conservation, (c) increased sustainability of rural livelihoods systems (d) strengthened local governance capacity and (e) project management and coordination. IFAD and GEF financing have been blended in order to address the inter-related threats to the mountain ecosystem as well as natural resource management in agricultural lands. There are two sets of activities to be implemented; activities addressing the driving force behind the pressure on the protected areas (poverty) to be financed by IFAD and secondly a set of activities that seek to address the impact of unsustainable use of natural resources the National park and Forest Reserve by promoting sustainable natural resource management for the conservation of biodiversity. GEF financing will be directed to supporting measures to improve the management of the protected area and rehabilitate certain indigenous and plantation forest areas, while also mitigating human/wildlife conflict. During the course of the project preparation process, GOK has been explicit about its willingness to assume

financial responsibility for incremental staff salaries associated with increased protection activities within a sustainable framework, although it is not able to finance the costs associated with the training and equipping of such staff.

10. This approach is based on the principle that sustainable poverty alleviation is a prerequisite to successful and sustainable implementation of conservation efforts. The activities to be supported are aimed at reducing poverty, reduce pressure on natural resources and subsequently halt and reverse environmental degradation on agricultural lands and at the same time promote integrated ecosystem management in project area.

11. **Project Component.** The project has five purposes, each comprising a component:-

Purpose 1: Improving Water Resources Management.

Purpose 2: Enhancing Environmental Conservation

Purpose 3: Increasing Sustainable Rural Livelihoods.

Purpose 4: Strengthening Local Governance Capacity.

Purpose 5: Timely Implementation of Planned Activities

12. **Project activities: Component 1: Water Resources Management Component.** *The component has two three sub-components (a) river basin (catchment) management, (b) community water development which covers irrigation and domestic rural water supply. The component seeks to enhance water use efficiency through improvement of river basin management, improve river intakes, support water resources data management, improve community-based water resources management and strengthen the capacities of water departments in water resource planning, management and control in line with existing legislative and policy framework. Initial work will entail an assessment of: (a) water management practices; (b) baseline survey on water abstractions; (c) water quality assessment; and (d) water flow rates. The project will further build on the existing River Users Associations (RUAs) and local initiatives, and it will support formation of new RUAs to work in partnership with the district water departments to address specific river basin management challenges such as water apportionment and catchment degradation, and/or resolve water conflicts. In addition, KWS capacity to engage in the approval process for water abstraction and regulation in the National Park and Forest Reserve will be strengthened.*

13. **Component 2: Ecosystem management.** This component will promote sustainable use of natural resources and address land degradation in protected and non-protected areas. There are three sub-components: (a) Community Resource Management; (b) Mount Kenya Ecosystem Management; and (c) Rehabilitation of the National Reserve. These sub-components will seek to ensure effective conservation management of the unique biodiversity of Mount Kenya Ecosystem through conservation of forest ecosystems and associated ecological processes. The project will strengthen the regulatory systems and introduce planning mechanisms. Activities under the component will include rehabilitation of degraded trust lands, and other publicly owned lands, communal lands, reclaimed wetlands and cultivated river banks, degraded road embankments as well as adoption of energy efficient technologies in charcoal production. In addition, the project will empower communities through their associations. The GEF-funded activities will focus on strengthening the capacity KWS for effective Ecosystem Management and support will be provided to: (a) train 48 rangers, rehabilitate ranger outposts, construct ranger barracks, dog kennels in the and supply electricity, improve communications, rehabilitate access roads and bridges, (b) rehabilitate forest degraded areas; (c) promote participatory community forest management and support the preparation of strategic management plans for selected forests; (d) preparation of forest-specific operational management plans; (e) upgrade and/or develop of facilities and systems to undertake, research, monitoring and information management for the Mount Kenya Ecosystem; (f) improve fire-fighting capacity; and (g) develop a tourism management plan for National Reserve.

14. **Component 3: Rural Livelihoods.** The component activities will seek to diversify farm incomes, link farmers to markets, and reduce human/wildlife conflicts. Thus, the overall goal is ensure harmonious co-existence between the animals and the neighbouring communities. The component seeks:- (a) to address the livelihood issues at the farm level through a combination of measures to improve agricultural production, non-farm incomes, farm produce value at farm gate and soil and water conservation; and (b) to reduce the menace from wildlife by developing a strategy to address human/wildlife conflicts along elephant migratory corridors as well as reduce incidence of wildlife invasion of farmlands, reducing human forest encroachments, strengthening the capacity of KWS as well as local communities in addressing the conflicts.

15. **Component 4: Local Governance Capacity.** The Component will strengthen local community institutions for effective natural resource management. Through the project, communities will acquire necessary skills and support to develop sustainable solutions to inherent and cyclic poverty. In addition, the project will strengthen district technical capacity through training of district-level staff in project cycle management, preparation of annual work plans and participatory techniques, including those for monitoring and evaluation and field level physical audits of community supported activities. However, no activities have been budgeted to be funded by GEF under this component, but support for local capacity in NRM, especially participatory forest management human/wildlife conflict resolution, water resource management in the National Park and Forest Reserve will contribute significantly local community empowerment.

16. **Component 5: Project Management and Coordination.** The project will strengthen KWS to carry out its mandate as per the Wildlife Management Act, mainstream the role of KWS in watershed management and strengthening their monitoring system, develop a strategy, guidelines and decision support tools to assist KWS and FD in water allocation.

B) KEY INDICATORS, ASSUMPTIONS AND RISKS

17. **Water Resource Management.** The expected outcome indicator is:- water use efficiency enhanced through: improvement of river basin management and more efficient water systems at community level and the objectively verifiable indicators will include more water storage in upper catchments and better water management with stable or increasing flows downstream during the dry season, functioning and regularly updated water resources database and approved water abstractions in National Park and Forest Reserve in line with hydrological assessments.

18. **Environmental Conservation.** Under the component, expected outcome indicators will include improved natural resource management and biodiversity conservation through forest rehabilitation in protected and non-protected areas and community natural resource management in non-protected areas, improved ecosystem management capacity by all stakeholders and improved capacity of KWS for research, monitoring and information management. The objectively verifiable indicators will include:- non-protected areas sustainably rehabilitated leading to increased canopy cover and distribution of forests, decreased frequency and impact of disturbances in protected areas, reduced human/wildlife conflicts, road embankments protected, increased time spent on proactive rather than reactive activities and M&E and other data/information collated, disseminated and used for effective ecosystem and land management.

19. **Rural Livelihoods.** The expected outcome indicators are improved livelihoods of rural communities through; off-farm income generating activities (IGAs), improved marketing of agricultural products and reduction of human/wildlife conflict over land. The verifiable indicators will include increased crop yields, soil nutrients and fertility, number and types of farm produce, primary, semi-processed and processed, number of groups reached, farm and off-farm IGAs promoted, reduced livestock mortality, increase livestock productivity, increased household incomes due to processing of farm produce at farm level, length of barriers established, reduced frequency and impact of animal

incursions into farmlands and reduction in number of animals/people killed or injured because of human/wildlife conflicts.

20. **Community Empowerment.** The expected outcome indicators from the component are improved local level governance capacity through establishment/strengthening of CBOs, NGOs, County Councils and other grassroots organisations and strengthening of GOK district technical services for service delivery to communities. Verifiable indicators include increased number of functional grassroots organisations and improved service delivery.

21. **Project Management.** The major outcomes of the component are:- effective implementation and management of project activities and the verifiable indicators will be the establishment of PMU to manage project activities in agricultural areas and KWS strengthening to manage activities in protected areas.

COUNTRY OWNERSHIP

22. **Country Eligibility.** Kenya has ratified (i) the United Nations Convention on Biological Diversity (UNCBD) on 26 July 1994; (ii) the United Nations Framework Convention on Climate Change (UNFCCC) on 30 August 1994; and (iii) the United Nations Convention to Combat Desertification (UNCCD) on 24 June 1997. Kenya has also signed the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals, the Ramsar Convention on Wetlands of International Importance, and the Vienna Convention on the Protection of the Ozone Layer.

23. **Country Drivenness.** Mount Kenya East Pilot Project for Natural Resources is a country-driven project based on national priorities and designed to support sustainable development within the context of national programmes such as the PRSP, the Economic Recovery Strategy, the National Biodiversity and Action Plan, as well as national Water and Forest Policies.

3 PROGRAM AND POLICY CONFORMITY

A) FIT TO GEF OPERATIONAL PROGRAM AND STRATEGIC PRIORITY

24. The project meets the requirements of the GEF's OP 12 on Integrated Ecosystem Management and is consistent with Convention of Parties 3 and with article 8 of the Convention on Biological. The benefits to be generated will be in terms of conservation of a globally significant ecosystem and species and generate multi-focal benefits in land degradation, biodiversity and climate change (enhanced carbon sequestration in rehabilitated lands and ecosystems). The project will have strong linkages with; OP#15 on sustainable Land Management Programme; OP# 4 on Mountain Ecosystem and OP# 3 on Forest Ecosystems. Lastly, the project will contribute to the GEF Land and Water Initiative for Africa and is linked to the New Partnership for Africa's Development (NEPAD) and its Environment Action Plan. To complement the GEF funding, IFAD will support activities aimed at addressing causes and negative impact of land degradation on Mount Kenya Ecosystem stability, functions, services as well as the local communities' livelihoods and economic well-being. Thus GEF and IFAD-funding will have synergy and complementarity as they will address the causes and impact of environmental degradation.

B) ASSUMPTIONS AND RISKS:

25. **Risks.** There are internal and external risks associated with the project implementation. The internal risks include; (a) project implementation specifically coordination of the timing of field activities with local communities as well as activity coordination between government technical services at district and the community levels, (b) financial flows due to failure to coordinate release of

funds by IFAD and GEF and when the funds are released to the government, delays in request for the replenishment of expended funds. However, the performance of KWS and its status as a recognised parastatal has reduced the risk as its financial performance in the past has been satisfactory, (c) institutional partnership as strained relationship between KWS and FD in the past has affected jointly implemented activities but this has been mitigated by the participatory preparation of the GEF component of MKEPP as the two institutions have been represented in all the stages of the process. There are external risks associated with the project implementation which are beyond the control of the MKEPP and these include climatic factors, such as drought flood, stability of political, legal and institutional regimes.

C) SUSTAINABILITY (INCLUDING FINANCIAL SUSTAINABILITY)

26. **Sustainability.** The long-term sustainability of the project interventions is underpinned in (a) participatory approaches and training of communities and district government agencies (b) utilisation of existing institutional structures to oversee and organise project activities and deliver outputs and evaluate impact, (c) active participation by communities particularly soil and water conservation, forest rehabilitation and participatory management, and human/wildlife conflict resolution, (d) the revenue expected from development of and implementation of tourism plan (e) revenue from development of forest and non-forest products following the operationalization of the Forest Policy and Act, (f) beneficiaries in form of contributions or in-kind for the maintenance of some of the infrastructure, (g) public sector budgetary allocations as this will continue, (h) the establishment of a research outpost at KWS Park Headquarters will support better on-site monitoring and will attract external research institutions to Mount Kenya and these will pay for the use of the facilities and (i) improved capacity of KWS Staff to store, collate and interrogate ecological information for improved day to day management of the National Reserve.

D) REPLICABILITY.

27. The project has built-in replication mechanisms as the mid-term review will assess experiences and lessons learned in the five sub-catchments and this will form the basis for selecting additional three sub-catchments following consultations with local communities and integrated ecosystem management approaches will be replicated in these sub-catchments. It is envisaged that the integrated ecosystem management approach could eventually be replicated in other regions of Kenya and in other countries with similar agro-ecological characteristics and problems related to protected areas situated within high population density agricultural areas. The outcomes of participatory management of forest, soil management and water resources will be of particular interest because of their enormous potential to improve biodiversity conservation and natural resource management for local, national and global benefits.

E) LESSONS LEARNED.

28. The greatest IFAD project successes in Kenya have been where community-led and community driven initiatives have played a significant part in project design and implementation. This lesson has been closely integrated into the design of all activities. Communities have provided inputs in the identification of the activities proposed to be funded through the consultative workshops funded under PDF-Block B held during the project design. While past experiences with reference to the establishment of barriers has been mixed, two important lessons have been learned by local communities and KWS (a) attitudes have changed significantly over the past ten years, and communities have become increasingly convinced that electric fences represent the best long-term cost and labour effective option for preventing wildlife incursion into their lands. and (b) KWS has learned a great deal about the participatory process prior to construction of wildlife barriers and the selection of the type of barrier, and while participatory processes may take time, it is crucial to ensuring community ownership and commitment to barrier maintenance.

F) STAKEHOLDER INVOLVEMENT

29. The principal partners are Ministry of Water Resource Development, Ministry of Environment and Natural Resources, Ministry of Tourism and Wildlife, Kenya Wildlife Service, Forest Department, Kenya Forest Research Institute, UNEP as the GEF Implementing Agency and the civil society, NGOs and CBOs. All these stakeholders have been consulted during the project formulation with special emphasis on the communities living in the environs of the National Park and Forest Reserve. The GEF will build on this partnership to ensure continued ownership of all activities implemented. In the project implementation, participation of local communities, district forest department staff, KWS, NGOs, KEFRI and other donors will be involved and the project will draw on past experiences of other donors and specifically the on-going work funded through GEF/SGP.

4 MONITORING AND EVALUATION

A) MONITORING, EVALUATION AND DISSEMINATION

30. **Objectives of M & E** are two to: (b) measure physical and financial project implementation progress against specific targets set during the annual project planning sessions and (b) measure bio-physical and socio-economic project impacts and progress towards achieving overall project and component objectives. While specific indicators have been developed at this stage, these will be further refined during the early stages of project implementation once participating communities have been selected and site-specific activities have been agreed between PMU staff, EICC, DPCC, implementing partners and participating community groups. The effectiveness of the monitoring programme will be subject to continuous evaluation to ensure it is effective in measuring project implementation progress and impact. In PY1 and subsequent years, M & E will be refined, tested and adjusted as necessary. Overall, objective and purposes of the project, as well as the list of its planned outputs, have provided the basis for this monitoring and evaluation plan. The following will be monitored:- (a) project execution in which internal monitoring will focus on management and supervision of project activities, seeking to increase the efficiency and effectiveness of project implementation and will collect information on both physical and financial progress on activities programmed in the monthly, quarterly, semi-annual and annual workplans; (b) Internal evaluation will assess progress toward achieving logframe outputs and targets. Project performance will mainly report on quantitative outcomes while impact monitoring will assess both quantitative and qualitative outcomes. In accordance with national government requirement, the annual audit of project accounts will be carried out by the National Audit Office (NAO). In addition, a 90-day internal rolling audit function will be carried out by an externally recruited private audit firm, in line with the agreement reached for all IFAD financed interventions in Kenya.

31. Monitoring will be conducted using participatory approaches, particularly at local and district level, involving the implementing partners Forestry Department KWS, NGOs and CBOs and the PMU. GOK technical services in the districts will be trained to conduct participatory monitoring using simple field techniques and household surveys with local communities. The more technical aspects of measuring carbon sequestration and mapping the diversity of forest ecosystems will require targeted research in order to determine the impacts of project activities on these important dimensions and will be sub-contracted to competent local organisations.

B) INDICATORS OF PROJECT EXECUTION

32. Measurement of project outputs will be based on the Logframe and the evaluation will be carried out by the KWS with support from MISO from PMU. These will be consolidated at PMU level as the Project Annual Report which will be submitted to PSC, UNEP and IFAD. Performance indicators are presented in the M & E Annex attached herewith. External mid-term evaluations will be

effected after two years of project implementation. These will be commissioned from external consultants by UNEP in consultation with the GOK and IFAD. These evaluations will be preceded by annual technical audits.

C) SCHEDULE FOR DETERMINATION AND IMPLEMENTATION OF INDICATORS.

33. The project implementation will take cognisance of the current IFAD thrust in addressing project implementation in Kenya in which there is a two-year initiative to improve planning, budgeting, reporting and monitoring by PMUs and the government district technical staff. This is the approach to be adopted during the implementation of MKEPP. The M & E approach being developed has four phases:- (a) ownership building activity which entails reviewing the project Logframe with PMU staff and government technical services and validate the logframe and proposed indicators, (b) agreeing upon roles and responsibilities in light of the ownership building activity, (c) agreeing upon the content and approach for conducting baseline study in light of indicators validated by PMU and government technical services, (d) developing tools including baseline study report, collection of impact information and analyze such information as part of annual performance review of the project and (e) carry out a thorough review of the indicators during the Mid-Term Review in order to determine changes that should be introduced.

34. **Key ecological indicators.** Monitoring of ecological and conservation impacts will review overall changes and trends in: (a) sustainable allocation and use of water resources; (b) forest diversity, rehabilitation, protection and management; (c) soil condition and management; (d) carbon sequestration; and (e) impact of wildlife barriers on wildlife populations and habitat.

35. **Key social and economic indicators.** Community and social indicators will focus on measuring effectiveness in engaging communities in participatory forest and water management activities, adoption of improved soil and water practices and tangible benefits derived from project activities which contribute to improved livelihoods and food security. Key indicators could include:- (a) number of communities and members (by gender) actively involved in participatory forest and water management; (b) communities involved in and maintaining project initiated benefit-generating activities; (c) proportion of income from non-farm sources including project activities and proportion from traditional sources; farm profits; household income per capita; (d) adoption of improved soil and water management practices; and (e) crop productivity and food security.

5 FINANCIAL MODALITY AND COST EFFECTIVENESS

The total incremental cost (MKEPP) is therefore USD 25.80 million, which gives a total of USD 40.15 million for the GEF alternative. In table 3 one can find the details of the expected financing of the incremental costs. GEF is expected to contribute to 18.3% of the incremental costs (USD 4.7 million), while the remaining 71.7% would come from co-financing sources, namely IFAD (USD 16.7 million), the Government of Kenya (USD 1.8 million) and the beneficiaries (USD 2.5 million). A summary MKEPP cost table by components is provided in attachment 1. In table 4 there is a summary of baseline and incremental costs by output

Table 4: Summary of baseline, incremental costs and total GEF alternative (USD million)

Table 4. Summary of baseline, incremental costs and total GEF alternative (USD million)							
	Baseline	Incremental costs (MKEPP)					GEF alternative
		GEF	Co-financing			Total	
			IFAD	GoK	Benef.		
Water resource managem.	2.00	0.16	5.35	0.51	0.74	6.75	8.75
Environmental conserv.	7.90	2.74	4.37	0.34	0.29	7.78	15.64
Rural livelihoods	3.45	1.10	3.10	0.43	1.45	6.08	9.53
Community empowerment	1.00	-	1.64	0.08	0.04	1.77	2.77
Project management	-	0.70	2.28	0.45	-	3.43	3.43
TOTAL	14.35	4.70	16.74	1.82	2.51	25.80	40.12
		(18%)	(65%)	(7%)	(10%)	(100%)	

6 INSTITUTIONAL COORDINATION AND SUPPORT

A) CORE COMMITMENTS AND LINKAGES

36. The project is in line with Land Use Management and Soil Conservation Policy of UNEP which underpins environmental dimensions of land use management; linkages with land and soil conservation, poverty, land tenure, public participation, environmental impact of agriculture, water management, environmental emergencies, urbanisation, global climate change and trade. Some of these issues are central to the Mount Kenya East Pilot Project of Natural Resource Management. UNEP and all the stakeholders at central level in Nairobi as well as in the field have been extensively consulted in the project preparation process. During the consultation process, there was a lot of emphasis placed on past, present and immediate future GEF-funded projects with a view to assess the implementation successes as well as bottlenecks. All these have formed the basis for the identification of the project outputs and implementation modalities. The project will be implemented with support from UNEP in collaboration with UNOPS.

B) CONSULTATION, COORDINATION AND COLLABORATION BETWEEN IAS, AND IAS AND EXAS, IF APPROPRIATE.

37. The proposed GEF Alternative was initiated during discussions between UNEP and IFAD in 2001, and the preparation process has reflected the mandates of each of the institutions. While IFAD has taken the lead in the project design process, there has been close consultation with UNEP and has benefited from the substantial work that UNEP has undertaken in the Mount Kenya National Park and Forest Reserve, which has provided a basis for the analysis and the double-focus design of project activities on both issues related to the importance of agricultural areas within the overall ecosystem and the impact of human activities on the forests in the National Reserve. The focus of IFAD financed activities on addressing land degradation in the high potential agricultural areas is a result of its emphasis on addressing poverty, while the issue of wildlife menace has repeatedly been placed at the top of the concerns articulated by its target groups. At that time, UNEP and IFAD concluded that this proposed project should be submitted under OP#12 for Integrated Ecosystems.

C) PROJECT IMPLEMENTATION ARRANGEMENTS

38. The GEF Alternative will be implemented by GOK, through KWS now under Ministry of Tourism and Wildlife and the activities will be coordinated at Mt. Kenya National park headquarters. KWS will recruit specialised agencies including KEFRI, KARI and NGOs to implement some of the activities under contractual arrangements. All activities will be implemented with full participation of local communities and their organizations. IFAD-funded activities in the agricultural areas will be implemented by the government with Ministry of Water Resource Management Development as the lead agency. Community mobilisation will be implemented by Department of Social Services of the Ministry of Culture, Gender, Social Services and Sports, forest-related activities will be under Forest Department within Ministry of Environment and Natural Resources while livelihoods activities which are principally focused on agriculture will be coordinated by Ministry of Agriculture and Ministry of Livestock Development and Fisheries

39. **At the national level**, the Project Steering Committee has been set up for overall policy decisions, approving the Annual Work Plans and Budgets and ensuring that activities undertaken are in accordance with national policies and procedures. The committee members are to ensure that project interventions are coordinated where appropriate with other development programmes and projects. The Project Steering Committee will be chaired by the Permanent Secretary, Ministry of Water Resources Development and be composed of representatives from Ministry of Environment Natural Resources, (including National Environmental and Management Agency-NEMA) Ministry of Tourism and Wildlife, Ministry of Agriculture, Ministry of Finance, Ministry of Planning,

Department of Social Services, Ministry of Culture Gender and Social Services, Kenya Wildlife Service (KWS), and Provincial Commissioner, Eastern Province. The Project Manager is an ex-officio member of the committee and serves as its secretary.

40. **At district level** in line with the GOK policies, the MKEPP activities will be coordinated by the District Project Coordination Committee as a sub-committee of the District Development Committee which draws membership from technical departments, NGOs CBOs and KWS is represented. Implementation of activities in agricultural areas will be coordinated by the PMU. Through the district coordination mechanisms, Kenya Wildlife Service will be integrated into the activities being implemented in agricultural areas neighbouring the National Park and Reserve. GEF-funded activities will be coordinated by Ecosystem Implementation and Coordination Committee (EICC) which will draw membership from KWS, PMU, FD, representative from civil society

41. **Coordination of GOK/GEF-Funded and GOK/IFAD-Funded Activities** The implementation of GOK/GEF and GOK/IFAD funded activities will be coordinated at the level of implementation. In the design of the IFAD-funded activities, there is provision for KWS to be represented in DPCC which will be a sub-committee of the District Development Committee and chaired by the District Commissioner and the District Forester Officers are members. In the case of GEF-funded activities the EICC is proposed with the Warden in Mt. Kenya as the Chairman and the MISO from PMU as the secretary and DFOs are members. The two committees will ensure coordination of the GEF and IFAD-funded activities. For policy guidance and approval of the AWPBs, PSC which is at national level will be responsible.

ANNEXES

Annex A: Incremental Cost Analysis.

Annex B: Logical Framework.

Annex C: STAP Review and IA Response.

Annex D: Monitoring and Evaluation Plan.

ANNEX A: INCREMENTAL COSTS, DOMESTIC AND GLOBAL BENEFITS

BROAD DEVELOPMENT GOALS

42. The Government's **Poverty Reduction Strategy Paper (PRSP)** published in 2001 sets the overall goals of reducing the proportion of people living in extreme poverty by half and of reducing poverty prevalence to less than 30% by 2015. During the consultation process that led to its elaboration, the Agriculture and Rural Development sector has been given top priority, consistent with the fact that the sector is the main source of livelihood for about 80% of the total population and that at least three quarters of the poor live in rural areas. Crop development, rural water, livestock development and food security have been identified as the priority issues within the sector.

43. As a tool to achieve the PRSP objectives, the **Economic Recovery Strategy for Wealth and Employment Creation, 2003-07 (ERS)** was published in June 2003 by the Government of Kenya to outline its development strategy, policies and priority areas of intervention for the next 5 years. It is based on four pillars and five cross-cutting themes. The four pillars are: (a) macro-economic stability to create an enabling environment for rapid economic growth; (b) strengthening institutions of governance to set the ground for sustainable development; (c) rehabilitation and expansion of physical infrastructure, in particular for transport, energy and telecommunications; and (d) investment in the human capital of the poor with a strong emphasis on health and education. A strong emphasis is given to the recovery of productive sectors including agriculture, tourism, trade and industry. Specific envisaged interventions in the agricultural sector would focus on: providing a single enabling legislation to replace the large number of legislations in the sector, rationalising the roles and functions of agricultural institutions to empower the poor farmers, increasing institutional efficiency, strengthening extension services and increasing access to credit by the smallholders.

44. The area surrounding Mount Kenya outside the boundaries of the Forest Reserve is subject to considerable population pressure because of its relatively high agro-ecological potential. This pressure combined with increasing processes of land and water degradation and poor social and economic infrastructure and services is gradually leading to the erosion of the potential of the natural resources of Mount Kenya and the consequent impoverishment of the surrounding communities. In such context poverty reduction and improvement of the living conditions and incomes of the local communities remains the major development goal in Mount Kenya area.

GLOBAL ENVIRONMENTAL OBJECTIVE

45. The conservation of Mount Kenya ecosystem is of global and national interest due to its importance as a biodiversity reservoir, water catchment area and source of livelihoods for the surrounding communities (see section I of the project brief). This diversified and important ecosystem is under serious threat because of human pressure (poverty and demographic growth), institutional constraints and climate change, which give rise to illegal activities such as forest encroachment, logging and poaching, human wildlife conflicts on land use, unregulated and excessive water use and agricultural practices that are harmful to soil conservation. Investment and actions are needed to support a more sustainable and environment-friendly use of the natural resources of this ecosystem, which must necessarily envisage a stronger involvement of surrounding communities in its management.

46. The Mount Kenya East Pilot Project for Natural Resource Management (MKEPP), for which the GEF co-financing is proposed, aims to reduce poverty and improve food security and income levels of farmers and rural women through more productive, equitable and sustainable use of natural

resources in Mount Kenya area and in particular by reducing visible accelerating land degradation processes and improving access to and management of water resources.

47. The **conservation, management and sustainable and equitable use of biological resources of Mount Kenya ecosystem** is therefore at the same time an intermediate objective of MKEPP and a global environmental objective that can justify GEF financing under OP 12 on Integrated Ecosystem Management.

48. The aim of OP 12 is the “adoption of comprehensive ecosystem management interventions that integrate ecological, economic, and social goals to achieve multiple and cross-cutting benefits”, which may include: (a) conservation and sustainable use of biological diversity, as well as equitable sharing of benefits arising from biodiversity use; (b) reduction of net emissions and increased storage of greenhouse gases in terrestrial and aquatic ecosystems; (c) conservation and sustainable use of water bodies, including watersheds, river basins, and coastal zones; and (d) prevention of pollution of globally important terrestrial and aquatic ecosystems. MKEPP is expected to contribute to all these four levels of benefits.

49. In addition, MKEPP is expected to contribute to global environmental objectives in terms of carbon sequestration and soil degradation, with linkages to OP 15 on Sustainable Land Management, the aim of which is the “mitigation of the causes and negative impacts of land degradation on the structure and functional integrity of ecosystems through sustainable land management practices”.

BASELINE

50. The expected amount for baseline financing during the period of implementation of MKEPP is summarised in table 1. As some projects, namely CKDAP and FORREMS, also cover geographic areas outside Mount Kenya, only a percentage of their committed financing for that period has been considered for the baseline.

Table 1: Expected Baseline Financing in Mount Kenya Area (USD million)

	Period	Total financing	Financing 7/2004-6/2011 ^b	% for baseline	Baseline financing
CKDAP (IFAD and GoK)	2001-07	18.0	12.6	50%	6.3
KWS Mt. Kenya area (GoK)	Annual	0.5	3.5	100%	3.5
FD Mt. Kenya area (GoK)	Annual	0.5	3.5	100%	3.5
COMPACT II (GEF and UN Found.)	2004-07	0.9	0.9	50%	0.45
FORREMS (USAID)	2003-06	1.7	1.5	40%	0.6
TOTAL					14.35

Notes: ^(a) Over the period July '04 - June '11

^(b) Including other geographic areas in the case of CKDAP and FORREMS (less than 100% considered for baseline).

51. Below, we briefly present the baseline interventions by MKEPP output and we clarify the assumptions used for their allocation to the different outputs.

Baseline - Output 1: Water Resource Management

52. The Central Kenya Dry Areas Smallholder Project (CKDAP, 2001-07), is already working in dry areas of two districts (Nyeri and Kirinyaga) surrounding Mount Kenya - on the southern and western sides – and is addressing aspects related to domestic water supply and the development of water use for agricultural purposes. Although not in the original design of the project, the emphasis of the water component is now being shifting from a pure infrastructure perspective to a more integrated approach taking into account water management aspects and the need to support water users' associations as a tool for an improved, more equitable and more sustainable management of the

resource. Moreover, Laikipia district,¹ in the North-West side of Mt. Kenya area, is being considered for inclusion in CKDAP for aspects related to water management and support to water users' associations. The expected baseline expenditure in support of this output is about USD 2 million.

Baseline - Output 2: Environmental conservation

53. Two Government institutions and a few donor funded projects are intervening in Mount Kenya area specifically addressing environmental conservation of the ecosystem. KWS has a mandate to manage and protect biodiversity within the boundaries of the National Park and Reserve and to ensure peaceful interaction between wildlife and the communities surrounding the protected area. They are engaged in a range of activities from tourism management, including revenue collection and mountain rescue activities, to patrolling of the protected areas against illegal activities and the control of wildlife movements to prevent the destruction of crops, human livelihoods and livestock. The financial resources allocated annually by KWS to activities in Mount Kenya area are about 41 million Ksh (USD 520,000) including personnel and recurrent expenditure. The Forest Department (FD) is the government institution mandated to manage forest and tree resources in the country, meaning protection against tree poaching, grazing, fires and diseases, use regulation including licensing for forest products, policing of protected areas and forest extension work outside gazetted areas (farm agro-forestry). The double gazettement of the Mount Kenya Reserve and the lack of clear boundaries between plantation and indigenous forests have led some uncertainty on the actual competence of FD in the Reserve. The financial resources allocated annually by GOK to the FD in the five Districts around Mount Kenya are about 8 million Ksh/district (USD 100,000) for personnel and recurrent expenditure, for a total of about 40 million Ksh (USD 500,000) for the five districts.

54. The demand-driven nature of the COMPACT project, whereby NGOs, CBOs and local communities can access funds to finance initiatives and small projects broadly aiming at biodiversity conservation of the Mount Kenya ecosystem, makes it difficult to allocate its expected financing to the different MKEPP outputs. The projects eligible for financing are of several types, including some that may be more directly related to the environmental conservation output of MKEPP, such as establishment of tree nurseries, replanting of degraded forests by communities, development of ecotourism initiatives, community training on natural resource management, promotion of dialogue, exchange of information and awareness creation on the Mount Kenya ecosystem, etc. For the purpose of our analysis, and on the basis of the experience of the first phase of COMPACT, we assume that the USD300,000 already committed non-GEF resources for the period 2004-07 will go to contribute to environmental conservation.

55. The FORREMS is mainly an institutional strengthening programme for KWS and FD, to reinforce GOK capacity in natural resource management. The bulk of the allocated USD 1.7 million is going for training of the newly recruited forest guards (about 1,000) and some institutional support and capacity building of the two institutions. Some activities, however, are specifically implemented in the north-eastern area of Mt. Kenya,² such as the elaboration of a joint fire management plan for Mt. Kenya ecosystem, the upgrading of the fire fighting capacity (equipment, water pumps, etc.) of some forest stations, the completion of the Mt. Kenya Ecosystem Management Plan, the piloting of commercial plantation management through outsourcing and participatory forestry management with communities' involvement; and some other activities on ecological monitoring and database development. We assume that about 40% of the remaining 1.5 million USD, that is USD 600,000, will be spent in the Mount Kenya area on activities directly contributing to the environmental conservation output of MKEPP.

Baseline - Output 3: Rural Livelihoods

¹ This district, although strictly not bordering with the Natural Reserve, has important linkages with Mt. Kenya ecosystem because of its proximity to the area.

² Naromoru, Gathiuri and Nanyuki in Nyeri District and Mucheene, Ontulili and Meru in Central Meru

56. The main objective of Central Kenya Dry Areas Smallholder Project (CKDAP) is to contribute to reducing poverty and vulnerability to diseases and hunger of the poor rural communities through the provision of social and physical infrastructure and the improvement of household incomes. A strong emphasis is therefore on the improvement of the livelihoods of the communities of its intervention area through: (a) investments in agricultural development (crop and livestock production technologies, agricultural services such as research/extension, marketing/processing, credit, etc. and soil conservation measures); (b) support to off-farm income generating activities; and (c) improvement of socio-economic infrastructure and services such as primary health care, sanitation, domestic water supply and others identified by the communities themselves as their own priorities. It is assumed that about USD 3.3 million will be spent by CKDAP on activities contributing to output 3 of MKEPP.

57. COMPACT has also been investing on the improvement of the livelihoods of communities surrounding Mount Kenya, with the aim to reduce pressure on forest resources. Given the demand-drive nature of the project, it is expected that about USD150,000 non-GEF resources committed by the project for 2004-07 will go to finance activities that will contribute to output 3 of MKEPP. Assistance to communities to identify and implement income-generating activities such as beekeeping and fish farming or the installation of solar fences to reduce damages to agricultural crops and wildlife/human conflicts over resource utilisation are some examples of activities of this type financed during the first phase of the project. Wildlife barriers in particular have received support from various donors during the last few years given the high priority attached to it by local communities. Despite that, the establishment of barriers remains by far below the needs expressed by the population.

Baseline - Output 4: Community Empowerment

58. CKDAP is the only intervention in Mount Kenya area that provides specific support to community development through capacity building of grassroots organisations and the provision of funds to finance micro-projects identified by the communities themselves. It is expected that USD 1 million of its allocated funds will go to finance this component. Other small projects and NGOs are supporting the empowerment of rural communities in the area of Mount Kenya, but no systematic information is available to estimate their expected contribution, which would in any case be marginal in terms of amount of funds.

59. In table 2 shows the baseline financing summarised by the MKEPP output to which it is expected to contribute.

Table 2: Baseline Financing by MKEPP Output (USD million)

	Water resource management	Environmental conservation	Rural livelihoods	Community empowerment	Project management	TOTAL
CKDAP	2.0	-	3.3	1.0	-	6.3
KWS Mt. Kenya	-	3.5	-	-	-	3.5
FD Mt. Kenya	-	3.5	-	-	-	3.5
COMPACT II	-	0.3	0.15	-	-	0.45
FORREMS	-	0.6	-	-	-	0.6
TOTAL	2.0	7.9	3.45	1.0	-	14.35

GEF ALTERNATIVE

60. The socio-economic study³ of Mount Kenya area undertaken during the preparation phase of MKEPP identifies “relentless deforestation, poor water management, soil erosion, and various processes of land degradation together with low productivity of agricultural systems” as mutually reinforcing impacts of human activity on the environment resulting from a fragmented and uncoordinated approach to natural resources and ecosystem management, which will eventually have negative feedback effects on the socio-economic situation of the communities around Mount Kenya.

61. The linkages between poverty and environmental degradation in the Mount Kenya ecosystem are complex and go in both directions (see section II.A, main report). Poverty forces the surrounding communities to rely more heavily and exert more pressure on natural resources, even within protected areas, for their livelihoods. This happens with little concern for the long-term sustainability of the resources and for the consequent negative effects on biodiversity and ecosystem conservation. Poor management and overexploitation of the natural resources are gradually leading to their depletion, thus undermining in the medium-term main livelihood source of the surrounding communities.

62. The combination of investments to improve the conservation and management of natural resources and reduce the poverty of surrounding communities is the strategy adopted by MKEPP to lay the foundations for a long-term sustainable management of the natural resources of the Mount Kenya ecosystem. The complementarity of global environmental objectives and development goals is therefore embedded in the very approach followed by the project.

Table 3: Incremental cost financing by output (USD million)

	GEF		IFAD		GOK		Benef.		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
A. Water Resource Management										
1. River Basin Management	0.16	5.8	2.40	88.8	0.14	5.3	-	-	2.70	10.5
2. Community Water Development	-	-	2.95	72.8	0.36	9.0	0.74	18.2	4.05	15.7
Subtotal Water Resource Management	0.16	2.3	5.35	79.2	0.51	7.5	0.74	10.9	6.75	26.2
B. Environmental Conservation										
1. Community Natural Resource Management	0.40	8.9	4.37	88.2	0.14	2.9	-	-	4.95	19.2
2. Ecosystem Conservation and Management										
a. Forest rehabilitation	0.51	62.0	-	-	0.02	2.7	0.29	35.3	0.82	3.2
b. Ecosystem management capacity	1.28	89.4	-	-	0.15	10.6	-	-	1.43	5.6
c. Research, monitoring & inform. managem.	0.55	95.4	-	-	0.03	4.6	-	-	0.57	2.2
Subtotal Ecosystem Conserv. and Managem.	2.34	82.7	-	-	0.20	7.1	0.29	10.3	2.83	11.0
Subtotal Environmental Conservation	2.74	35.7	4.37	56.2	0.34	4.4	0.29	3.7	7.78	30.2
C. Rural Livelihoods										
1. On-farm Soil and Water Conservation	-	-	1.36	73.4	0.09	4.9	0.40	21.7	1.85	7.2
2. Income Generation Activities	-	-	0.65	74.6	0.01	1.7	0.21	23.7	0.87	3.4
3. Marketing	-	-	1.08	61.2	0.22	12.6	0.46	26.2	1.77	6.9
4. Human/wildlife conflict resolution	1.10	69.9	-	-	0.10	6.5	0.37	23.6	1.58	6.1
Subtotal Rural Livelihoods	1.10	18.1	3.10	51.0	0.43	7.1	1.45	23.8	6.08	23.5
D. Community Empowerment										
1. Community Development	-	-	1.30	92.3	0.07	4.8	0.04	2.8	1.40	5.4
2. Strengthening District Technical Capacity	-	-	0.34	95.3	0.02	4.7	-	-	0.36	1.4
Subtotal Community Empowerment	-	-	1.64	92.9	0.08	4.8	0.04	2.3	1.77	6.8
E. Project Management	0.70	20.3	2.28	66.6	0.45	13.1	-	-	3.43	13.3
Total PROJECT COSTS	4.70	18.3	16.74	64.9	1.82	7.0	2.51	9.7	25.80	100.0

³ Socio-economic Reconnaissance Study for the proposed Mt. Kenya East – Tana River Catchment Conservation, Land Use and Water Management Pilot Project. ETC (2002): Final Report, Nairobi April 2002.

63. The total incremental cost (MKEPP) is therefore USD 25.80 million, which gives a total of USD 40.15 million for the GEF alternative. In table 3 one can find the details of the expected financing of the incremental costs. GEF is expected to contribute to 18.3% of the incremental costs (USD 4.7 million), while the remaining 71.7% would come from co-financing sources, namely IFAD (USD 16.7 million), the Government of Kenya (USD 1.8 million) and the beneficiaries (USD 2.5 million). A summary MKEPP cost table by components is provided in attachment 1. In table 4 there is a summary of baseline and incremental costs by output

Table 4: Summary of baseline, incremental costs and total GEF alternative (USD million)

	Baseline	Incremental costs (MKEPP)					GEF alternative
		GEF	Co-financing			Total	
			IFAD	GoK	Benef.		
Water resource managem.	2.00	0.16	5.35	0.51	0.74	6.75	8.75
Environmental conserv.	7.90	2.74	4.37	0.34	0.29	7.78	15.64
Rural livelihoods	3.45	1.10	3.10	0.43	1.45	6.08	9.53
Community empowerment	1.00	-	1.64	0.08	0.04	1.77	2.77
Project management	-	0.70	2.28	0.45	-	3.43	3.43
TOTAL	14.35	4.70	16.74	1.82	2.51	25.80	40.12
		(18%)	(65%)	(7%)	(10%)	(100%)	

64. Below we briefly discuss them and highlight the expected domestic and global benefits. A summary of the incremental cost analysis, including the baseline and GEF alternative financing, as well as the expected domestic and global benefits, is in attachment 2 to this annex.

GEF Alternative - Output 1: Water Resource Management

65. The incremental costs for output 1 are USD 6.8 million, of which about USD 160,000 will be financed by GEF. These would add to a baseline of USD 2 million for a total GEF alternative of USD 8.8 million.

66. MKEPP will address the issue of uncoordinated and excessive upstream water abstraction and inefficient water use for irrigation and urban consumption, leading to declines in downstream flows and water availability, by: (a) improving the management of river basin and catchment areas through strengthening of capacity of the water departments, support to formation and capacity building of Water Users' Associations, participatory preparation of river catchment management plans, improvement of river intakes, awareness campaigns on water use and hygiene education; and (b) developing community-based water services mainly through rehabilitation and/or construction of infrastructure for efficient irrigation and domestic water supply. GEF would only finance the development of a Water Resource Management strategy and guidelines as well as decision support tools to strengthen KWS capacity to actively participate in Mount Kenya watershed management, given that water abstractions within protected areas have a direct impact on biodiversity conservation.

67. The main expected domestic benefits are in terms of improved efficiency, equitability and sustainability of water use and the consequent improvement of livelihoods of upstream and downstream communities depending on this resource for production and domestic purposes. A more sustainable use of Mount Kenya water resources and watershed is also expected to bring considerable global benefits in terms of conservation of the whole ecosystem.

GEF Alternative - Output 2: Environmental Conservation

68. The incremental costs for output 2 are USD 7.8 million, of which about USD 2.7 million will be financed GEF. These would add to a baseline of USD 7.9 million for a total GEF alternative of USD 15.7 million.

69. Under this output MKEPP will address environmental degradation and promote sustainable management of natural resources thereby reversing the land degradation process currently occurring in the area. This will be achieved through the improvement of natural resource conservation and management in both protected and non-protected areas. In non-protected areas, the activities will focus on community rehabilitation of degraded lands (trust lands, communal lands, reclaimed wetlands, river banks, road embankments, etc.) and the promotion of energy efficient technologies for charcoal production and use. These will be financed by IFAD contribution.

70. GEF would finance the activities related to natural resource conservation and management within protected areas (National Park and Reserve), which would absorb about 70% of the total GEF funding. Despite its genuine commitment to the conservation and protection of Mount Kenya National Park and Reserve, the GOK has limited resources to invest for this purpose. Biodiversity conservation does not rank high in GOK development priorities, whose efforts are primarily focusing on poverty alleviation. The limited resources available reduce the scope of the mandated institutions (KWS and FD) to take pro-active management actions, with a general lack of capacity to sustainably manage the NP&R as a valuable resource to the advantages of the local, national and international communities. Surrounding communities are marginally involved in the management of the resources and are mainly reduced to the role of users of protected areas on a paying basis for services such as fuel wood collection, beekeeping, etc.

71. GEF incremental financing is therefore needed in order to set up and support a framework for sustainable conservation and management of the Mount Kenya ecosystem. The main activities financed will be: (a) rehabilitation of degraded forests; (b) strengthening of the management capacity with the active involvement of all relevant stakeholders including the forest-adjacent communities; and (c) reinforcement of KWS for long-term ecological and biodiversity monitoring and research.

72. Several domestic and global benefits are expected from this output. The reduction of land degradation and soil erosion as a result of rehabilitation and conservation activities in both protected and non-protected areas will generate both a domestic benefit, through the positive impact on the overall agricultural productivity in the area and thus on the livelihoods of the rural communities, and global environmental benefits in terms of enhanced carbon sequestration/holding capacity of forest and non-forest areas, and reduced pollution of water ways and river siltation. Further global benefits are also expected in terms of conservation of globally significant biodiversity, in particular within the National Park and Reserve, as a result of the rehabilitation and protection of forest areas, the increased sustainability of biodiversity protection through a more effective participation of local communities (benefit sharing) and the strengthening of regulating institutions (KWS) and the improved capacity for biodiversity and natural resource long-term monitoring and planning within protected areas. Finally, increased revenue for KWS and increased and more equitably shared benefits from forest resources for surrounding communities are also some of the expected domestic benefits.

GEF Alternative - Output 3: Rural Livelihoods

73. The incremental costs for output 3 are USD 6.1 million, of which about USD 1.1 million from GEF. These would add to a baseline of USD 3.4 million for a total GEF alternative of USD 9.5 million.

74. Under this output MKEPP will: (a) support on-farm soil and water conservation activities to increase fertility and productivity of agricultural land; (b) promote off-farm income generating

activities to diversify the income sources of rural households; (c) improve the marketing of agricultural and forest products; and (d) reduce human/wildlife conflicts on land.

75. IFAD would finance activities under (a), (b) and (c), while GEF would finance the actions towards human/wildlife conflict resolution. These will include the establishment of wildlife barriers, the training and capacity building of communities for their long-term maintenance and a study for the planning of a long-term solution for wildlife migratory corridors.

76. Global benefits are expected from this component through the reduction in soil and water degradation and enhanced carbon sequestration/holding capacity and resolution of human/wildlife conflicts reducing loss of protected species, in particular elephants. The direct benefits of this output are of a domestic nature, namely in terms of the enhanced food security and reduced poverty at household level through sustainable increases of on-farm production and income (higher land productivity, higher agricultural yields through reduction of crop damage by wildlife and better market opportunities for agricultural products) as well as off-farm incomes. This will indirectly contribute to biodiversity conservation by reducing the human pressure on natural resources in protected and non-protected areas.

GEF Alternative - Output 4: Community Empowerment

77. The incremental costs for output 3 are USD 1.8 million, to which GEF is not expected to contribute. These would add to a baseline of USD 1.0 million for a total GEF alternative of USD 2.8 million.

78. MKEPP will promote community empowerment by: (a) strengthening the capacity of community based organisations, in particular for what concerns needs identification and prioritisation, design of solutions and project preparation as well as other relevant technical and managerial skills; and (b) strengthening of the technical capacity of district technical staff for a more effective and relevant service delivery to local communities, with particular emphasis on participatory tools for community development, community mobilisation and organisation, development, assessment and management of community project proposals, etc.

79. Although no GEF funding is expected to contribute to this output, GEF will finance specific community empowerment activities related to other outputs, such as the training and follow-up of communities engaged in pilot projects for forest management and rehabilitation and the support to communities eventually taking over the maintenance of wildlife barriers.

80. Benefits expected from this output are almost exclusively of a domestic nature: communities empowered for a more active participation in planning, implementation and monitoring of development activities and improved service delivery by local technical staff from district offices are likely to result in improved effectiveness of poverty reduction interventions. However, better organised and structured communities are also likely to be more effective and reliable partners in ecosystem management and biodiversity protection.

GEF Alternative - Output 5: Project Management

81. The incremental costs for output 5 are USD 3.4 million, of which about USD 0.7 million from GEF. No baseline is related to this output, so that the GEF alternative coincides with incremental costs of USD 3.4 million.

82. MKEPP will finance the establishment and functioning of a Project Management Unit. GEF financing is expected for institutional strengthening of KWS for implementation of activities in the National Park and Reserve as well as for monitoring and evaluation of project impacts on global environmental objectives.

Attachment 1: Incremental Costs (MKEPP) by Components

	(KSh Million)			(USD Million)			%	%
	Local	Foreign	Total	Local	Foreign	Total	For. Exch.	Base Costs
A. Water Resource Management								
1. River Basin Management	118.34	69.83	188.17	1.52	0.90	2.41	37	11
2. Community Water Development	160.63	104.01	264.64	2.06	1.33	3.39	39	15
Subtotal Water Resource Management	278.97	173.84	452.81	3.58	2.23	5.81	38	26
B. Environmental Conservation								
1. Community Natural Resource Management	273.34	71.15	344.49	3.50	0.91	4.42	21	19
2. Ecosystem Conservation and Management								
a. Forest rehabilitation	49.37	5.91	55.28	0.63	0.08	0.71	11	3
b. Ecosystem management capacity	45.24	57.01	102.25	0.58	0.73	1.31	56	6
c. Research, monitor. and inform. Managem.	27.88	12.85	40.73	0.36	0.16	0.52	32	2
Subtotal Ecosystem Conserv. and Managem.	122.49	75.76	198.25	1.57	0.97	2.54	38	11
Subtotal Environmental Conservation	395.83	146.91	542.74	5.07	1.88	6.96	27	31
C. Rural Livelihoods								
1. On-farm Soil and Water Conservation	88.72	37.94	126.66	1.14	0.49	1.62	30	7
2. Income Generation Activities	48.52	11.32	59.84	0.62	0.15	0.77	19	3
3. Marketing	71.28	42.96	114.24	0.91	0.55	1.46	38	6
4. Human/wildlife conflict resolution	64.14	45.20	109.34	0.82	0.58	1.40	41	6
Subtotal Rural Livelihoods	272.66	137.42	410.08	3.50	1.76	5.26	34	23
D. Community Empowerment								
1. Community Development	67.78	29.80	97.58	0.87	0.38	1.25	31	6
2. Strengthening District Technical Capacity	17.38	7.95	25.33	0.22	0.10	0.32	31	1
Subtotal Community Empowerment	85.15	37.75	122.91	1.09	0.48	1.58	31	7
E. Project Management	145.56	92.96	238.52	1.87	1.19	3.06	39	13
Total BASELINE COSTS	1,178.18	588.88	1,767.06	15.10	7.55	22.65	33	100
Physical Contingencies	24.85	19.59	44.43	0.32	0.25	0.57	44	3
Price Contingencies	159.72	41.35	201.06	2.05	0.53	2.58	21	11
Total PROJECT COSTS	1,362.74	649.81	2,012.55	17.47	8.33	25.80	32	114

Attachment 2: Incremental Costs, Domestic and Global Benefits

MKEPP Output/Component	Source of finance	US\$	MKEPP Output/Component	Source of finance
Water Resource Management	Baseline Incremental costs Co-financing GEF GEF alternative	2.00 6.75 6.59 0.16 ----- 8.75	<ul style="list-style-type: none"> Improved efficiency, equitability and community awareness of water use and consequent improvement of communities' livelihoods effective management and protection of Mt. Kenya watershed (NP&R), on which several millions of Kenyans depend for water Reduced pollution of water ways (siltage) 	<ul style="list-style-type: none"> Enhancement of Mt Kenya ecosystem services pertaining to watershed functioning and regulation of downstream flows.
Environmental Conservation	Baseline Incremental costs Co-financing GEF ----- GEF alternative	7.90 7.78 5.00 2.78 ----- 15.68	<ul style="list-style-type: none"> Reduction of land degradation and soil erosion in non-protected areas (agricultural lands, trust lands, communal lands, reclaimed wetlands, cultivated river banks and road embankments) and protected areas (forest). Savings in energy expenses Increased and more equitably shared benefits from forest resources for surrounding communities Increased revenue for KWS. 	<ul style="list-style-type: none"> Enhanced carbon sequestration/holding capacity and reduced greenhouse gas emissions through rehabilitation of degraded land in protected and non protected areas and promotion of on-farm agro forestry. Rehabilitation, protection and management of globally significant biodiversity (NPR) Enhancement and protection of carbon store through rehabilitation and conservation of forests Improved capacity for biodiversity and natural resource monitoring and planning within protected areas. Increased sustainability of biodiversity protection through strengthening of regulating institutions (KWS) and participation of local communities (benefit sharing). Enhanced GoK capacity to fulfil and report on global environmental commitments Continuous functioning of weather station for monitoring climate change
Rural Livelihoods	Baseline Incremental costs Co-financing GEF ----- 9.53	3.45 6.08 4.98 1.10 ----- 9.53	<ul style="list-style-type: none"> Improvement in food security and income and poverty reduction through: <ul style="list-style-type: none"> Increased productivity through 	<ul style="list-style-type: none"> Reduction in land degradation hence maintenance the Mt. Kenya Ecosystem Enhanced carbon sequestration/holding

MKEPP Output/Component	Source of finance	US\$	MKEPP Output/Component	Source of finance
	GEF alternative		better soil & water management - Creation of alternative IGAs - Better marketing of agricultural/forest products - Increased agricultural yields and income through reduction of crop damage by elephants	capacity, the agricultural and protected areas reduced greenhouse gas emissions through improved soil water conservation and sustainable agricultural practices. • Reduced human pressure on biodiversity in protected areas (National Reserve) • Reduced loss of protected species.
Community Empowerment	Baseline Incremental costs Co-financing GEF GEF alternative	1.00 1.77 1.77 - ----- 2.77	• Empowerment of communities for participation in planning, implementation and monitoring of development • Improved service delivery to local communities	•
Project Management	Baseline Incremental costs Co-financing GEF GEF alternative	- 3.43 2.73 0.70 ---- 3.43	• Effective management of MKEPP	• (Effective management of the MKEPP activities is functional to the realization of all the above mentioned global benefits)
SUMMARY OF PROJECT COST	Baseline Incremental costs Co-financing GEF GEF alternative	14.35 25.80 21.07 4.73 ----- 40.12		

ANNEX 2: Logical Framework*

Narrative Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MOV)	Assumptions
Development Goal To contribute to poverty reduction through more productive, equitable and sustainable use of natural resources through integrated ecosystem management.	<ul style="list-style-type: none"> Food security Household production and income 	<ul style="list-style-type: none"> Survey reports Welfare monitoring reports (every 3 years) Economic surveys (annual) Survey reports from stakeholders 	<ul style="list-style-type: none"> Intentions of the PRSP with regard to natural resources use realised Relevant legislation framework enacted and enforced
Integrated Project Environmental Objective Improved conservation, management and sustainable and equitable use of biological resources of Mount Kenya ecosystem by farmers and in the protected areas	<ul style="list-style-type: none"> Sustainable agricultural production increased by 25% on 25 000 ha of land for 50 000 household (260 000 people). Improved Biodiversity conservation and Integrated Ecosystem Management on 213 000 ha of land in the National Reserve and 1 000 ha in agricultural areas 	<ul style="list-style-type: none"> PMU and M&E reports Ground and aerial surveillance surveys FD/KWS/Community reports 	
Intermediate Purpose in Agricultural Areas Visible accelerating land degradation processes are reduced and equitable and sustainable use of natural resources is enhanced, with reduced menace from wildlife for people.	<ul style="list-style-type: none"> 15% reduction of soil erosion on 25 000 ha of land and 25% reduction of sediment load in rivers Ensured base water flow downstream during the dry season Number of animals/people killed or injured because of conflict reduced by 80 % 	<ul style="list-style-type: none"> PMU and M&E reports Annual reports from Government technical services DWO (Hydrology) reports River gauging records KWS incident reports 	<ul style="list-style-type: none"> Long-term water management capacity is sustainably improved Farmers adopt SWC measures on their plots Wildlife incursions into farmlands are prevented
Intermediate Purpose in National Park and Reserve (NP&R) Improved biodiversity conservation, more equitable and sustainable use of natural resources and enhanced overall management capacity with the involvement of stakeholders in National Park and Reserve	<ul style="list-style-type: none"> Forest integrity maintained and biodiversity protected on 3 800 ha of land Degree of community involvement and participation to conservation activities and benefits enhanced by 50 % in 72 Focal Development Areas target communities and with reference to human/wildlife conflict resolution, selected 2 160 community members representing households** involved directly in human/wildlife conflict resolution along the 397 km stretch targeted for the establishment of wildlife barriers 	<ul style="list-style-type: none"> PMU and M&E reports Ground and aerial surveillance surveys FD/KWS/Community reports 	<ul style="list-style-type: none"> Improved rural livelihoods reduce human threats to NP&R Mandates of KWS and FD on Mt. Kenya ecosystem management are clarified and enforced

* This logical framework shows the development goal, environmental objective, intermediate purposes, outputs and activities of the MKEPP. GEF financed activities are shown in italics in the Activity Section

** There are an estimated 42 groups to be formed for human/wildlife conflict resolution covering the 397 km stretch that require the barriers. Each group comprises 50 persons, one person/household.

Narrative Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MOV)	Assumptions
Outputs (Components)			
1 Water Resource Management 1.1 Water use efficiency enhanced through: 1.1.1 Improvement of river basin management 1.1.2 More efficient water systems at community level	1.1.1 More water storage in upper catchments and better water management with stable or increasing flows downstream during the dry season 1.1.2 Functioning and regularly updated water resources database 1.1.3 Approved water abstractions in NP&R in line with hydrological assessments	1.1.1 DWO (Hydrology) reports 1.1.2 Water resources plan 1.1.3 River gauging records	1.1.1 Community-based water management through RUAs is effective 1.1.2 Rainfall continues to remain constant
2 Environmental Conservation 1.1 Natural resource management and biodiversity conservation improved through: 2.1.1 Rehabilitation and community management in non-protected areas 2.1.2 Forest rehabilitation in protected areas 2.1.3 Stabilisation of road embankments 2.1.4 Improved ecosystem management capacity by all stakeholders 2.1.5 Improved capacity of KWS for research, monitoring and information management	2.1.1 Surface of non-protected areas sustainably rehabilitated 2.1.2 Canopy cover and distribution of forests 2.1.3 Frequency and impact of disturbances in protected areas 2.1.4 Reduced human/wildlife conflicts 2.1.5 Kms of road embankments planted 2.1.6 Equitable benefits to communities 2.1.7 Time spent on proactive rather than reactive activities 2.1.8 M&E and other data/information coordinated, collated, disseminated and used for effective management	2.1.1 Ground survey and satellite mapping 2.1.2 Participatory field surveys 2.1.3 KWS work plans and budgets and periodical reports 2.1.4 PMU reports 2.1.5 KWS research station scientists' reports 2.1.6 FD/KWS/NGO/Community	2.1.1 Absence of extreme climatic or fire events 2.1.2 Policy supporting community involvement in forest management is maintained 2.1.3 KWS research station continues to receive GOK support 2.1.4 Road embankments are protected
3 Rural Livelihoods 3.1. Livelihoods of rural communities improved through: 3.1.1 Better on-farm soil and water management 3.1.2 Development of off-farm income generating activities (IGAs) 3.1.3 Improved marketing of agricultural products 3.1.4 Reduction of human/wildlife conflict over land	3.1.1 Increased crop yields, soil nutrients and fertility 3.1.2 No and types of materials, No of groups reached 3.1.3 Farm and off-farm IGAs promoted, in reduced and reduced livestock mortality 3.1.4 Increased household incomes due to processing of farm produce at farm level 3.1.5 Frequency and impact of animal incursions into farmlands 3.1.6 Reduction in number of animals/people killed or injured because of conflict	3.1.1 KARI, DALEO reports 3.1.2 DWO (Hydrology) reports 3.1.3 DECO/DFO reports 3.1.4 Surveys (DSDO, PMU) 3.1.5 KWS incident reports 3.1.6 KWS monitoring of wildlife populations 3.1.7 Community verbal reports	3.1.1 Farming communities and individual farmers increase their SWC measures 3.1.2 Economic environment in Kenya is favourable 3.1.3 Markets for smallholder products operate efficiently 3.1.4 Wildlife incursions into farmlands are prevented

Narrative Summary	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumptions
4. Community Empowerment 4.1. Local level governance capacity improved through: 4.1.1 Establishment/strengthening of CBOs, NGOs, County Councils and other grassroots organisations 4.1.2 Strengthening of GOK district technical services for service delivery to communities	4.1.1 Increased number of functional grassroots organisations 4.1.2 Improved service delivery	4.1.1 DSDO, DDO reports 4.1.2 DWO reports 4.1.3 PMU and M&E reports	4.1.1 CBOs and councils understand negative impact of current resource use and encourage appropriate human behaviour 4.1.2 Government services work closely with local communities
5 Project Management 5.1.1 Effective implementation and management of project activities	5.1.1 PMU established and actually managing activities in agricultural areas 5.1.2 KWS strengthened and actually managing activities in protected areas (NP&R)	5.1.1 PMU reports 5.1.2 KWS reports (including staff numbers and community activities)	5.1.1 PMU is able to coordinate District techn. serv. for water management/SWC activities 5.1.2 Financial flows are timely 5.1.3 KWS in Mt. Kenya NP&R is strengthened by additional recruitment

Narrative Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MOV)
Activities		
1. Water Resource Management 1. River basin management 1.1.1 Develop sub-basin water management plans 1.1.2 Improve river intakes 1.1.3 Support water resources data management activities 1.1.4 Strengthen capacity of MOWRD for monitoring water abstractions 1.1.5 Develop and adopt strategy, guidelines and decision support tools for enhancing KWS participation in permit approval process 1.1.6 Community water development 1.1.7 Rehabilitate/construct community based water efficient systems (domestic use and irrigation)	1.1.1. 7 Sub-basin management plans; 40% by mid-term the rest by PY7 1.1.2. 25% of river intakes improved by PY2, 25% by mid-term and the rest by project end 1.1.3. 47 RGS established, 19 rehabilitated, 1 bacteriology Analysis System and 15 chemical field water testing kits, No. of office/ field equipment, by PY2 1.1.4. 15 Technical staff trained, Equipment supplied by PY2. 1.1.5. A Guidelines document outlining the procedures and conditions to be met for issuance of water permits by mid-term. 1.1.6. All new abstractions/reservoirs effectively controlled by KWS (about 4/dist/year) 50% of abstractions old water schemes regularised by mid-term. 1.1.7. 463 projects on community based water efficient systems developed 1 000 Ha irrigation (10 schemes), 45 spring development, 35 small gravity flow, 32 small dam/pan, 70 shallow wells, and 286 roof top water harvesting 40% by PY3, 80% by PY6 and the rest by project end.	1.1.1 Training reports, inventory 1.1.2 Field visits/measurements Documents 1.1.3 Progress reports
2. Environmental Conservation 2.1 Community natural resource management 2.1.1 Promote on-farm agro-forestry and off-farm/trust land re-forestation/stabilisation, and roadside erosion control 2.1.2 Support protection of natural wetlands and assess feasibility of constructed wetlands 2.1.3 Promote energy efficient technologies for charcoal production and use 2.1.4 Forest rehabilitation 2.1.5 Replant and protect selected degraded forest areas 2.1.6 Improve and rehabilitate forest transport infrastructure (roads and bridges) 2.1.7 Ecosystem management capacity 2.1.8 Promote participatory forest management through pilot projects and retraining of KWS/FD staff on participatory methodologies 2.1.9 Support preparation of forest operational management plans 2.1.10 Elaborate and implement an eco-tourism development plan 2.1.11 Set up fire control units and fire towers 2.1.12 Institutional strengthening of KWS 2.1.13 Research, monitoring and information management 2.1.14 Strengthen Mweiga Research Station for long term monitoring and research 2.1.15 Set up research outpost in NP headquarters	2.1.1. 1 000 Ha afforested, 500 trees/Ha 90% seedling survival about 2,500 farmers to be involved, 250 Ha by PY3, 400 PY4 & PY5 and the rest by project end. 2.1.2. 100kms of roadside embankments planted, 10 Km/ year from PY1-PY4, 15Km/year PY5-PY7. 2.1.3. 1 260 farmers trained in wetland protection through 42 training sessions 6 sessions/year from PY1-PY7. 2.1.4. 2 800 Ha, (1 950 Indigenous, 850 Plantation) Forest area replanted by type and survival percent. 10% by PY1, 35% PY2 and the rest by project end 2.1.5. 5 bridges and 17.5Km of roads rehabilitated, 2 bridges 8 Km by PY2 and the rest by PY4 2.1.6. 2 forests Hombe and Irangi to be managed by communities, to begin in PY2 2.1.7. 6 operational forest management with full involvement of communities in forest management and net benefits generated. 2/year for the from PY1-PY3. 2.1.8. 30% increase in tourists and revenue collection (from current levels of 14 000 visitors to 2.1.9 18 000 and USD 700 000 to USD 900 000 respectively by project end. 2.1.9. 50% reduction of forest area burned annually by PY2 80% reduction in frequency and impact of illegal forest by project end 2.1.10. Development of Tourism plan for the National Park by PY2. 2.1.11. Improve fire fighting capacity of KWS/FD; 6 fire towers constructed, 8 water browsers, 30 water pumps, 24 power saws acquired by PY2 2.1.12. Upgrade Radio communication system in the NP, supply electricity to the national park and Sirimon Gate, purchase 3 mountain rescue kits and 1 ambulance by PY 1 2.1.13. train 48 rangers, train 3 accountants by PY2 2.1.14. rehabilitate 20 outposts, construct 1 ranger barrack, 2 dog kennels, Rehabilitation Mweiga Research station; 2 GIS systems, computers and other necessary equipment, establish 1 Research Outpost in Mt. Kenya by PY3.	2.1.1 DALEO, PMU, Progress/Annual reports; Field visits; Aerial and land surveys 2.1.2 Participatory monitoring of planted areas 2.1.3 Progress reports from implementers 2.1.4 Socio-economic surveys and FD/KWS/NGO/Community reports 2.1.5 FD/KWS reports 2.1.6 Mt. Kenya National Park tourist records 2.1.7 Aerial surveillance surveys and FD/KWS/Community occurrence reports 2.1.8 KWS HQ and KWS Research Station progress reports

Narrative Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MOV)
Activities		
3 Rural Livelihoods 3.1 On-farm soil and water management 3.1.1 Promote on-farm soil and water conservation measures to increase fertility and productivity of agricultural land 3.1.2 Enhance agricultural technology dissemination and up scaling 3.2 Off-farm IGAs 3.2.1 Support processing of natural resources and agricultural products (honey, vegetables, milk etc.) 3.2.2 Support promotion of small livestock keeping (dairy goats, poultry, sheep, rabbits etc.) 3.2.3 Promote sustainable preventive and curative systems for livestock and livestock breed improvement Marketing 3.2.4 Enhance access to marketing and price information by target groups 3.2.5 Carry out spot rehabilitation of selected access roads 3.3 Human/wildlife conflict resolution 3.3.1 Establishment of wildlife barriers 3.3.2 Capacity building of local communities for barriers maintenance 3.3.3 Development of a long-term strategy for the elephant migratory corridors	3.1.1. 5 000 farmers members of 168 FFS involved in S&WC, No. of structures, 40% FFS by PY3 and 60% by PY5. 3.1.2. 1 320 farmers adopting/adapting technologies,20% increase in acreage and yields, change in cropping pattern by mid-term 3.1.3. 1 320 farmers/ groups involved in processing (60% women and youth) by mid-term. 3.1.4. 2 400 farmers supported and 200 bucks bought and distributed by mid-term 3.1.5. 72 community animal health workers and community artificial insemination assistants trained by PY2 3.1.6. 200 cows inseminated in PY3 and this increasing to 600/year by PY4 30% increase in livestock productivity and 50% reduction in calf mortality by PY5. 3.1.7. 2 400 farmers trained in marketing by PY 4 3.1.8. 100 km of roads rehabilitated (km) by project end 3.1.9. 397 km of barriers established 100km by PY2 and the rest by project end 3.1.10. 397km of barriers operational 3 years after establishment 3.1.11. Training farmers on the maintenance of barriers 42 Community groups (2 160 persons)each group to hold, 6 training sessions in PY1, 4 in PY2, 2 in PY3 3.1.12. One strategy document on elephant migratory corridors by PY2	3.1.1 DALEO, PMU Reports 3.1.2 Field visits 3.1.3 DALEO,KARI, PMU Reports 3.1.4 Field visits 3.1.5 Records 3.1.6 Field visits 3.1.7 DALEO, DSDO, DWO, DLPO, DVO reports 3.1.8 KWS quarterly, semi-annual and annual reports, community reports and PMU periodical surveys 3.1.9 Strategy document
4. Community Empowerment 4.1. Grassroots associations and groups 4.1.1. Conduct a socio-economic baseline survey 4.1.2. Mobilise communities 4.1.3. Support formation of specific functional groups and associations (eg water user associations and marketing groups) 4.1.4. District technical services 4.1.5. Train frontline staff on participatory methodologies, gender, etc.	4.1.1Baseline surveys for 7 sub-basins by PY2 4.1.25 040 farmers trained in 168 community meetings and attendance by mid-term 4.1.372 functional groups formed and operational by mid-term 4.1.4550 training sessions for 13 RUAS, 6 representatives/WUA, 288 sessions for the WUAs, 5 040 farmers FFS members, 72 CBO, 58 IGAs Groups(1 640 farmers) and 25 front line staff trained 40% training by PY3, 60% by PY4 and the rest by PY5	4.1.1 Survey reports 4.1.2 Minutes of meetings 4.1.3 Progress reports (Constitution, registration certificates, returns/renewals) 4.1.4 Training reports
5. Project Management 5.1.1. Establish PMU 5.1.2. Strengthen KWS for implementation of activities in the National Reserve (GEF) as well as for monitoring and evaluation of impacts on global environmental objectives	5.1.1Effective implementation of IFAD-Funded activities by PY1 5.1.2Effective implementation of GEF-Funded activities by PY1	5.1.1 PMU reports 5.1.2 KWS reports

ANNEX C: STAP ROSTER REVIEW - MT. KENYA EAST PILOT PROJECT FOR NATURAL RESOURCE MANAGEMENT

SCIENTIFIC AND TECHNICAL REVIEW OF THE PROJECT PROPOSAL

1. INTRODUCTION

This Report follows the standard Terms of Reference for STAP reviews. This review focuses primarily on the requested GEF assistance component, which amounts to 17.8% (US\$4.73 million) of total project costs. This component is broadly to support environmental conservation through addressing:

- (a) tools for watershed development within the protected areas
- (b) ecosystem conservation and management, especially of forests
- (c) human/wildlife conflicts
- (d) Kenya Wildlife Service support, especially M&E of project impacts.

The developmental aspects of the proposal are also relevant because they have an emphasis on water resource management, community natural resource management, rural livelihoods, and community empowerment. These are essential activities to underpin the success of the measures to promote environmental conservation.

The GEF funding is therefore requested to provide catalytic or incremental assistance to assure the safe and environmentally-sustainable development of the Mount Kenya eco-zone, an internationally important area for biodiversity of mountains and tropical forests and a source of considerable sediment and land degradation that affects adjacent areas. To a considerable degree, incremental GEF funding for environmental conservation activities is to be based operationally on cost sharing.

While the Brief is well presented, there are some matters requiring the attention of an editor. Repetitions could be reduced; some inconsistencies between the text and the logical framework addressed; some typographical errors⁴; and some departures from the standard GEF headings⁵

2. KEY ISSUES

D)

E) SCIENTIFIC AND TECHNICAL SOUNDNESS OF THE PROJECT

The Mount Kenya East Pilot Project for Natural Resource Management (MKEPP) is designed as a joint IFAD, Government of Kenya and GEF initiative to address the substantial threats to the unique ecosystems of Mount Kenya. It is good to have this high-level national and international level stakeholder involvement.

Mount Kenya itself is a protected area, containing four distinct eco-zones, each with its own distinctive flora and fauna. Interactions between these eco-zones are vital to the biodiversity, ecosystem functioning and ecosystem services of the whole wider area, especially of the land

⁴ There are some typographical errors and undue reliance is placed on spell-checkers. 'Principle' is mis-spelt as 'principal' in at least two places; 'sue' instead of 'use' in para 90; etc. There are a few incorrect statements, such as the relevant OP for Integrated Ecosystems Management (No.15) in para 131.

⁵ The GEF Programming Context and Rationale for GEF funding are, for example, hidden in other sections.

use systems surrounding the national park and wildlife reserve. A project here, in an area containing so much wild and managed biodiversity, is to be warmly commended. The project's attention to the various eco-zones, its integration of managed and wild biodiversity, and its attention to rural livelihoods are welcomed.

There has been a long history (over 70 years) of protection for Mount Kenya, but it is only relatively recently (2000) that full protected status as a National Reserve has been granted under the direction of KWS. The Project Brief brings out well in Annex 5 the threats to the National Reserve brought about by pressure from adjacent areas of land use – illegal logging, poaching of wildlife, *shamba* (shifting cultivation) systems, fires and human-wildlife conflicts. It is an opportune time now in the development of environmental thinking and legislation to have a pilot project such as this in Kenya.

The Brief stresses the links between poverty and environmental degradation, both in the main part (Baseline Conditions, paras 37-40) and Annex 5. However, the analysis is almost wholly technical and most of the processes of degradation (Table 2, Annex 5) are about *immediate* or *proximate* causes and impacts. The conceptual logic for the project (Figure 1, Annex 9) uses the DPSIR framework – which is good as it links well to other GEF-funded initiatives – but without explicit drivers that are social and political. It could be argued that to ignore these *intermediate* causes and drivers of change would be to invite failure to achieve project objectives over the medium to longer term. The Brief should give due weight to the key political ecology aspects that can make or break a project that will affect many stakeholders with conflicting objectives and different livelihood needs. [Strengthening in main Brief, Annex 5 and Annex 9]

To illustrate, there are important and current issues of governance in Kenya, which are debated openly at high level nationally⁶ and internationally⁷. Principal stakeholders, including GoK, recognise that social and political solutions have to be factored alongside the ecological and technical. For issues of governance, these should be explicitly addressed as drivers of degradation but also as issues that should be taken up by local and technically-based stakeholders such as KWS. Governance and institutions feature only in one paragraph of the main Brief (#39), in the context of greater involvement of communities, and a change from regulation to participation. Illegal and unregulated activities (paras 21-22, Annex 5) occur because of institutional failure. The authors of the Brief are encouraged to reflect upon the political ecological aspects of Kenya in Akama *et al* (1996).⁸ An examination of the case study of the Green Belt Movement of Kenya by UNRISD⁹ would also be instructive. Its thesis is that environmental movements in Africa operate within a transformative logic in which struggles for power over environmental resources connect broader social struggles for popular empowerment and democracy.

⁶ See UNDP, Kenya - <http://www.ke.undp.org/democratic%20Governance.htm>

⁷ E.g. World Resources Institute - http://earthtrends.wri.org/pdf_library/country_profiles/Env_cou_404.pdf

⁸ John S. Akama, Christopher L. Lant and G. Wesley Burnett (1996). A Political-Ecology Approach to Wildlife Conservation in Kenya. *Environmental Values* 5: 335-347.

⁹ Cyril Obi (2002) *Environmental Movements in Sub-Saharan Africa: A Political Ecology of Power and Conflict*. Paper prepared for the World Summit on Sustainable Development, Johannesburg. United Nations Research Institute for Social Development, Geneva, 27 pp. Available at: <http://www.unrisd.org>

The project has five Outputs (paras 92-119; Annex 2, Logical Framework)¹⁰. These are:

1. Water resource management (1.3% GEF funded)
2. Environmental conservation (54.9% GEF funded)
3. Rural livelihoods (21.7%)
4. Community empowerment/local governance (zero GEF funded)
5. Project Management/implementation of Activities (10%)

These adequately cover the range of activities that will be needed to address integrated ecosystem management, and it is welcome to note that the balance in outputs tends not to reflect the technical bias in the text of the Brief itself (see above point for action). This reviewer is pleased to note the quantitative targets in GEF-financed and non-financed Activity OVIs for Outputs 1 to 4 (e.g. 72 community animal health workers; one strategy document on elephant migratory corridors; etc.). This strengthens the Logical Framework as well as giving guidance to the management of the whole project – but see Output 5 below.

Substantial attention in Outputs 4 and 5, which are ‘developmental’ components, will go towards supporting local community structures, though under ‘Activities’ Outputs 4 and 5 appear rather ‘thin’. This reviewer recommends that Output 4 ‘community empowerment’ is more than just ‘mobilisation’. How will the community groups be strengthened, for example? Resources? Visits to other groups? Education and training in community groups? It is recognised that Output 4 activities will be almost wholly funded from sources other than GEF, but the Brief makes the key point that support for local capacity in NRM (especially forest management and wildlife-human conflict resolution) is fundamental to environmental conservation as a whole. Similarly, Output 5 the ‘implementation of project activities’ may deserve more elaboration than simply setting up a project management unit and ‘strengthening’ KWS¹¹. It is also the only Output not to have quantity-based OVIs. The current OVI uses the vague term ‘effective implementation’. Who determines effectiveness and how?

This reviewer would have liked to see some economic rationale for the structures, institutions and measures to be developed. This relates partly to ‘sustainability’ – see below – but also to justifying the expenditure over 7 years of considerable resources on what still is intended to be a pilot project. There are some obvious synergies between Outputs that the Brief could have explored. For example, increasing livelihoods from the Baseline may enable stronger local institutions. However, the Brief is largely silent on what may be achieved economically and whether such additional monies that may be generated could ensure continuation after the end of the project.

Identification of the global environmental benefits and/or drawbacks of the project

Identifying the incremental benefits for OP12 integrated ecosystem management projects is an inexact science. Annex 1 attempts a most useful and pleasingly detailed incremental cost analysis. The Broad Developmental Goals are admirably rooted in Kenya’s PRSP (2001) and Economic Recovery Strategy (2003). While the Mount Kenya eco-zone is relatively small in extent, its importance in developmental terms is magnified by the high population

¹⁰ But note that the logical framework and brief text do not exactly correspond in Output titles – this should be harmonised.

¹¹ In strengthening KWS, the Brief repeats the same activity at Output 2 (#2.1.5) as at Output 5 (OVI#5.1.2). This needs rationalisation preferably by concentrating all these activities in Output 5 in a rather more detailed set of logical steps.

and good quality of natural resources. This well sets the scene for a convincing incremental cost assessment.

The Baseline is built on the current situations of poverty, demographic pressures, poor institutions and climate change, with specific drivers drawn from many of the illegal and unsustainable practices (e.g. *shamba* system) that are all too evident in the area. The GEF (global) alternatives are well described in Annex 1 against each Output. Taking the main Output for GEF funding (Output 2), seven global benefit items are identified ranging from carbon storage to enhanced capacity to report on global environmental commitments. As with most OP12 and OP15 projects, the arguments for the domestic benefits are somewhat more compelling and evidence-based. Nevertheless, within the guidance parameters for building a global environmental benefit justification, the authors of this project have managed to build a satisfactory case, albeit on little solid evidence. There are, however, a few strange assignments in the incremental cost matrix in Annex 1. It is difficult to understand how or why a “better organised and structured community” is a global benefit. Why are reduced loss of elephants a ‘rural livelihood’ global benefit? This matrix does need re-examination and the assignment of benefits a closer examination

F) HOW THE PROJECT FITS WITHIN THE CONTEXT OF THE GOALS OF GEF

The project has excellent *potential* to support the goals of the GEF. However, the case is not made strongly enough to justify GEF funding.

The proposal implicitly supports the Operational Program 12 *Integrated Ecosystem Management*. The project sensibly fits the overall program objective: “catalyzing widespread adoption of comprehensive ecosystem management interventions that integrate ecological, economic and social goals to achieve multiple and cross-cutting local, national and global benefits.” It meets the OP12 objective through two of the four conditions in OP12 (para 11): (a) conservation and sustainable use of biodiversity; and (d) conservation and sustainable use of water bodies. This reviewer would have found it helpful if, instead of burying the rationale for GEF financing in paras 83-86 of Section III of the Brief, the rationale is more explicitly drawn and links made to OP12 (and OP3, 4 and 15). With the widened GEF mandate to include developmental aspects as part (albeit co-financed) of projects, the links to food security, livelihoods and well being are consistent with priorities. The link to poor rural land users is perhaps less well made, especially as reduction of poverty is a NEPAD priority.

OP12 was designed by GEF to be multi-focal, which in the context of Mt Kenya means that there must be global benefits related to biodiversity and climate change. The IA informs this reviewer that this has been discussed between UNEP and IFAD, but the attention to global benefits remains somewhat tenuous in the present Brief. The biodiversity case is self-evident, although there could and should be a monitoring programme to evaluate the impact of the project; however, there is very little on climate change indicators such as carbon storage or increase in biomass. A good case could be made that project activities will sequester substantially more carbon. Not only will control of the *shamba* system increase biomass in the eco-zone but attention to sustainable forestry, agroforestry and more productive land uses, preferably based upon organic amendments, will increase soil organic carbon. The soils of the Mt Kenya region have been depleted of much organic matter under current land uses, and this indicator itself could be used to show a very substantial global benefit of the project. Already in Western Kenya, there are smallholder carbon projects that

could provide a model for activities with communities around Mount Kenya.¹² The project and its EA institutions can well support a simple monitoring of global benefits, and this would be best located in Output 5 as part of the PMU responsibilities.

Two suggestions are made to improve the link to global benefits:

(1) A paragraph should be inserted under 'Global Importance' with a sub-heading, as follows:

Carbon sequestration. The forests on Mt. Kenya provide important sinks for carbon. Sustainable management of the forest and surrounding agricultural lands will enhance sequestration of carbon both above and below ground and hence contribute to reduction of greenhouse gas emissions from the ecosystems on Mt. Kenya.

(2) Project activities for monitoring biodiversity (by KWS and/or KEFRI) and carbon storage (by the PMU, possibly, or contracted out to KARI) be included under the Activity sets for Outputs 2 and 5. Project Management (Output 5) does need better specification. A monitoring component for both global and domestic benefits would assist this elaboration.

The project engages well with the two relevant global conventions. Under the CBD it addresses the conservation status of threatened biodiversity, as well as having some measure of agricultural biodiversity on surrounding land uses. The CBD provides for the conservation of biological diversity and the sustainable use of its components, both of which are objectives of this project.¹³ The MKEPP is, however, less forthcoming on the third CBD objective: the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. This could usefully be strengthened as it will be a key aspect of the sustainability of the project.

Under the UNCCD, the project meets several of the objectives: viz, adopting an integrated approach addressing the physical, biological and socio-economic aspects of the processes of desertification and drought; integration of strategies for poverty eradication into efforts to combat desertification and mitigate the effects of drought; and the promotion of the use of existing bilateral and multilateral financial mechanisms and arrangements that mobilize and channel substantial financial resources to affected developing country Parties in combating desertification and mitigating the effects of drought.¹⁴

G)

H) REGIONAL CONTEXT

The Mount Kenya eco-zone is in many ways unique. The mountain itself is iconic regionally and is a magnet for tourists and local people alike. However, its hillside, steep-slope environments and farming systems are similar to others in East Africa. The Aberdares are relatively close to Mount Kenya and have similar challenges. More widely, the Eastern Arc chain of mountains in northern Tanzania (Usambaras, Pare, Kilimanjaro, Mt Meru, Ngorongoro Highlands) entertain many of the same problematic issues as Mount Kenya. This mountain chain is a series of more-or-less isolated mountains like Mt Kenya, which have been heavily covered by forests. Much of the original forests, especially at the more accessible or lower elevations, have been converted for agricultural crops. These mountains are recognized as one of 24 globally important "hot spots" for forest biodiversity according to Conservation International. These mountains also serve as water catchments for urban

¹² See Forum for Organic Resource Management and Agricultural Technologies, which works in Kakemega under the World Bank Biocarbon Fund - http://www.formatkenya.org/CARBON_MEETING.htm

¹³ CBD – see <http://www.biodiv.org/convention/articles.asp>

¹⁴ UNCCD – see <http://www.unccd.int/convention/text/convention.php?annexNo=-2>

areas. There is opportunity here for the experiences and lessons on Mt Kenya to be up-scaled to other mountain regions in Africa. Given the emphasis in GEF on regional impacts and up-scaling more widely than national boundaries, it would seem that an opportunity to establish wider regional impact has been lost. The proposers are urged to consider the possibilities of this, maybe under the auspices of ASARECA, based at Entebbe, for agricultural research activities and IUCN Regional Office Nairobi for conservation activities. Also ICRAF's Eco-Regional project at Kabale (African Highlands Initiative) could be specifically invited as a partner with substantial experience of working in similar environments.

Replicability of the project

The project is intended to be a 'pilot' for the eastern side of Mount Kenya. It is not entirely clear from the Brief the precise boundaries to be taken. The Second Map at Annex 4 seems to imply the whole national park will be taken, while Map 1 identifies some key districts such as Embu, Meru, Tharaka. Nanyuki and Nyeri are not included, although they too contain high density populations and substantial threats to the integrity of the Mt Kenya eco-zone. In that the MKEPP will strengthen local institutions and KWS, a measure of replicability has already been structured into this pilot. This is an aspect that will need to be monitored and evaluated as the project progresses.

I) SUSTAINABILITY OF THE PROJECT

The proposal states that the project's main claim to sustainability is through the participation it will engender and a research outpost built for KWS in the Mt Kenya ecosystem (paras 124-127). Participation cannot by itself ensure sustainability, especially as it is the project itself that will 'mobilise community participation'. Sustainability needs to be built upon the institutions the project will foster, both local and national, and the economic and institutional drivers for continuation. The Brief mentions the increase in revenues for tourism and forest-related activities, but there is no mention of *where* those revenues will go. The answer is presumably to central government funds. Mention is also made of increased productivity of land use activities – but again how these will then relate to project sustainability is not explicitly addressed.

This reviewer would like the project explicitly to address sustainability question such as:

1. What are the long-term vision and goals for the project and its partners?
2. What written commitments has the project obtained about continuation?
3. What contingency plans are there for key personnel and partnership changes?
4. What plans are there for incorporating the project within the institution (including dates and administrator written commitments)?
5. What plans are there for additional funding and support for the project beyond the time of the original grant?
6. What project promotion and marketing plan is there for raising awareness of the project and updating and disseminating its products?

It is recognised that only some of the questions might be answerable at this stage. However, during the appraisal phase of the project and as part of initial project activities – and certainly as part of Output 5 – sustainability questions will need to be answered.

J) 3. SECONDARY ISSUES

Linkages to other focal areas

The project is multi-focal. There is good attention to aspects of integration of biodiversity and land degradation issues, as well as some inclusion of climate change. But see the discussion above about improving the OP12 multi-focal requirements for linkage to biodiversity and climate change.

Linkages to other programmes and action plans at regional or sub-regional levels

The proposal has good **national** linkages through the Ministry of Water Development, Ministry of Environment and Natural Resources, Ministry of Tourism and Wildlife, Kenya Wildlife Service, Forest Department, Kenya Forest Research Institute, and Kenya Agricultural Research Institute. Some **regional** linkages can be built around UNEP networks, while IFAD will have its action plans at regional scale. However, the proposal is reticent in not making any explicit statements of its linkages outside Kenya.

Other beneficial or damaging environmental effects

The project is fundamentally 'environmental', seeking to build a sustainable basis for using ecosystems and protecting national biodiversity assets. No other beneficial or damaging environmental effects are noted.

Degree of involvement of stakeholders in the project

GEF attaches the greatest importance to stakeholder involvement. The proposed project is closely linked to relevant stakeholders at national level. The primary stakeholders in local communities are specifically identified as a target for benefits, while government agencies are the main beneficiaries of capacity building. The project brings together the key agencies in data collection and management (cf Table 2, para 134, Implementation responsibilities). This reviewer is impressed by the attention to stakeholder involvement, and the concentration of effort in the proposal to embrace a wide range of institutions.

Capacity-building aspects

Output 5 is for institutional strengthening of key public services, most notably a Project Management Unit and support for KWS. The project is intended to develop planning capacities in the key ministries (MWRD and MENR), through a range of implementation activities. Training is not specifically addressed. It is not clear quite how the proposers see capacity as actually being built in order to ensure skills in integrated ecosystems management.

Innovativeness of the project

The innovation of this project primarily arises from its integrated focus between conservation and development objectives, with appropriate funding support in place from donors such as IFAD and commitment from GoK. This reviewer believes strongly that this is the right way to proceed, especially in the context of an eco-zone with a high density of population, great pressure on natural resources and the obvious need to meet the aspirations of a human population that perceive wildlife conservation as a denial of the most productive land. As a 'pilot', the project must build a substantial book of lessons and experiences to apply to the rest of the Mount Kenya eco-zone and to similar mountain environments.

K) 4. CONCLUSIONS AND SUMMARY RECOMMENDATIONS

The project has a sound scientific and technical basis. It is well written, contains sound argumentation and has objectives that are sensible and rational. There is good evidence that

the project offers good long-term solutions for integrated ecosystem management around one of the most important sites for sub-Saharan African biodiversity. Suggestions for enhancing the proposal technically, for minimising the risk of failure of some of the interventions and for building wider applicability are made below.

This STAP review commends the project to the GEF as an appropriate use of funds entrusted and an eminently suitable vehicle to drive forward integrated ecosystem management through sustainable land management and conservation of biodiversity of mountain and forest ecosystems in East Africa.

Summary Recommendations on Points that Could be Strengthened

1. *General points.* The Brief requires the attention of an editor in the following respects: repetitions; some inconsistencies between the text and the logical framework; typographical errors; and some departures from the standard GEF headings

2. *Scientific and technical soundness of the project.* .

- address the political ecological aspects of the analysis of causes and impacts of environmental degradation. Suggested inclusion and strengthening of Baseline Current situation in main Brief (#39 onwards), and Annex 5
- highlight some of the *intermediate* drivers of change, including governance and institutions.
- Project outputs: logical framework (Annex 2) and Brief text (paras 92-119) do not correspond in Output titles – Outputs need to be harmonised in descriptors.
- Output 5 deserves more elaboration than simply setting up a project management unit and ‘strengthening’ KWS. It is also the only Output not to have quantity-based OVIs. The current OVI uses the vague term ‘effective implementation’. Who determines effectiveness and how?

3. *Identification of the global environmental benefits.* The proposers are urged to strengthen and rationalise the link to global benefits rather more carefully and systematically:

- Annex 1 matrix needs re-examination, especially on the assignment of benefits, between Outputs and between global and domestic

L) 4. FIT WITHIN THE CONTEXT OF THE GOALS OF GEF

- an additional paragraph should be inserted in the main brief on climate change global benefits
- project activities, probably under Output 5, should include a monitoring programme for both biodiversity and climate change global benefits, using standard indicators such as carbon storage increase
- the project could usefully build in the third CBD objective much more directly – the fair and equitable sharing of benefits of biodiversity

5. *Regional context and replicability of the project.* The proposers are asked to think about the application of project lessons more widely to other parts of the region

M) 6. SUSTAINABILITY OF THE PROJECT. THE PROJECT SHOULD EXPLICITLY ADDRESS KEY SUSTAINABILITY QUESTIONS (PARAS 124+) AND NOT JUST ASSUME THAT ‘PARTICIPATION’ WILL ENSURE CONTINUATION.

7. *Secondary Issues*. Some clarifications and elaborations requested – see Section 3 above.

Professor Michael Stocking
STAP Roster Expert (Land Degradation)
University of East Anglia, Norwich UK
9th August 2004

IA and EA Response to the STAP Technical Review

IFAD and UNEP thank the STAP Reviewer for the useful and valuable suggestions made for strengthening the GEF Project Brief, which have provided a basis for careful review, editing and the introduction of some material from IFAD's Appraisal Report into the GEF Brief. In order to ensure maximum synergy between the activities financed by two different financiers, IFAD and GOK have been undertaking substantial effort to ensure the timely processing of the GEF Brief while also ensuring the establishment of the Project Management Unit (PMU) in the project area. The PMU has been established as of 1 July 2004, and will be fully operational by the time that full appraisal of GEF financed activities. The response to STAP reviewer comments have been organised in seven broad topics.

Poverty and Environmental Conservation: The STAP reviewer articulates the well known point that ecosystem conservation and survival of wildlife depends upon developing social and ecological solutions to the problems of underdevelopment. Addressing poverty has been the underpinning conceptual approach for the design of the GEF alternative since IFAD fielded an Inception Mission in October 2001 in response to a formal request by GOK to support better water management for the Tana River basin. At that time, it was clear that the ecosystem threats being experienced were anthropogenic, and without focusing on the livelihoods of the poor people living around the National Reserve, it would not be possible to promote conservation of the forests which provide ecosystem services for the gradual release of water from the watershed. Furthermore, poor people who are IFAD's target groups considered menace from wildlife at one of the major causes of their livelihood problems. While IFAD's mandate focuses on poverty alleviation and includes addressing environmental degradation as part of its agricultural programmes, it would not be possible to finance activities for conservation of the National Park and Reserve and wildlife issues. The blended approach under the proposed project should promote a greater impact both relative to the concerns of poor farmers as well as for conservation of a unique protected area. More information on social and political drivers of environmental degradation has been included in the Brief under Section II Baseline: Driving forces, paragraph 42, and in Annex 9 on Ecosystem Threats, Table 1: Driving Forces, etc. Thus, both the Brief and the annex on ecosystem threats are now highlighting weaknesses of legal and policy frameworks and processes as drivers of environmental degradation.

Political and Legislative Issues. The political and institutional framework relative to environmental issues has been the subject of extensive work by the Government of Kenya and donors over the past ten years. A review of environmental legislation affecting the proposed project was carried by IFAD in March 2002, and this document in its entirety was included in the GEF Concept Note approved in May 2003. Two key pieces of legislation has been passed, the Environmental Act of 1999 and the Water Bill of 2002, while a third piece, the Forest Act is still under discussion. The assessment of the various missions has been that while the policy framework has undergone substantial change in Kenya and provides a suitable framework, but implementation of the new policies was not yet taking place because of weak capacity and lack of financing to introduce the proposed changes. Furthermore, while the new legislation foresaw the management of land and water resources along ecological boundaries, with the involvement of local communities and support from district level technical services (following upon the decentralization of development activities under the 1984 District Focus for Rural Development), there was little work to translate the new policies into field level development activities. Thus, the focus of design activities for the proposed project has been on supporting the implementation of the new policy framework at the District and local level. In order to provide additional context on political issues in the GEF Brief, specific mention has been made of the on-going policy dialogue between GOK and donors (para 28), and the description of the pending Forest Bill has been strengthened (para 30). The institutional section in the Baseline description has explicitly mentioned the three new pieces of legislation, and discussed the new to now focusing on implementation at the local level of the new policies, both with District technical service and local

communities (paras 40-42), while the challenge of promoting institutional change has been noted (para. 119) along with the importance of community participation (paras 124-125).

Institutional Issues. The STAP Reviewer has requested that the description of Output 4 (Enhanced Local Governance and Community Empowerment) and Output 5 (Timely Project Implementation) be strengthened. Output 4 is financed by IFAD with no contribution from GEF, and an expanded description from the IFAD Appraisal Report has been included in the GEF Brief describing the role expected from local communities under the new legislation, and the type of activities to be supported (paras 106-111). With regard to Output 5, the STAP reviewer has requested clarification about the institutional arrangements and the specific documents containing a record of the commitment of GOK to their implementation for IFAD-funded activities, and a more detailed description of how KWS will be strengthened to carry out the proposed GEF activities and GOK commitment to ensure their long-term sustainability. The description of Output 5 has been expanded to cover the points raised, and includes specific reference to IFAD's loan negotiations and the signed loan agreement committing the Government to the proposed implementation arrangements, as well as an expanded description of the activities planned for strengthening KWS and the commitment obtained from GOK for the recruitment of additional rangers and the inclusion of the payment of their salaries in the Government's annual recurrent budget allocation (paras 112-116).

Incremental cost analysis: IFAD and UNEP have closely reviewed incremental cost analysis presented in Annex 1, and revised the allocation of domestic and global benefits in order to achieve greater clarity. **Carbon sequestration:** Furthermore, issues related to carbon sequestration which had not been adequately brought out have been revisited and emphasized, particularly with regard to soil conservation on agricultural lands and reforestation in the National Reserve.

Regional Impacts and Replication: IFAD and UNEP will ensure that lessons from the Mt Kenya project are used in the design of similar projects in the future, and that lessons are disseminated through existing channels, such as publication series, donor working groups, and KWS meetings. Furthermore, many concerned individuals from neighboring countries visit Kenya to learn lessons from its experience in wildlife and conservation, and KWS will ensure that the experience gained under the proposed project is shared.

Sustainability. The commitment of GOK to issues of institutional and financial sustainability are discussed above under Output 5, and have been strengthened in the appropriate places in the Brief. Furthermore, a discussion of the interrelationship between poverty and environmental degradation has been included in the section on sustainability, and this presents the economic benefits expected from the IFAD-financed activities in agricultural areas, while noting the importance for reducing threats to the protected areas (para 122). Similarly the importance of reduced menace from wildlife is noted as promoting sustainability for conservation and the protection of wildlife by local communities (para 123).

ANNEX D: RESEARCH, MONITORING AND INFORMATION MANAGEMENT

83. **Overall project objectives.** The overall project objectives of the Mount Kenya East Pilot Project for Natural Resource Management Project is to reduce poverty through improved food security and income levels of farmers and rural women by promoting more effective use of natural resources, improve access and management practices for water resources and introduce better farming practices for sustainable land use and water resources. The project seeks to contribute to the government's poverty reduction and environmental conservation strategies. The project's immediate objective is to enhance equitable use of natural resources with particular focus on environmental conservation. The project's immediate objective is to enhance equitable use of natural resources with particular focus on environmental conservation. The project addresses causes and impacts of environmental degradation. Thus, the project includes activities for poverty reduction, as reduced incomes have contributed to natural resource mining in the project area, and these will be funded to a greater extent by GOK/IFAD as a rural development project. GEF will finance ecosystem management activities in protected areas of Mount Kenya which contain rich biodiversity and fauna and flora species of global conservation significance. Thus, project monitoring and evaluation should ensure the effective tracking of physical and financial progress in order to achieve the short-term project goals at the same time put in place a mechanism to track the impact of the project activities in the long-term.

84. **Objectives of the Research, Monitoring and Information Management programme.** There are two main objectives; to: (a) measure project implementation progress both physical and financial; identify and track project risks to provide early warning of both internal and external risks and facilitate adaptive management responses and (b) measure project impacts (bio-physical and socio-economic) and progress towards achieving overall project and component objectives. To this end, the programme needs to have a flexible management and assessment approach to allow adjustment in response to changing conditions and emerging issues.

85. Appropriate quantitative and qualitative indicators and data collection methods will be further refined during the early stages of project implementation once participating communities have been selected and site-specific activities have been agreed between PMU staff and the EICC and implementing partners and participating community groups. The success of the monitoring programme in delivering the desired level and accuracy of information will be regularly evaluated, especially in the early stages of the programme. The programme will be further refined and tested during PY1 and will be adjusted as necessary throughout the life of the project. If the indicators or the spatial and temporal sampling regimes are inadequate to detect change, then the programme will need to be modified.

A PROJECT MONITORING AND EVALUATION

86. The objective of monitoring and evaluation is to assist all project participants in assessing project performance and impact, with a view to maximizing both. The objective and purposes of the project, and the list of its planned outputs, have provided the basis for this monitoring and evaluation plan. The following will be monitored:

87. **Project execution:** Internal monitoring will focus on management and supervision of project activities, seeking to increase the efficiency and effectiveness of project implementations. It is a continuous process, which will collect information on both physical and financial progress on implementation of activities programmed in the annual, half-yearly, quarterly and monthly workplans. Following the monthly, quarterly, semi-annual and annual assessments, proposals will be made on how to improve performance after comparing estimated actuals (AWPB) vis a vis the actuals (achieved targets). The assessment will be the direct responsibility of the the PMU MISO, PMU environmental Officer and the EICC in collaboration with the PMU Project Manager:

88. **Project performance:** Internal evaluation will assess the delivery of logframe outputs, both in quantity and quality. Annual internal evaluations are carried out by the UNOPS Supervision Missions. These evaluations will be included in the Annual Reports submitted to the Project Steering Committee. In accordance with national government requirement, the annual audit of project accounts will be carried out by the National Audit Office (NAO). In addition, a 90-day internal rolling audit function will be carried out by an externally recruited private audit firm, in line with the agreement reached for all IFAD financed interventions in Kenya.

Monitoring and Evaluation Plan

89. The purpose of monitoring is to review project activities continuously with respect to management and implementation of activities in order to ensure that the work programme progresses as planned. This will allow all implementers to maximise efficiency in meeting objectives. The purpose of evaluation is to determine the relevance, efficiency, effectiveness and impact of project activities in terms of their impact, both during the project lifetime and in future.

90. Monitoring will be conducted using participatory approaches, particularly at local and district level, involving the implementing partners Forestry Department (FD), Kenya Wildlife Service (KWS), Non-Government Organizations (NGOs) and Community-Based Organizations (CBOs) and the Project Management Unit (PMU). District officers from GOK technical services will be trained to conduct participatory monitoring using simple field techniques and household surveys with local communities. The more technical aspects of measuring carbon sequestration and mapping the diversity of forest ecosystems will require targeted research in order to determine the impacts of project activities on these important dimensions. These activities will be sub-contracted to competent local organisations.

91. Internal evaluation will assess progress toward achieving logframe outputs and targets. These evaluations will be carried out by the PMU and reported annually. In accordance with national government requirement, the annual audit of project accounts will be carried out by the National Audit Office (NAO). In addition, a 90-day internal rolling audit function will be carried out by an externally recruited private audit firm, in line with the agreement reached for all IFAD financed interventions in Kenya.

Indicators of Project Execution

92. External mid-term evaluations will be effected after two years of project implementation. These will be commissioned from external consultants by UNEP in consultation with the GOK and IFAD. These evaluations will be preceded by annual technical audits that will serve as basis. The delivery of project outputs will be based on the Logframe and the evaluation will be carried out by the KWS with support from MISO from PMU. These will be consolidated at PMU level as the Project Annual Report which will be submitted to PSC, UNEP and IFAD. A summary of the project performance indicators is shown in **Table 1**.

Table 1: Monitoring and Evaluation Indicators for the Project Components

MKEPP component (& donor)	Key indicators	Impact assessment methods (and sources)
Water resources planning and management (IFAD/GEF)	<ul style="list-style-type: none"> Develop 7 sub-basin management plans and increase downstream dry season flow by 20% at end of project period² All new abstraction (4/dist/year) meet set guidelines and total consumption² and 50% of illegal abstractions regularized by end of project period² 463 improved water projects developed² 13 RWUAs established and actively managing water resources² 260,000 of people targeted² 1 set of Guidelines for improved resource allocation¹ 1 document outlining decision support tools developed¹ 	<ul style="list-style-type: none"> River flow data (WRMA) No. of applications and approvals (WRMA) Field survey of river abstractions Water use on farms Farm surveys RWUA/PMU reports " CBO and HH surveys (PMU) " Guidelines approved and implemented No. of rivers for which streamflow and water quality data is available (WRMA)
Soil conservation (IFAD)	<ul style="list-style-type: none"> 5 000 farmers adopting improved soil management practices² 15% reduction in soil erosion² Soil physical and nutrient condition improved by 25% by end of project period² 25% increase in crop production² 1 000 Ha in non-protected areas re-afforested, 500 trees/ha targeting 2 500 farmers² 	<ul style="list-style-type: none"> Farm and plot monitoring surveys (KARI) FFS attendance and follow up farm surveys Visual and photographic assessments Field surveys (farmers/PMU)
Environmental conservation (GEF/IFAD)	<ul style="list-style-type: none"> Replanted 2 800 ha of degraded forest area , 1 950 ha of indigenous forests and 850 ha plantation forests and ensure 90% survival of planted seedlings, thus rehabilitate degraded protected area¹ 1 000 ha degraded areas rehabilitated outside protected areas² 500 000 people adjacent to the Forest Reserve in 5Km diameter and another 300 000 in the next 5Km¹ 85% reduction in frequency of illegal activities¹ 26,000 households adopt energy-efficient technologies² 50% reduction in area affected by wildfire¹ Approx 397 km of wildlife barriers installed and maintained¹ Six operational forest-specific management plans developed and implemented¹ Operational ecological monitoring and information management system¹ Two participatory forest management strategic plans developed and implemented¹ Mweiga Research Station strengthened for Ecosystem monitoring¹ 1 Research outpost established¹ 	<ul style="list-style-type: none"> Remote sensing (KWS and partners) KWS/NGO/PMU reports and field surveys PMU reports CBO surveys Occurrence reports (KWS, FD), aerial surveys HH surveys (PMU) Occurrence reports (KWS, FD) KWS, CBO and NGO reports Baseline and end of project survey of elephant popⁿ and habitat (KWS) KWS/FD reports Mweiga Research Station reports KWS/FD/KEFRI and CBO reports
Community empowerment (IFAD/GEF)	<ul style="list-style-type: none"> 260,000 people receiving tangible benefits from project supported activities² Improved livelihoods and food security² 	<ul style="list-style-type: none"> KWS/KEFRI/CBO reports Community and HH surveys
Project management (IFAD/GEF)	<ul style="list-style-type: none"> PMU appointed and operating² Financial systems operational² Workshops held² Baseline surveys conducted and M&E system implemented^{1,2} Progress reports submitted on time^{1,2} 	<ul style="list-style-type: none"> PMU Internal Review and reports PMU and Mweiga Research Station Reports

Notes: ¹ indicates GEF-funded monitoring; ² indicates IFAD-funded monitoring

B PROJECT IMPACT EVALUATION

93. Research, Monitoring and Information Management” programme will aim at assessing global benefits of biodiversity conservation and carbon sequestration. Baseline and impact surveys will be conducted for each of the Project’s outputs. In terms of assessing the two major global benefits that will be generated by the GEF activities – biodiversity and climate change (carbon storage and sequestration): **biodiversity** assessment will be pitched at the ecosystem level, assessing the distribution and condition of forest types; and **carbon sequestration** estimates will concentrate on agricultural lands where the most significant changes are likely to occur as a result of improvement in soil and water management practices and promotion of farm agroforestry and energy-efficient technologies. Community and social indicators will measure effectiveness in engaging communities in participatory forest and water management activities and receipt of tangible benefits derived from project activities which contribute to improved livelihoods and food security.

94. Monitoring impacts of the MKEPP will require coordination of implementing and external agencies in data collection, collation and reporting. The PMU will contract an M&E specialist for three months in year one and a further one month in year two to assist in the design and implementation of the monitoring programme. The specialist will ensure: (i) integration of MKEPP and GEF Research, Monitoring and Information Management activities; (ii) generation of synergies where IFAD- and GEF-funded activities overlap (e.g. carbon sequestration, farm agroforestry, community empowerment); and (iii) that monitoring activities of project components are timely, coordinated, and provide more accurate assessments of project impacts.

Indicators of Project Impact:

95. A range of indicators will be used to assess the various environmental and socio-economic aspects of the project components. The indicators will be identified through a participatory process in order to achieve a locally valid assessment of project impact and ensure ownership of the project outcomes. Selection at local level will require a combination of technical expertise and local knowledge. The indicators to be selected must reflect:- (a) status of natural ecosystems, their conservation and capacity for production of goods and services, (b) evidence of positive changes in the management and use of biodiversity and natural resources, and (c) improvements in productivity and reduction of poverty. The proposed potential impact indicators by project activity are presented in **Table 1**, and will focus on measuring project results in three broad areas, namely socio-economic impact, monitoring water flows and quality and ecological impact.

Schedule for Determination and Implementation of Indicators

96. In addressing project implementation problems in Kenya, IFAD has established that substantial effort is needed and hence is undertaking a two-year initiative to improve planning, budgeting, reporting and monitoring by PMUs and the government district technical staff. This work started in June 2004 and will be implemented over 2 fiscal years with a view to assess and modify the approach in light of the experience gained. The approach adopted is in four phases:

Phase 1. Review the project Logframe with PMU staff and government technical services with a view to validate the logframe and proposed indicators.

Phase 2. Agreeing upon roles and responsibilities in light of the above ownership building activity.

Phase 3: Agreeing upon the content and approach for conducting baseline study in light of indicators validated by PMU and government technical services.

Phase 4: Develop tools including baseline study report, collection of impact information and analyze such information as part of annual performance review of the project. The output of this activity will

be to identify priority indicators, record forms, a schedule with timing of data collection and designated responsibilities and notes on consolidation, analysis and presentation of the information in annual performance review workshops and in annual reports.

Phase 5. During MTR (PY4 of IFAD-funded activities and PY2 of GEF-funded activities), carry out a thorough review of the indicators with a view to determine changes that should be introduced and thereafter, routine application of the indicators during the remaining project life.

97. During the process of impact monitoring, indicators will be developed and refined along with modalities and timeframes for monitoring. IFAD has started to determine with the government of Kenya the roles and responsibilities and the content of project reporting and impact monitoring responsibilities. It is expected that during the project appraisal in January-February 2005, when the first part of this work will be nearing completion, it will be possible to develop a full matrix of roles and responsibilities for integrated project reporting and monitoring.

General Indicators for Impact Assessment

98. **Social and Economic Indicators.** Community and social indicators will focus on measuring effectiveness in engaging communities in participatory forest and water management activities, adoption of improved soil and water practices and tangible benefits derived from project activities which contribute to improved livelihoods and food security. Key indicators could include: (a) communities and members (by gender) actively involved in participatory forest and water management, (b) communities involved in and maintaining project initiated benefit-generating activities, (c) proportion of income from non-farm sources including project activities and proportion from traditional sources; farm profits; household income per capita, (d) adoption of improved soil and water management practices, (e) crop productivity; and (f) food security and livelihoods.

99. **Water Resources Indicators.** Monitoring of water resources will focus on: (a) increased availability of water in the rivers and decreased number of illegal abstractions, (b) increase in the quantity of water returned to the rivers after use, (c) quantity, quality and silt load of water flow per catchment and with regard to irrigation, monitoring will focus on increased irrigation efficiency and on reduction of water losses.

100. **Ecological Indicators.** Monitoring of ecological and conservation impact will review overall changes and trends in:- (a) forest diversity, rehabilitation and protection, (b) carbon sequestration in relation to soil condition and management, (c) sustainable allocation and use of water resources; and (d) impact of wildlife barriers on wildlife populations and habitat.

Ecological Impacts of GEF Outputs and Benefits

101. Ecological data collection will involve a combination of participatory field surveys and remote sensing techniques. Ongoing routine monitoring that has been conducted by KWS and FD (e.g. occurrence of fire, poaching and human/wildlife conflict) will provide a baseline against which to assess changes in these aspects of ecosystem management. As required, baseline data for other parameters will be collected during the first year. Other specific indicators will be jointly developed with the baseline as appropriate for site-specific conditions and activities.

102. **Forest Resources Management.** Conservation of Mount Kenya's unique biodiversity is a key **global benefit** that will generate from GEF-funded activities. The objective of forest management output is to improve biodiversity conservation and restore ecological function through activities under three main sub-components: (1) forest rehabilitation, involving active replanting of degraded forest areas; (2) forest protection, which includes surveillance and fire management; and (3) participatory forest management (PFM), initiation of a pilot PFM process for a selected forest; and (4) forest-specific operational management plans.

103. **Forest diversity and distribution.** Since the project is concerned with conservation of biodiversity at the ecosystem level, biodiversity assessment and monitoring will focus on the diversity of forest ecosystems, their distribution and ecological condition. The forest diversity survey will assess trends in canopy cover, distribution and ecological condition of different types of indigenous forests and plantations. The distribution of forest-types can be rapidly mapped using remotely sensed imagery. Given the right imagery and a workable definition of cover categories, this classification can be carried out with high accuracy. A field survey to describe and locate forest types will provide more precise results, with superior classification accuracy. Imagery-based area estimation will not only provide summary statistics, but will also allow description and analysis of the spatial arrangement and fragmentation of forest habitats. Those forest types that are rare, restricted or threatened will be of particular interest.

104. A forest diversity survey will be conducted during the first year of the project and the results will represent the baseline against which future changes will be measured. Appropriate forest diversity indicators would include:- (a) forest area by type and successional stage relative to land area, (b) degree of fragmentation of forest types, (c) complexity and heterogeneity of forest structure, (d) rate of conversion of forest cover (by type) to other uses; and (e) area and percentage of forests affected by anthropogenic and natural disturbances.

105. Given that spatial increases of forest areas through regeneration (either natural or from active replanting) is a long term process, it is highly unlikely that changes and trends in forest canopy cover and distribution will be detected during the course of this project. Thus, KWS and partners will need to access funds to conduct a repeated ground survey and mapping exercise, probably some 15-20 years after project initiation. In the meantime, surveys to evaluate the success of forest protection measures (see below) will provide short term indications of more general trends in forest condition.

Forest rehabilitation

106. Forest rehabilitation essentially involves strategic replanting of degraded forest areas to restore ecological function and increase species and structural diversity. The primary indicator of success will be the survival of planted seedlings. Seedling establishment success will be monitored through simple participatory field surveys involving communities, FD and/or NGO involved in replanting. Monitoring will occur simultaneously with ongoing weed management activities. Plant attributes that will be measured include density, mortality, species diversity, plant height and diameter, and plant health. Of particular interest will be the effectiveness of strategies to minimize seedling/sapling damage from wildlife and the suppression of competition from weed species.

107. Monitoring will continue until plants reach a growth stage where they are highly likely to continue to maturity. This will vary between species but generally would be at about five years. Obviously, monitoring five years after planting is not possible within the timeframe of a four year project. However, by the end of the project FD should have sufficient resources to undertake periodic rapid field assessments and use this information to assist to optimize success of future replanting programmes.

108. Forest rehabilitation will be a collaborative effort between forest adjacent communities, FD/KWS and selected NGOs. With technical assistance from FD/KWS and NGOs, communities will grow tree seedlings, sell them to FD/KWS or NGOs and assist with planting and monitoring. Thus, communities will directly benefit through selling of trees and labour. In addition, their capacity to market seedlings locally will be sustainable beyond the life of the project. Monitoring the impact of this sub-component therefore will also include an assessment of changes to community livelihoods as a result of benefits derived from forest rehabilitation activities.

Forest protection

109. Monitoring the impacts of forest protection activities will include what are referred to here as surveillance surveys. They will essentially indicate improvement in forest protection measures, including *fire management*, through the collaborative efforts of FD, KWS and communities. Thus, these surveys will directly address forest diversity indicators four and five listed previously.

110. Damage from disturbances or threats such as fire, human encroachment and illegal forest use, will be detectable in the short term. Surveys to assess increases or decreases in the frequency, extent and impacts of these disturbances will be conducted in the first year of the project and repeated in year four. Surveillance surveys will follow the same methodology used in previous surveys conducted by KWS and partners in 1999¹⁵ and 2002¹⁶. This will build a contiguous and consistent data set and will allow more accurate analysis of longer term trends and facilitation of informed management decisions. The methodology for these two previous surveys was based on time-series satellite image analyses, and repeated aerial and ground surveys. Damages and threats to the forest were classified as follows:- charcoal production, fire occurrences, shamba-system practices, grazing of livestock, logging of indigenous trees: Camphor (*Ocotea usambarensis*), Cedar (*Juniperus procera*), Wild Olive (*Olea europaea*), and East African Rosewood (*Hagenia abyssinica*), logging of other indigenous tree species; and landslides.

111. KWS and FD regularly collect data on illegal forest activities, for example, offences committed against the Forestry Act and number of cases prosecuted. They also record occurrences of fire. These and subsequent data will be used, in conjunction with surveillance surveys, to monitor trends in occurrences of forest disturbances and to gauge the effectiveness of forest protection measures.

Carbon sequestration

112. Carbon sequestration (CS) is another key **global benefit** to be generated by the GEF Alternative. The activities that will contribute to improved capture and/or maintenance of carbon are improved protection of forests, rehabilitation of degraded areas, farm agroforestry and most importantly in the context of the Project, improved soil and water conservation on agricultural land.

113. There are two fundamental approaches to sequestering carbon in terrestrial ecosystems: (1) protection of ecosystems that store carbon so that sequestration can be maintained or increased; and (2) enhancement of the ability of ecosystems to increase carbon sequestration beyond current conditions. The GEF Alternative primarily follows approach 1, preventing loss of carbon by promoting protection, conservation and sustainable use of forest products from the National Park and National Reserve and thus preserving current carbon reservoirs. While many projects surrounding forestry-based carbon offsets place a heavy emphasis on reforestation, there is little doubt that efforts to slow deforestation and to manage existing forests are just as important for long term climate change mitigation as efforts to accelerate reforestation. Reducing forest degradation through improved protection of Mount Kenya forests will be monitored by field and aerial surveys, as described earlier under the Forest Protection sub-component of Forest Management.

114. The GEF Alternatives also contributes to carbon sequestration and storage via approach 2, by slowing the rate of land degradation, improving management and growth rates of existing trees and crops, changing agricultural practices to increase soil carbon uptake, and promoting on-farm agroforestry and the adoption of energy-efficient technologies. Enhancement of carbon sequestration in agricultural systems will involve targeted research. The formulation mission met with Kenya Soil Survey (KSS) Unit of Kenya Agricultural Research Institute (KARI) to discuss approaches to CS monitoring. KSS conducts research on soil carbon and is currently involved in a medium-sized GEF project with UNEP entitled *Global (Brazil, India, Jordan, Kenya) Assessment of Soil Organic Stocks*

¹⁵ Gathaara, G.N. 1999. Aerial survey of the destruction of Mount Kenya, Imenti and Ngara Ndare Forest Reserves: February – June 1999. Kenya Wildlife Service, Nairobi.

¹⁶ Vanleeuwe H, Woodley B, Lambrechts C and Gachanja M, February 2003, Change in the state of conservation of Mount Kenya forests: 1999-2002: An Interim Report. DICE, KWS, UNEP, KFWG.

and Change at National Scales. Thus, they have expertise and experience in this field and as local providers with an office in Embu, from which the research would be coordinated, they also have the substantial advantage of local knowledge and experience. KSS involvement will also provide synergies between the two GEF projects in terms of data inputs and refining modelling parameters, which is not only cost effective but will boost global and local knowledge and understanding of how soil carbon varies with soil type, management practices and climate.

115. The objectives for carbon sequestration monitoring on agricultural areas are to:- (a) assess the amount of soil organic carbon (SOC) in different soil units in the project area (b) relate soil carbon to past and current management practices. Also determine the influence of household socio-economic characteristics on soil carbon through affecting HH capacity to provide adequate soil inputs (e.g. labour, fertiliser, fallow etc.), (c) relate soil carbon to vegetation biomass; and (d) establish the variation in soil carbon in relation to climate.

116. Research has shown that the proportion of soil carbon varies significantly between land uses, soil and climate and combinations of these variables. Many of the factors determining carbon input and output on agricultural land are influenced by land management practices. However, the effects may not be measurable for twenty years; a time frame which is clearly beyond the scope of this project. Therefore, the approach to estimating the impact of project activities on carbon sequestration will be to measure soil carbon at explicit sites with different combinations of soil type, climate and management practices. This will facilitate extrapolation across areas with similar combinations of variables and also provide a basis for estimates of increases in carbon sequestration as a result of adoption of improved soil management practices. The information derived from these parameters can be used by farmers and implementers to make informed soil management choices. It can also feed into long term carbon sequestration data sets and improve the accuracy of soil organic carbon simulation models.

117. In addition to edaphic and land management factors, data on socio-economic and farm characteristics (both of which are discussed further below) should also be simultaneously collected as these will affect the capacity of farmers to provide soil inputs (e.g. fertilizer, labour, mulch). Soil management and condition indicators will be agreed between farmers, who will participate in assessments, and other stakeholders (e.g. M&E officer of the PMU, contracted expert). Soil management indicators are many but could include:- (a) tillage and sowing methods, (b) fertilizer type, rate and frequency of application, (c) mulch type, cover and degree of incorporation into the soil, (d) crop type, diversity and productivity, (e) crop rotation and intercropping practices; and (f) pest and disease management. Some soil condition indicators could include, soil vegetation cover, organic matter cover, origin and incorporation, erosion type and severity, rooting depth, texture; and soil biological activity.

Wildlife Barriers

118. The objective of this component is to reduce the frequency of human/wildlife conflict by erecting wildlife barriers to prevent wildlife from moving through cropland. The impact of wildlife barriers on wildlife populations and their habitat is unknown. Whilst experience has shown that barriers successfully protect crops and people, it is possible that they may increase pressure on areas that lack barriers. That is, the problem of crop and infrastructure damage from wildlife on Mount Kenya as a whole may not be solved but merely transferred from one area to another. Elephants are the major problem wildlife species on Mount Kenya and so impact surveys will monitor:- (a) the effect of wildlife barriers on conflict frequency and location, (b) elephant population dynamics and behaviour; and (c) the effect of wildlife barriers on forest habitat.

119. Elephant population and habitat surveys will build on a study that was conducted by KWS in 1998, provided that the methodology and survey locations used in that study are appropriate. The objectives would be to determine trends both in population dynamics and habitat quality, changes to

which could be attributed to the effect of barriers restricting the movement of animals or changing migratory routes.

120. Recording the occurrence of conflicts and elephant damage to crops and infrastructure has been an ongoing activity for KWS. Historical monthly records will form the baseline against which to assess the effect of barriers in terms of reducing conflict frequency and also to determine whether erecting barriers along the boundary of one area transfers the wildlife problem to an adjacent area.

Information Management and Reporting

121. Whilst project monitoring is primarily a management function and as such will ultimately be the responsibility of the PMU, it is envisaged that the Mweiga Research Station will play a central role in coordinating monitoring of GEF activities (especially those that fall outside the geographical area of the MKEPP), collating results, availing them to the PMU and other stakeholders, and providing technical support to implementing partners. The PMU will be responsible for the overall coordination of all components of the Project and for reporting on project impacts in line with IFAD and GEF requirements.

122. The PMU will use information provided to Mweiga Research Station by the implementing agencies to submit quarterly technical and financial reports. The reports will assess the level of success in reaching the expected outputs based on the indicators listed in the logical framework and as agreed by stakeholders for the Research, Monitoring and Information Management programme. PMU reports will indicate project potentialities, successes and weak points, and recommend improvements