Proceedings of the regional workshop on the conservation of eastern Africa mountain ecosystems as water towers

2-5 August, 2005




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ACRONYMS

CSO	Civil Society Organizations
EAC	East African Community
EARPO	Eastern Africa Regional Programme Office
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
FID	Forestry Inspection Division
FOMAWA	Friends of Mau Watershed
FRP	Forestry Rehabilitation Programmes
GDP	Gross Domestic Product
IWRM	Integrated Water Resource Management
JPoI	Johannesburg Plan of Implementation
KWFG	Kenya Forestry Working Group
LFR	Local Forest Reserves
MDG	Millennium development Goals
MEAs	Multilateral Environmental Agreements
NEMA	National Environment Management Authority
NEPAD	New Partnership for Africa's Development
NFA	National Forestry Authority
NRC	Non-Resident Cultivation
REDSO	Regional Economic Development Services Office
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
UWA	Uganda Wildlife Authority
WWF	The Global Conservation Organization

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EXECUTIVE SUMMARY

WWF-The Global Conservation Organization facilitated a regional workshop on the conservation of montane forest ecosystems from 2-5 August, 2005 at Merica Hotel, Nakuru, Kenya. The workshop was one of the tasks undertaken under the WWF/UNEP joint project on capacity building for biodiversity conservation in mountain ecosystems in East Africa. The participants represented government departments, local communities and non-governmental organizations from Kenya and Uganda active in the conservation of montane areas.

The workshop objectives were to increase knowledge base of stakeholders; build capacity of local communities; identify opportunities for sustainable management of mountain ecosystems; and, develop a strategy and options for its mainstreaming into policy, legal and institutional frameworks for the purpose of managing these areas at various levels. Discussions were held on the conservation status of the montane forest areas, and a regional strategy on their conservation was formulated.

Representatives of the various agencies addressed the workshop. These were Dr. Kwame Koranteng of WWF Eastern Africa Regional Programme Office (WWF-EARPO), Dr. Nehemiah Rotich of the United Nations Environment Programme (UNEP), Mr. David Mbugua of the Ministry of Environment and Natural Resources, Dr. Wilson Kipkore of the East Africa Community (EAC) and Prof. Ratemo Michieka of the National Environment Management Agency (NEMA). In their remarks, a number of important points were outlined including the following:

- Montane ecosystems play important roles in providing ecosystem products and services necessary for sustainable development, human survival and biodiversity;
- The development of a regional strategy on mountain ecosystems would provide for a sound conservation and development in the region, and where it may be replicated;
- Developing integrated approaches and partnerships are challenging, yet allow for mainstreaming of biodiversity issues into policy and legislative frameworks, and establishment of strong linkages between environment and sustainable development;
- Women empowerment as part of gender mainstreaming in agricultural production systems and recognized within the Millennium Development Goals (MDGs), should feature in the workshop reporting;
- Conflicts in natural resource management is visible, water access and control presenting a major source of conflict;
- The move from traditional state management of natural resources towards a strong community based resource management is timely;
- Synergy rather than duplication and competition at the policy and legal levels is seriously needed;
- Forest degradation especially in the Mau Forest is detrimental to local and trans-boundary utilization of water resources;
- Opportunity exists to mainstream policy and legal issues on natural resources, especially on shared ecosystems within the overall framework of the East Africa Community;
- The extent to which community forest management is tenable requires critical analysis, given the weak government institutions and low capacities of local communities;
- The current state of degradation of the Mau Forest would require enormous resources to restore;
- The absence of a comprehensive land use policy for Kenya has limited the maximization potential of a given forest; and,
- Cross border resources manifest unique characteristics because of divergent value systems across the cultural and political divide, and therefore a holistic and regional approach in natural resource planning is essential.

It is generally recognized that mountain ecosystems have rich biodiversity and play important roles, especially as water towers. Poverty level is strongly related to how these areas are managed. Forests also provide a wide range of products and services to communities and society. Although at least one form of legal protection exists for the conservation of montane areas, their deficiency is in providing

mechanisms for community based biodiversity conservation. Mountains are vulnerable to numerous threats that call for sound legal and administrative frameworks, to integrate and harness local communities' participation.

There exist at each level, policy and legal frameworks that guide the conservation of mountain ecosystems. At the international level, the enabling international instruments include the Convention on Biological Diversity, 1992; the United Nations Framework on Climate Change, 1992; and Ramsar Convention, 1971, among others. The regional/sub-regional instruments include the Africa Convention on Conservation of Nature and Natural Resources, 1968 revised 2004; the East Africa Community Treaty and Protocol; and, the Nile Basin Initiative, 1999. Also are to be found country specific national policy and legal instruments. In Uganda, the national instruments include environmental policy and statute; forest policy and statute; wildlife policy and statute; and water related policies and legislation. In the case of Kenya, the national instruments are Economic Recovery Strategy for Wealth and Employment Creation, 2003-2007; Environmental Management and Coordination Act, 1999; Forest Policy and Legislation, 2005; and, Water Policy and Water Act, 2002.

In light of the biodiversity status of the Mau Forest and Rwenzori Mountains, and the policy and legal frameworks, some of the strategic actions proposed for the conservation of these areas in eastern Africa are promoting the protection of mountain forests as water towers; strengthening community organizations and or institutions; and, using champions.

The Rwenzori Mountains have become a haven for scientists and mountaineers since 1906; gazetted as

Tourism is an important economic activity in the Rwenzori. (WWF-EARPO / Svein Erik HAARKLAU)

a National Park in 1991 under the management of Uganda Wildlife Authority, and designated a World Heritage Site in 1994. The Mountains face several conservation challenges that include: complex land degradation issues; weak information flow between communities and park authorities, weak management capacity of protected area authority, lack of benefits for local communities and, the potential negative effects of oil exploration and drilling in the Albertine Rift Valley.

The Mau Forest Complex (400,000 ha) is Kenya's largest forest. It constitutes one of the five 'water towers' in Kenya; and a water source for main rivers west of the rift valley, which drain major lakes in Kenya and the east Africa region, including the transboundary Lakes Victoria, Natron and Turkana.

One role of the Mau Forest, supporting people's livelihoods is recognized. It supports a large majority of Kenya's population (over 3 million people) that lives in Lake Victoria Basin, notwithstanding the environmental services essential to crop production, and the range of products available in the forest. The Mau forest is important in micro-climate regulation of crops, particularly in tea growing areas such as South West Mau Forest (Kericho), Tinderet and Northern Tinderet forests.

Catchment, socio-economic and micro-climate roles aside, massive vegetation cover change in the Mau Forest was experienced from 1973 to 2003. There was a loss of 15,820 ha and 20,960 ha inside and outside forest reserves respectively. In total, 36,780 ha, representing 49% of the dense vegetation cover in the catchment of Lake Nakuru was lost.

Different stakeholders, including the government and private sector have intervened in the restoration of the forest cover. The WWF Eastern Africa Corporate Club has been engaged in tree planting activities in the Mau Forest since its establishment in 2002.

The workshop participants expressed concern given the intense pressure challenges that montane areas face and which required concerted efforts. Critical factors identified for success in reversing this trend include stakeholders' involvement and information sharing. Whereas the use of regulatory mechanisms is unavoidable in forest management, the involvement of communities and relevant stakeholders for the purpose of building dialogue and consensus on important issues remains paramount. However, the extent to which this can be done may be limited by, among others, the lack of guidelines from managing authorities and the absence of consensus amongst stakeholders on what defines community.

A final product of the workshop was the formulation of a regional strategy on the conservation of mountain ecosystems, and recommendation for further refinement and development. This was based on the discussions of three Working Groups to define the regional vision and objective and the same for the Mau Forest and the Rwenzori Mountains.

1.0 INTRODUCTION

1.1 Background

A regional workshop on the conservation of montane forest ecosystems was held from 2-5 August, 2005 at Merica Hotel, Nakuru, Kenya. It was attended by participants from Uganda and Kenya who were drawn from the government, local community and non-governmental organizations. The list of participants and agenda for the workshop are given as Annex 1 and 2 respectively. It involved a general introduction of the objectives and expected outputs, and country presentations with case studies from the Mau Forest (Kenya) and Rwenzori Mountains (Uganda). There were plenary discussions, group working sessions and a field visit to the Mau Forest to enrich the workshop, which culminated in the formulation of a regional strategy on the conservation of east Africa's montane forests as water towers.

In his introductory remarks during the opening ceremony, Mr. George Wamukoya, the Head of Development and External Relations, WWF-EARPO, highlighted the key deliverables under the community based biodiversity conservation on montane ecosystems project. He gave these as:

- *Status Report:* review, analyze and produce a status report on the policy, legal and institutional framework for the conservation of biodiversity in mountain ecosystems;
- *Regional Workshop*: facilitate a regional workshop, and develop a regional strategy to promote community involvement in good land management;

Participants of the Regional Workshop held in Nakuru, Kenya, August 2005 (WWF-EARPO)

- *Materials and Advocacy:* promotion of a regional strategy on water towers; and,
- *Piloting:* implementation of pilot community-based initiatives building on the on-going conservation work.

Mr. Wamukoya explained that mountain ecosystem issues were to be articulated in a regional strategy that the workshop participants would help develop. He posed the following questions that he hoped would be answered in the strategy workshop:

- What do we want to see in the mountain ecosystems?
- How do we take advantage of the ongoing activities to obtain outcomes without necessarily re-inventing the wheel?
- Who are the actors in this process?

1.2 Workshop expectations

Mr. Wamukoya led the discussions on the workshop expectations which were classified into three themes: regional strategic actions, role of partners, and information and lesson learning.

Regional strategic actions

Development of a regional strategy: These include the development of a powerful vision and agreed on forest management frameworks such as a regional strategy and water resource management strategy for the conservation of the forested water towers, workable strategies for public participation in the management of natural resources, development plan for degraded catchments, enhanced understanding of ecosystem processes, and effective delivery of conservation results.

Understanding policy and legal frameworks: This includes understanding Kenya's Forest Bill (2005) and working on a permanent legislative solution to save the montane forests.

Support to landscape restoration: These include a way forward on forest restoration efforts, more support on Mau Forest restoration from WWF (including the development of a strategy on water towers), resource mobilization and identification of main actors, and learning about the project (including forest landscape restoration work in other parts of East Africa).

Roles of partners

Understanding partner roles: These include understanding the WWF/UNEP project design and development process, learning about policies and legal frameworks applicable to community based biodiversity conservation, the challenges facing stakeholders vested with conservation of forests, understanding the role of stakeholder activities and constraints of each actor, and mechanisms of involving local government in the project implementation.

Partnerships

Sustainable partnerships: These include insights into the best ways to enhance sustainable partnership with community and other stakeholders including the County Council of Narok, harnessing opportunities for partnership in the conservation of ecosystems in the two countries, and improving the understanding of the role and mandate of WWF in the management of forest ecosystems.

Goodwill: includes the modalities of making use of the government goodwill to restore catchments and conserve the environment.

Information and lesson learning

This includes some exchange on community based biodiversity conservation of mountain forests, including successful practices; and, about regional networks that may exist.

1.3 Welcome remarks

Dr. Kwame Koranteng, the Regional Representative, WWF-EARPO welcomed participants to the workshop. He said that the capacity building for biodiversity conservation in mountains ecosystems project is implemented by the WWF-EARPO under a Memorandum of Understanding with UNEP, and in co-operation with UNEP- World Conservation Monitoring Centre, Cambridge, United Kingdom. He explained that the project focused on capacity building for the promotion of community based biodiversity conservation in mountain ecosystems in

light of indigenous vegetation change, and covered Kenya and Uganda. The project target areas, he said, are Mau Forest in Kenya and Rwenzori Mountains in Uganda, adding that WWF-EARPO had projects in both areas.

Dr. Koranteng reiterated the importance of mountain ecosystems; taking the example of Mau Forest which is the source of seven rivers, and the Rwenzori Mountains (Uganda and Eastern Democratic Republic of Congo) being an important area of biodiversity on earth. He expressed happiness for WWF to be associated with the project.

He said that WWF-EARPO supports the Mara River Basin Management Initiative, a project which is concerned with integrated management, in which a stakeholder institution, the Mara Water Users' Association had been initiated. The Association draws membership from the small and large scale farmers, pastoralists and tourism stakeholders. The Mara River, he said, is the lifeline of the Masai Mara National Reserve and the Serengeti National Park that are East Africa's major wildlife areas. He added that the WWF Eastern Africa Corporate Club, which draws membership from the private sector, is working on the restoration of Mau Forest. One of their exemplary activities is tree planting in the Mau Forest.

He further said that the WWF-EARPO is opening the scope of operations to involve local communities and schools. In this case, the focus is on establishment of tree nurseries while working with the local forest dwelling hunter-gatherer Ogiek and the Forest Department whose mandate includes forest restoration. He said that the staff of WWF-EARPO have adopted Murinduku Primary School to advance tree planting activities and environmental education.

Dr. Koranteng noted that although the WWF/UNEP project had a small budget, he expected quite a lot from its implementation. His hope was that the project would be able to develop a regional strategy on mountain ecosystems as one of its outputs.

1.4 Brief remarks

Brief remarks were made by Dr. Nehemiah Rotich of the UNEP, Dr. Wilson Kipkore of the East Africa Community Secretariat, and Prof. Ratemo Michieka of the National Environmental Management Authority (NEMA).

Dr. Rotich, the Head, Biodiversity and Biotechnology Unit, UNEP said that the project supported by the Irish Trust Fund, focused on global environmental issues. These include Bonn Guidelines with a focus on genetic resources; Great Apes Survival Project and recommendations of the World Summit for Sustainable Development with a focus on great apes; monitoring of land cover focusing on biodiversity of African mangroves; strengthening protected area and ecological networks in Africa; and capacity building.

Dr. Rotich said that UNEP was delighted to work on platforms that address issues on mountain ecosystems. UNEP approaches to issues arose out of the fact that mountain ecosystems play a major role, that of providing ecosystem services necessary for sustainable development and human survival. The ecosystem services are: provisional (food, fibre, timber, clean water), regulatory (climate modulation, air supply and soil formation), and cultural aspects (tourism, ceremonies). He said that UNEP's new perspective was that of attaining the ability to manage montane ecosystems to sustain the provision of these services. In this regard, humanity is faced with the challenge of carrying out integrated approaches so that issues of biodiversity are mainstreamed into legislation. He emphasized that it is no longer practical to engage in sectoral approach, and called for the promotion of an inter-sectoral approach. This provides opportunities for partnerships at local and regional scales by working with other countries, with a focus to establishing linkages between environment and sustainable development. He said that one of the MDGs addressed women empowerment. In this respect, women are responsible for about 80% of food production on earth. He therefore urged the participants to clearly bring about this issue in their deliberation and reporting.

In conclusion, Dr. Rotich said that UNEP really looked forward to a product from the workshop that would be a basis for conservation and development in East Africa; or where it could be replicated.

Dr. Kipkore of the East Africa Community Secretariat said that the Community recognizes the importance of mountain ecosystems, and other shared ecosystems of the region. He said that the EAC was in the process of developing new regulations and institutional frameworks in environment and natural resources. These include new policies being formulated such as the Regional Environment Impact Assessment (EIA) guidelines. Given that guidelines cannot be legislated, EAC was in the process of developing shared protocols such as the East Africa Regional Forest Act. This would address shared ecosystems in the region that include Mt. Elgon, Mt. Kilimanjaro and Sango Bay. Dr. Kipkore emphasized the importance of not losing sight of regional perspectives. He said that the EAC was concerned with the nature of degradation in the region. He suggested that we should not close our eyes on ongoing work; with the need to harmonize the national protocols.

The issue of community forest management nurtured for the last 15 years, he said should not be used as a panacea for the problems facing the forestry sector. Instead, a lot of efforts are needed to change the community perceptions, and also in building strong institutions to manage and strengthen natural resource management issues. He noted that what had been witnessed of late are government institutions falling away.

Prof. Michieka, the Director General, NEMA was glad that WWF and UNEP had given a major up thrust to the conservation of mountain ecosystems in East Africa. Having visited Mau and Mara areas he had recognized the magnitude of the problems these areas faced. He gave an example of crocodiles living in an environment devoid of adequate water.

Prof. Michieka said that our visioning for countries in transition is long term in nature, and people should not suffer. He was concerned that to regenerate Mau would take a long time. His contention was that conflict is related to water resource availability. He noted that the recent conflict in Naivasha manifested in small feuds was basically triggered by water scarcity.

1.5 Keynote address

Mr. David Mbugua, Kenya's Deputy Chief Conservator of Forests in the Ministry of Environment and Natural Resources, read a speech on behalf of the Chief Conservator of Forests. This speech is reproduced in Annex 3.

In his address on the issue of conflicts on water, he questioned the rationale of an upstream user denying access to water resource to a downstream user. He also took issue with the existing natural resource management regime, saying that the traditional management by the state (whether it is water or wildlife) is no longer tenable. He said that the Forests Bill, 2005 that would soon become law spells out the role of community in the management of forests.

Mr. Mbugua said that in our working, complementarity rather than duplication and competition is what is needed. He noted examples of legislation that exhibit this mode, and includes Wildlife Act (e.g. in Mt. Kenya), Trust Land Act (old), Agriculture Act (with respect to extension work on riparian land and terracing), and the absence of a comprehensive land use policy for Kenya. He emphasized adherence to the principles of comparative advantage and multiple use options. The current focus, he noted, was on the management of cross border resources such as water, with the Nile Basin Initiative in place to address water issues within the Nile Basin. He expressed concern over the land use change in the Mau Forest that would affect the water flow and livelihoods of people downstream.

2.0 CONSERVATION STATUS OF MOUNTAIN FORESTS IN EASTERN AFRICA

The conservation status of mountain forest ecosystems in east Africa was the subject of the regional workshop; with case studies from two sites, the Rwenzori Mountains and the Mau Forest Complex. Six technical presentations were made during the workshop. Highlights of these presentations are given in the sections below.

2.1 Status of forest management in Kenya

Mr. David Mbugua, the Deputy Chief Conservator of Forests, presented on the status of forest management in Kenya. This presentation is reproduced below.

Kenya's gazetted forests cover a total of 1.4 million ha, representing about 1.7% of total land area. These forests are confined largely to the wetter, cooler parts of the country. They include coastal; east rift valley montane, as the case in the Aberdares and Mt. Kenya; west rift valley montane such as the Mau, Tinderet, Cherangani and Mt. Elgon; and Guinea-Congolian upland forest, as the case of Kakamega forest.

Forests rank high as one of the important national assets for economic, environmental, social and cultural values. Despite the proportionately small area covered by the closed canopy forests compared to the overall country's surface area, forests will continue to play a significant role by providing a wide variety of resources for human development. They provide utility products such as timber for construction sector, transmission poles for the energy and communication sector, fuel wood for the tea industry, among other uses; and, also for subsistence utilization by the communities as well as paper for the education and print sectors.

Forests also provide a wide variety of non-wood products. They are important in the conservation of biological diversity, regulation of water supplies, and carbon sequestration; in addition to being a major habitat for wildlife, which promotes tourism. The hydroelectric power stations are located in major forest water catchment areas. Moreover, these catchments also provide water to support irrigation schemes that are important for agricultural sector development.

At national level, the forestry sector contributes about 1% and 13% to the monetary and non-monetary economies respectively. The direct use value of forests at national level in terms of timber, fuel wood and poles is estimated at KES 3.64 billion per year. In addition, 24 million m^3 of fuelwood materials estimated at KES 4.8 billion is sourced from farmlands annually. Non-wood forest products which are obtained from mainly natural forests play an important role in Kenya's economy generating about KES 3.2 billion per year.

Much of the closed forest has been depleted due to internal and external influences. The external influence include the need for more agricultural land; short term political interests leading to invasion of gazetted forests; conflicts on natural resource use as well as unwarranted land use changes paving way to degradation and diminished re-afforestation efforts; and archaic forest policies and legislation.

Internal influences include weak extension service; and, inadequate policing personnel translating into large unmanageable patrol areas, which is further worsened by lack of transport, weapons and tools of work, unserviceable and outdated communication network, poor dissemination of research information and low staff morale due to difficult field working conditions.

Prudent forest management practices backed by updated forest legislation, policy and institutional arrangements are urgently needed to balance the needs for sustainable management, and those of development options such as forest exploitation, agriculture and settlement.

Mandate of the Forest Department

The mandate of the Forest Department is to contribute to the natural resource sector by enhancing development, conservation and management of forest resource base in the country. This entails ensuring an increasing supply of

forest products and services for meeting the basic and industrial needs of the present and future generations. The core functions of the Forest Department are to manage the natural forests and water catchment areas; develop and manage industrial forest plantations; promote farm forestry; protect forests; conserve and manage dryland forests; and, implement and coordinate forest policy and legislation.

Forestry sector development programmes

To achieve the mandate, the Department operates four primary development and four service programmes. The primary development programmes are: Natural Forest Conservation and Management; Farm Forest Development; Dry Land Forestry Development; and, Industrial Forestry Development.

The service programmes are: Forest Policy and Legislation; Forest Administration and Manpower Development; Forest Health and Protection, and Management Information System.

Natural forest management and conservation

Kenya's gazetted indigenous forest covers an area of 1.06 million ha, while the area found outside the gazetted forests is estimated at 0.18 million ha. This is composed of the coastal forest, the dry forest, the montane forest, western forest (tropical residue), riverline and mangrove forests. These forests are situated in high and medium potential land areas where human population and agricultural production are concentrated.

There has been no exploitation of indigenous forests for more that a decade due to Presidential ban that is still in force. These forests are managed under the principle of preservationist philosophy.

The natural forest ecosystems present a complex economic natural resource. This is because forests provide environmental goods and services. They provide goods to the local economy through the provision of timber, non-timber forest products and environmental services; and, given their capacity to control and regulate water flow, soil erosion and nutrient recycling. They are important sources of food, employment, medicine, and many other major non-wood forest products.

Natural forests are valued for cultural and religious purposes. Some of them contain sacred sites and many contain plant and animal species used in performing rituals. They attract tourists and therefore contribute to and sustain the nations' tourism industry. Natural forests provide home to a diversity of animals and plant species, and acts as refuge for endemic plants and animals as compared to plantations.

Due to the rapid increase in population, the forestry resources are facing overexploitation and depletion. The demand for land for growing food crop has also increased; and this has led to permanent losses of forested land through excision, encroachment and frequent disasters such as fires.

Industrial plantation development

Development of industrial forest plantation commenced in 1907 with the objective of raising plantations of fast growing exotic trees. This was on realization that wood production from the country's indigenous forests was not able to sustain the demand for industrial wood.

At present the total plantation area is 120,000 ha compared to 165,000 in 1988 and 160,000 ha in 1992. This means that 45,000 ha of plantation forest area have been lost since 1988. This has been as a result of forest land use changes through both regular as well as irregular forest excisions. Of this area, 50% is planted with *Cupressus lusitanica*, 30% *Pinus*, 15% *Eucalyptus*, and 5% other species that are mostly indigenous.

State of industrial plantation forests in the last decade

The forest sector has in the past been subjected to timber harvesting systems and practices that are not consistent with professional management practice. These include unplanned timber harvesting and resource under-valuation resulting in wasteful harvesting, inefficient milling practices and use of obsolete technology. There is an urgent need to review the whole process of licensing, valuation and

utilization of forest products, and the introduction of integrated harvesting.

Industrial plantations forestry is vital for economic development, and its sustainable management is an effective strategy for the conservation of indigenous forests through reduction of demand for resources from the latter. It is imperative that no effort should be spared in revamping the lost efficiency in forest plantation management, resource utilization and realization of their revenue generating potential to support other sectors of the economy.

The current ban on plantation saw milling which was imposed in October 1999 was due to the great concern within the general public and the government on the rationality of timber production and timber harvesting management in the country.

Positive implications of the ban on the economy

- Provided for an opportunity for the Department to assess the stock of materials available for sustainable harvesting.
- Allowed time to bridge the gap between harvesting and planting of harvested areas.
- Given farmers an opportunity to undertake tree planting as a business by supplying materials to saw millers who now have access to materials from gazetted forests.

Negative implications of the ban on the economy

- Given rise to a lucrative black market for timber thereby creating an incentive for forest poachers to invade forests.
- Resulted in over-cutting of private forests and woodlots.
- Has undermined the principles of sustainable forest plantation.
- Development including vital operations such as thinning and coppice reduction cannot be carried out.
- Closure of majority of large saw mills and diversion of financial and human resources from other forestry activities in order to enhance forest policing and protection.

Farm forestry development

This involves tree planting outside gazetted government forests. It includes practices such as establishment of small scale nurseries, woodlots, boundary planting and avenue planting to meet the daily needs of rural population such as timber, fuel wood, fodder, poles, fruits, shade, medicine and soil improvement.

The demand for wood after the ban on harvesting of forest industrial plantations is very high as private farms have become the main sources of materials for sawmills and mobile benches. Due to this demand, farmers have realized the commercial value of trees resulting in high demand for seedlings to plant.

The major challenges confronting farm forestry are lack of appropriate incentives to support commercial production of wood, inadequate funding levels to support and initiate training of stakeholders, investment in efficient management of lands, resource assessment valuation and pricing, utilization technologies and processing.

Lack of skills in determining value of the trees, and inadequate management skills have resulted to low prices of trees in some areas. This calls for the availing of tree product market information, appropriate tree seeds, and the much needed tree management backup to the farmers. On-farm tree planting demonstration plots have also been adopted as a focal point for technology dissemination at the farm level.

Dryland forest management

The Kenya dry lands cover about 80% of the total land area. This area is characterized by fragile soils, low rainfall and high temperatures; which result in low crop production and frequent crop failures causing food insecurity.

The state of dry land forests resources is reminiscent of wasteful use patterns and degradation; mainly through overgrazing, over-exploitation of trees for the acquisition of fuelwood, and charcoal particularly in the neighbourhood of towns and refugee camps.

The dry land forests have untapped potential especially in the production of non-wood forest products. There exist enormous potential in the production of honey, silk, gums and resins, essential oils and tree fodder. The dealership in these products should be organized into micro-enterprises and mainstreamed in participatory forest management for socio-economic development. Value-adding initiatives should be undertaken to make the forest tree products comply with market demands.

Dry land vegetation presents a challenge to forestry due to harsh environmental conditions in which they occur, and in view of the climate interaction between vegetation, people and livestock. Traditional forestry as practiced elsewhere is not applicable in the dry lands; and therefore, management of natural and planted tree stands must address not only the problem of dry zone silviculture but also the vital dependence of people and livestock on the vegetation.

Issues of concern in forest management

The main issues affecting forests in Kenya include the following:

Excision and change in land use

The large scale excision of 67,000 ha in 2001 is the biggest cause of forest destruction. The areas mostly affected are the Mt. Kenya, Mau, Marmanet and South Nandi Forests. The excision was on the pretext of settling landless; those displaced by the clashes, and provide room for institutions.

During these excisions, some beneficiaries solely or in collusion, extended forest boundaries into gazetted forests. On other cases, title deeds have been issued irregularly regardless of the procedure of forest degazettement.

This has had significant changes in the sustainable management of forests and the conservation of biodiversity. A number of permanent streams/rivers from these catchment areas have dried up causing suffering to downstream inhabitants.

Timber harvesting

From 1997 to 1999, there was an upsurge in timber harvesting which saw the incoming of “brief case saw millers”. This was through licensing of well connected individuals who did not own saw mills, but were allocated plantations which they later sold to third parties. The harvesting resulted in planting backlogs of 19,000 ha beyond the ability of the Forest Department to replant.

Timber harvesting on trust land and communal lands is unregulated. The harvesting has accelerated due to the sub-division of group ranches which are being cleared for agricultural and pastoral purposes.

Charcoal burning

In Kenya, charcoal comes mainly from dry land forests (trust lands and community lands), and is predominantly for urban use. Illegal charcoal burning continues to take place in gazetted forests especially from montane forests to supplement that from other areas.

In the trust lands and communal lands, there is general lack of rules and guidelines of managing them. As a result, residents of these lands have resorted to commercial charcoal burning as a way of life. This has led to wanton destruction of forest especially those forest areas close to urban centres. The local authorities have taken this activity as a source of revenue through licensing charcoal burning without any conditions as provided in the Forest Act, Cap 288 Section 1 Encroachment and Squatter Problem.

The conversion of forest land for activities such as farming is often destructive especially in water catchment areas. Small holder encroachment into natural forests sometimes occurs in places where boundaries are poorly demarcated. This has been particularly apparent in areas where land has been opened up such as Nyayo Tea Zones, without successful establishment of the tea crop.

Fires

An estimated 3,000 ha of government forests are lost annually to fires resulting in reduced biodiversity and catchment functions of the forest. These fires emanate from private and non-resident cultivator farms. In other cases, arsonists have set fires for various reasons such as pasture improvement, and largely with the intention of acquiring the land for settlement.

Interference in technical forest practices

The management order No. 1/82 of 26th January 1981 of the Ministry of Environment and Natural Resources entrenched the provincial administration in forest decision making contrary to the provision of the Forest Act, Cap 385 and Professional Forest Management (e.g. licensing, issuance of permits, and forest excisions). Since January, 2003, the circular has been withdrawn, and thus has restored confidence and professional practice to some extent.

Resource constraints

For a long time (1969-1997), the Forest Department relied on donor support in the implementation of its activities. When funding stopped, the gap left by the donor support was felt in all areas of forest protection and management.

Further to this, the number of forest guards continued to decrease to levels where effective policing could not be achieved e.g. one forest guard was in charge of an average of 3,000 ha of forests. No meaningful protection is expected in terms of transport, suitable and adequate arms, ammunition, communication and remuneration, considering the value of natural resource at stake.

Delay in enacting Forests Bill and adoption of new Forest Policy

As a result of the delay in enacting Forests Bill and adoption of the new forest policy, there has been slow adoption of new management interventions especially with relevant stakeholders. This has alienated them from taking active participation in halting forest degradation.

Abuse of non-resident cultivation in gazetted forests

In a few cases, gazetted forest areas have been opened up for cultivation under Non-Resident Cultivation (NRC) beyond the replanting programme of the Forest Department. These opened up areas have at times been in critical catchment areas. During preparation of these areas, the unregulated farmers have used fires as a means of cleaning plots. These fires have sometimes spread uncontrollably, and destroyed vast areas of forests. In addition, farmers have resorted to charcoal burning in forest areas near their plots.

In other circumstances people have cultivated bhang in forest areas destroying the indigenous vegetation.

Sub-division of trust lands

Some of the areas where intense forest destruction is reported are on trust lands. This has been done to give room for agriculture, and pastures for livestock keeping.

Relevant policies and legislation on forestry

Although policy and legislation formulated to govern the use of forests is fairly comprehensive, forest degradation and destruction continues. Currently, there are numerous statutes that have a direct implication on forest management. These include:

Forest Act (Cap 385)

This is an Act of Parliament for the preservation, management, enforcement, and utilization of forests and forest resources on government land.

Agriculture Act (Cap 318)

The Agriculture Act (Cap 318) has provisions for prohibiting fires, clearing or destruction of vegetation; and for protecting and preservation of soils on ridges or slopes by requiring, regulating or controlling the afforestation or reafforestation of land. When opening up of trust land forest for other uses, charcoal burning, posts and pole production, it is usually carried out on massive scale leading to wanton destruction.

Water Act (Cap 372)

The Water Act (Cap 372) provides for the management, conservation, use, control of water resource, and the gazettement of catchment areas. Through the user pays principle, provisions should be made to allocate some of the funds levied for catchment protection and restoration.

Land Adjudication (Act Cap 284) (Revised, 1977)

The Lands Adjudication Act, (Cap 284) has provisions for excluding areas of ecological importance, such as watershed areas and hill tops from being converted into other land uses. The glaring omission of these provisions, for example, is manifested in the deplorable state of Mau Catchment forest.

Other Acts of relevance to forestry sector include:

- Government Lands Act, Cap 280 (revised 1984).
- Wildlife (Conservation and Management) Act, Cap 376.
- Antiquities and Monuments Act, Cap 215 of 1984.
- Grass Fires Act, Cap 327.
- Timber Act, Cap 386 of 1972.
- Environmental Management and Coordination Act No. 8 of 1999.
- Mining Act, Cap 306.
- Trust Lands Act, Cap 288 of 1962 (revised 1970).

Concerns about forests are mainly with regard to excision and various forms of degradation ranging from forest fires, illegal harvesting of trees, quarrying and patchy cultivation with illegal crops like *marijuana* and tobacco. Of particular relevance to forestry is that, these Acts make provisions for specific and general protection and controlled utilization of trees and other forest produce on land. What is required is enhanced enforcement of these laws.

The Environmental Management and Coordination Act No. 8 of 1999 is in place and subsequently the National Environment Management Authority is operational as the agency to coordinate environmental management matters.

Recommendations for improved forest management

- The Forest Bill, 2005 and the Sessional Paper No. 9 of 2005 should be finalized to enhance forest management. This will broaden the mandate of forest department to cover all types of forests.
- Forest Department should carry out a forest resource assessment for all types to determine cover type, extent and structure.
- Streamline forest produce licence procedures.
- Forest Department should continue the partnership arrangements with forest stakeholders.
- Forest squatters and encroachers should be removed from forest estates.
- Resource allocation should be enhanced to meet the task of the Department.
- The institutions empowered to enforce specific laws relating to forest protection and conservation should carry out their mandate.
- Environmental Impact Assessment should be carried out in all cases of change in land use of forest areas.
- Forest Department should develop participatory forest management plans for all forest blocks.
- Processing and marketing of forest products should be addressed preferably through policy framework to rationalize forest utilization with a view of reducing waste in charcoal and timber production by acquiring efficient technologies for the forestry industry.
- To mainstream forestry in poverty reduction and reduce pressure on indigenous forests, deliberate attempts should be undertaken to promote non-wood tree/forest products particularly in dry lands.
- Review ban on timber harvesting.
- Kenya Forest Master Plan, 1994 which was largely ignored in the past noted that Forest Department cannot do everything within the sector. To this end, development partners must be identified and given appropriate role to their existing or potential interests or capabilities.
- Forest Department Strategic Plan is already addressing some of the observed issues; but this notwithstanding forest management should be broadened to enhance synergies from the key actors. To improve collaboration with stakeholders the Forest Department should continue to identify the various practices and critical roles for sound forest management.

The issues in forest management and their resolutions are summarized in Table 1.

Table 1: Issues in forest management and their resolution

Management Issues	Problems	Impact (Extent)	Way Forward
Excision and change in land use	• Large scale excision	• Destruction of catchments • Loss of biodiversity • Loss of forest land	• Expedite excision cases • EIA to be carried in future excision and change of land use
Timber harvesting and illegal logging	• Unregulated licensing • Increase in timber prices • Disregard of licensing procedure	• Upsurge of harvesting on farms • Planting backlogs of 19,000 ha • Loss of government revenue	• Streamlining licensing procedure • Partnership development with forest stakeholders • Community awareness in forest protection
Charcoal burning	• Lack of rules and guidelines for charcoal burning • Inefficiency in charcoal processing • Illegal charcoal burning	• Poor charcoal production in quality and quantity • Destruction of catchment sites	• Improve charcoal processing efficiency • Promote non-wood forest products • Formulate charcoal policy and regulations
Encroachment and squatters in forests	• Illegal farming and settlement • Conflicts among stakeholders	• Destruction of catchment sites • Extension of farms into gazetted forests	• Remove squatters and encroachers on forest land • Forest Department survey branch to be strengthened to fix beacons around forests
Fires	• Recurring destructive fires	• Destruction of ecosystems	• Preparation and implementation of fire plans • Community awareness on use of fires to be intensified
Interference in technical forest practices	• Deviation from proper forest management	• Poor decision making • General forest destruction	• Enact Forests Bill 2005 • Approve Sessional Paper No. 9 of 2005 Forest Policy
Ban on timber harvesting	• Illegal timber harvesting • Poor quality timber due to uncoordinated silvicultural practices	• Timber prices have skyrocketed • Loss of revenue • Destruction of trees on forests and trust lands	• Review ban on timber harvesting
Resource constraints	• Inadequate provision of resources	• Lack of logistical support to forest protection e.g. transport, arms, ammunition and communication	• Improve funding for forest programmes
Delay in enacting Forests Bill	• Slow adoption of new management intervention in forestry	• Continued degradation of forests	• Enact Forest Bill, 2005
Abuse of Non Resident Cultivation in gazetted forests	• Allocation of forest lands	• Destruction of catchments	• Coordination of all laws relating to forests

2.2 Status of Forest Conservation in Uganda

Mr. Gerishom Onyango, the Head of Forestry Inspection Division, in the Ministry of Water, Lands and Environment, Uganda presented a paper on the status of forest conservation in Uganda. In his presentation, he highlighted some country statistics, contribution of the forestry sector to Uganda's economy and the existing institutional framework. The paper is reproduced below.

Country statistics

Uganda's land area is about 236,000 km^2, and the human population stands at 25 million with an annual growth rate of 3%. It is Africa's fourth most densely populated country after Rwanda, Burundi and Nigeria. The population is predominantly rural (approx. 91.3%), and predominantly agricultural with 83% of labour force engaged in agriculture. Farming is predominantly subsistence; characterised by shifting cultivation, annual bush clearing and burning, which is the biggest contributor to deforestation.

Forests and woodlands cover approximately 4.9 million ha (24% of total land area). Table 2 shows the distribution and extent of forest cover in Uganda.

Contribution of forestry to the national economy

Employment

Forestry accounts for approximately 850,000 jobs in the form of direct employment or sale of forest products. There are 100,000 permanent employees within the areas of charcoal production, plantation management, forest industries and institutions.

Products

Fuelwood energy is the main source of energy for domestic use. Ninety percent (90%) of the population use fuelwood as the main or only source of energy. Forestry account for 16 million tonnes of domestic firewood, and 4 million tonnes of charcoal consumed annually. However, in 2000, Uganda moved into a net deficit fuelwood status.

There are 800,000m^3 of logs and 875,000m^3 of poles produced annually.

Gross Domestic Product

Forestry contribution to Gross Domestic Product is estimated at 6% with annual turn over in forestry business of approximately USD 365 million, and another USD 112 million in environmental services.

Table 2: Distribution and extent of forest cover in Uganda

Type	Government Land (ha)	Government Land (ha)	Private Land (ha)	Total (ha)
	National Forestry Authority and Local Governments	Uganda Wildlife Authority	Private and customary land	
Tropical High Forest	306,000	267,000	351,000	924,000
Woodlands	411,000	462,000	3,102,000	3,975,000
Plantations	20,000	2,000	11,000	33,000
Total Forest	737,000	731,000	3,464,000	4,932,000
Other cover types	414,000	1,167,000	13,901,000	15,482,000
Total land	1,151,000	1,898,000	17,365,000	20,414,000

Pre-1991 conservation status

In terms of institutional framework, the Forestry Division is the main managing institution for reserved forests and forests/trees on Public Land. There are several concerns with respect to the institutional framework within the forestry sector in Uganda:

- The Forest Division has little influence on forests on private and community land.
- There are negative impacts of breakdown in law and order of 1970s and early 1980s manifested in corruption and bad government policies. For example, the double production campaigns escalated deforestation rates.
- Lack of adequate funding of the Forest Division and rigid civil service procedures is unsuitable for new forest management systems, that is, sustainable forest management and collaborative forest management.
- Inappropriate old forest law (Forest Act, 1964) and policy (Forest Policy, 1988) to address root causes of deforestation.
- Dual management arrangements by Forest Division, Game Division and Uganda National Parks for some forests neighbouring game reserves and National Parks.
- No formal agreement, whereas parties are aware of their respective responsibilities. Wild animals in forest reserves were the responsibility of the Game Department that deployed game guards in the larger reserves.
- Plantation establishment by government stopped in 1976 due to lack of funds. Other silvicultural operations in existing plantations ceased leading to poor quality timber.
- Expulsion of Asians by the Amin regime led to collapse of wood industries and proliferation of pit sawing and wastage.
- Ineffective tree planting programmes for farmers that led to heavy reliance on natural forests and woodlands.

Post-1991 conservation status

The post Rio Conference change in forest management brought about a focus on sustainability, community engagement and biodiversity conservation. There have been a number of changes in this respect:

- Transfer of six major forest reserves to Uganda Wildlife Authority to enhance their conservation status.
- Forestry Rehabilitation Programme (FRP) by consortium of donors led by the World Bank.
- Preparation of management plans for some Forest Reserves, biodiversity inventory and formulation of a Nature Conservation Master Plan as one of the products of the FRP.
- New legal frameworks, that includes the Constitution, 1995; Environment Policy and Statute, 1994; the Wildlife Statute, 1996; Local Government Statute, 1997; the Land Act, 1998; and Post-Constitutional Restructuring of Government Ministries, 1998.
- Forestry Sector Review (1999-2003); which led to the transformation of Forestry Division into a semi-autonomous National Forestry Authority, the District Forestry Services and the Forestry Inspection Division.
- Formulation of a new National Forestry Policy, 2001; development of a National Forest Plan, 2002; and enactment of a new law, the National Forestry and Tree Planting Act, 2003, led to redefinition of roles, mandates, and responsibilities of all players in the forestry sector (central and local governments, the private sector, local communities and non-governmental organisations/community based organisations).

The guiding principles for forest sector development encompass the following:

- Consistency with the Constitution and Vision 2025.
- Commitment to conservation and sustainable development (today's and tomorrow's needs);
- Improvement of livelihoods (contribution to poverty eradication).
- Safeguarding the nation's biodiversity and environmental services.
- Development of partnerships in governance (clear roles for each player).

- The participation of central and local governments, private sector, civil society organisations and local communities.
- Enabling active participation and affirmative action (women, youth, elderly, disadvantaged groups);
- Respect for attributes of cultural and traditional institutions; and,
- Support to the implementation of current and future international commitments.

New Institutional Arrangements

The National Forestry Authority

The National Forestry Authority (NFA) was established by an Act of Parliament in 2003, and launched in April 2004, with start-up funds from donors and government. It is supposed to run on business principles and break even at year four. The management of Central Forest Reserves is under performance contract. The NFA provide public good services for example mapping, inventories, tree seed supply and other services on contract. Some of the current conservation initiatives under NFA include:

- Securing forest boundaries through re-surveying, boundary opening and evicting encroachers.
- Establishing soft wood plantations in partnership with the private sector and local communities both in Forest Reserves, and on private land.
- Management Plan development for the Community Forest Reserves.

Forestry Inspection Division

The Forestry Inspection Division was established under the 1998 restructuring of government ministries and the forestry technical arm of the Ministry of Water, Land and Environment responsible for:

- Policy formulation.
- Development of regulations, guidelines and setting standards for the forestry sector.
- Supervision and monitoring performance of all actors in the sector.
- Mobilization of resources and capacity building for local governments.
- Coordination of national forestry programmes

The current initiatives under the Forestry Inspection Division are:

- Recruitment into and establishment of District Forestry Services.
- Preparations of Forestry Regulations and Guidelines.
- Establishment of the National Tree Fund.
- Monitoring the implementation of the performance contract for the NFA.

District Forestry Services

The District Forestry Services was established under the National Forest and Tree Planting (NFTPA) Act of 2003, and within the new local government structures. Recruitment is open to both ex-Forestry Division staff and other forestry graduates on the market and will be conducted by the District Service Commissions. It is responsible for the management of Local Forest Reserves (LFRs), provision of technical advice to private forest owners and communities, preparation of District Forestry Development Plans, and capacity building for community based organizations.

2.3 Status, policies and legislative frameworks and challenges

Mr. George Wamukoya of WWF-EARPO presented a review on the biodiversity status, policies and legislative frameworks and challenges that exists in the conservation of mountain ecosystems. He addressed four key issues. These are the rationale for the focus on the conservation of mountain ecosystems; their threats; enabling policy, legal and institutional frameworks; and, the need to make concrete conclusions on their conservation. The highlights of this review are provided in the text that follows.

Mountain ecosystems biodiversity status and their roles

Mountain forest ecosystems are rich in biodiversity variability and endemism. For example, the afromontane forest is the rarest vegetation type on the African continent. These forest ecosystems serve as water towers of eastern Africa region. The vital water catchment areas that supply us with water are directly dependant on the montane forests.

They provide a wide range of goods and services to people living around them, and to the society as a whole, including protection from flooding and other environmental hazards. They are also vital in the conservation of soil and water resources.

In terms of their protection status, most montane forests are under one form of protection status. However, this status is generally deficient in providing mechanisms for community based conservation. Most of the montane forests are highly vulnerable to various threats which are manifested in a variety of forms. These threats include conversion and land use change; illegal logging and unsustainable harvesting practices; isolation and high fragmentation; and, fires, charcoal burning and fuelwood demand. In this sense, there are calls for sound legal instruments and administrative frameworks that will integrate and harness local communities' participation.

Policy and legal frameworks

The policy and legal frameworks for the conservation of mountain ecosystems are manifested at international, regional/sub-regional, and national levels.

At the international level, the enabling instruments include the:

- Convention on Biological Diversity, 1992 that provide for national strategies and the mountains ecosystems programme of work.
- United Nations Framework on Climate Change, 1992 – acknowledges the role of forests as carbon sinks/sequestration.
- World Heritage Convention, 1972 focuses on natural heritage of outstanding value to humanity.
- Convention to Combat Desertification, 1994 that emphasizes on land use.
- Convention on International Trade in Endangered Species, 1979 focuses on endangered species.
- Ramsar Convention, 1971 recognizes the ecological relation between wetlands and forestry ecosystems that is well known.
- Johannesburg Plan of Implementation (JPoI), 2002 that acknowledges the principles of sustainable forest management.

The regional/sub-regional instruments include the:

- Africa Convention on Conservation of Nature and Natural Resources, 1968 revised 2004–emphasizes on the importance of conservation areas.
- East Africa Community Treaty and Protocols–especially Lake Victoria Protocol and the Protocol on Environment and Natural Resources Management which emphasizes on ecosystem approach and stakeholder participation.
- The Nile Basin Initiative, 1999 with respect to the Shared Vision Programme.
- New Partnership for Africa's Development–Environment Initiative e.g. Regional Environment Action Plans.

There are also country specific national policy and legal instruments in existence. The national instruments for Uganda include:

- Environmental policy and statute–recognizes importance of montane forests.
- Forest policy and statute–emphasis is on sustainable forest management and improvement of livelihoods.
- Wildlife policy and statute–emphasis is on conservation in perpetuity and identifies responsibilities of the different actors.
- Water related policies and legislation–paradigm shift to Integrated Water Resource Management (IWRM).

In the case of Kenya, the national instruments include:

- Economic Recovery Strategy for Wealth and Employment Creation, 2003-2007–recognizes the importance of forests to other production sectors.
- Environmental Management and Coordination Act, 1999–has provisions for protecting water catchments and emphasis is on public participation in decision-making.
- New Forest Policy and Legislation, 2005–institutionalizes participatory forestry management.
- Water Policy and Water Act, 2002–provides for integrated water resource management.

Regional strategic actions

Some of the strategic actions proposed for the conservation of mountain ecosystems in eastern Africa are briefly described as follows.

Promote protection of mountain forests as water towers

This will entail practising multiple use community forestry, promotion of payment for environmental services, landscape approach to management, enhancing interconnectedness of protected areas through the promotion of protected area networks, and encouraging the creation of buffer zones or corridors.

Strengthen Community Organizations/ Institutions

The strengthening on community organizations and institutions will involve decentralization and devolution over the control and management of forests, benefit sharing among and between communities, and enhancing partnerships between communities and private sector or with civil society organizations (CSOs).

Use of Champions

One other key strategic action is the use of champions. Committed individuals are important in raising the profile of environmental issues, including that of mountain ecosystems. Championing role can have immense influence over institutional policy development and decision-making. Champions are vital as they provide continuity and impetus when interest wanes amongst other stakeholders. In his pose message to the workshop, the presenter asked: “Can we be champions for the conservation of montane water towers of East Africa?”

2.4 Rwenzori Mountains Ecosystem: trends, current situation and challenges

WWF-EARPO implements the Rwenzori Mountain Conservation and Environmental Management Project that covers Bundibugyo, Kabarole and Kasese Districts of Uganda (Figure 1). Mr. David Duli, the WWF-EARPO Uganda Projects Coordinator presented an overview of the trends, current situation and challenges facing the Rwenzori Mountains and adjacent areas in Uganda. The overview included the management objectives under the Forestry Division and Uganda Wildlife Authority. This overview is reproduced below.

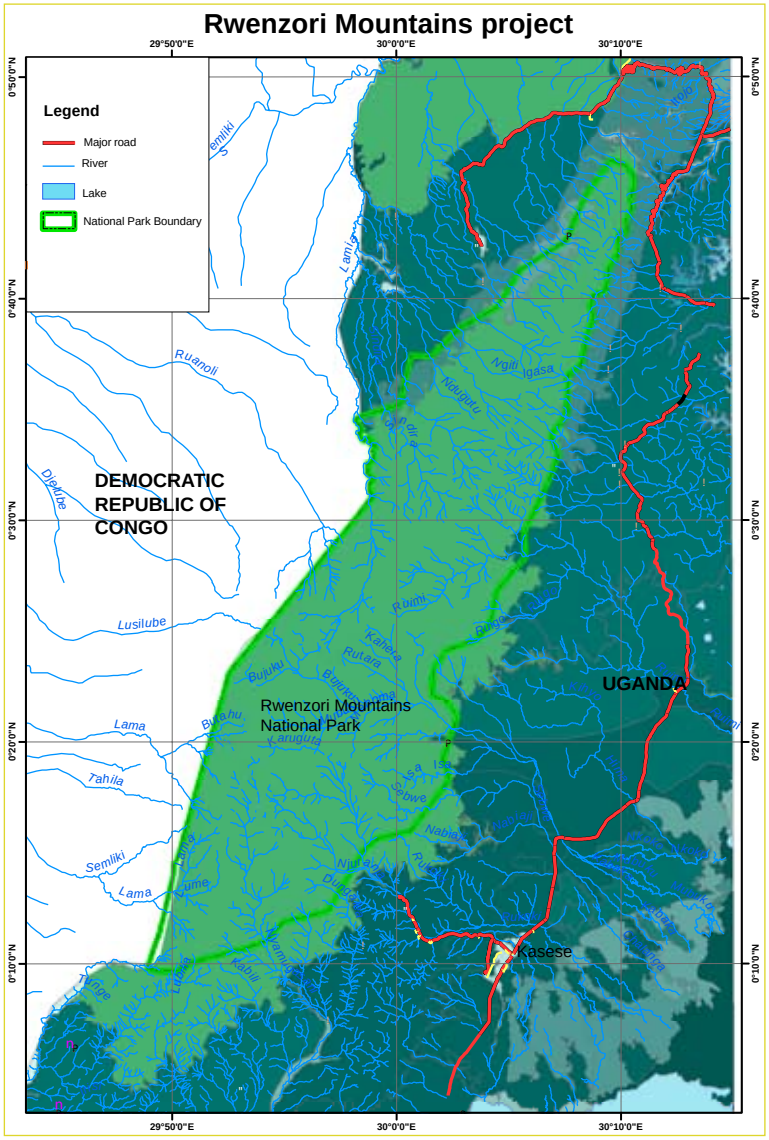


Figure 1: Rwenzori Mountains National Park and Adjacent Area (WWF-EARPO)

Management objectives under Forestry Division

Since 1906, the Rwenzori Mountains have become a paradise for botanists and mountaineers alike. The parts of the mountains 2,200 m above sea level covering 995 km^2 were gazetted as Forest Reserve in 1941 and are under the management of the Forest Department. During this tenure, the management objectives under Forest Department were: strict protective management as Uganda's largest and most valuable water catchment; and, permit the extraction of traditional forest products such as firewood, bamboo, and specified types of timber.

The Rwenzori Mountains was gazetted as National Park in 1991, and management transferred from Uganda Forest Department to Uganda National Park, now Uganda Wildlife Authority. In 1994, it was designated a World Heritage Site. From 1997 to 2001, the park was closed to tourist as a result of an insurgency, and later reopened in July 2001.

The Rwenzori Mountains Ecosystem, Uganda is rich in plant and animal life

Two mountaineers up the Rwenzori Mountains glaciers (WWF-Norway/Svein Eric)

Management objective under Uganda Wildlife Authority

Under the Uganda Wildlife Authority, the management objectives were: to afford "total protection to all flora and fauna" (UWA, 1999); and, to protect and conserve for posterity, the Rwenzori Mountains ecosystem as a National Park and a World Heritage Site, with its water catchment values, unique natural and scenic beauty and its fragile mountain ecosystem, which supports threatened, endemic and rare species of fauna and flora for the local and the international community (Purpose under the ten year period) (UWA, 2004). The Rwenzori Mountains is a catchment and important 'water tower' providing clean water to downstream populations.

Current situation and challenges

There are a number of challenges facing the management of the Rwenzori Mountains. These are briefly outlined below.

Land issues

Some of the land issues include unclear boundaries, poor land management practices outside park area, deliberate bush burning in the park and land use change.

Information flow

Lack of community awareness and inadequate information flow between park authorities and communities is an issue around the Rwenzori Mountains National Park. This issue is being addressed by Uganda Wildlife Authority staff through a dialogue process.

Water is an important product of the Rwenzori Mountains

UWA staff addresses community on park issues (WWF-EARPO/David Duli)

Poor land use practices outside Rwenzori Mountains National Park (WWF EARPO/David Duli)

Forest regeneration inside the Rwenzori Mountains National Park after burning (WWF-EARPO/David Duli)

Capacity issues

There is inadequate capacity of UWA to deploy staff as appropriate. Poor tourism infrastructure is also another capacity issue within the Rwenzori National Park.

Lack of benefits

There is lack of direct benefits from the park resources to the communities whose negative effects are usually manifested in illegal timber cutting and poaching for bush meat.

Human wildlife conflicts

This is manifested in form of problem animals and vermin that often raid crops in the neighbourhood of the Rwenzori Mountains National Park.

Pollution: the pollution of rivers and streams is a threat to the quality of waters around the Rwenzori Mountains National Park. This threat is manifested, for example, in car washing by the rivers and settlement within riparian land.

Oil exploration and drilling in the Albertine Rift Valley

HERITAGE OIL AND GAS LTD was licensed in 1997 to carry out oil exploration in the Albertine Rift Valley. They carried out seismic surveys from 1998 to 2000, including developing Environmental Impact Assessment for the surveys. Pre-drilling Audit was done by the National Environmental Management Authority. Drilling prospects were finalized in Semuliki. The press reported that there was a lot of carbon dioxide in the oil, and therefore the plan was to move northwards in the Albertine Rift.

Trans-boundary issues

These include weak cross border coordination, variation in international languages, policy and legal issues and inadequate sharing of monitoring and research information.

Crop raiding by warthogs is a common problem around the Park

Pollution of rivers and streams is a threat to the Rwenzori mountains Ecosystem

Receding glaciers

The glaciers on Rwenzori Mountains have undergone receding over the years. This worrying situation is attributed to climate change. Omaston (1996) has documented glaciations on the Rwenzori since 1906 (Table 3).

Table 3: Receding glaciers of the Rwenzori Mountains

Glacial stage	Age from 1906	Area of glacier (km^2)	Lowest snow line (metres a.s.l.)
1996	90	1.7	4,400
1955	41	4.1	4,200
1906	00	7.5	4,100

Source: Omaston, 1996

2.5 Mau Forest: trends, current situation and challenges

Mr. Christian Lambrechts from UNEP, Division of Early Warning Assessment (DEWA), Nairobi, made a slide presentation on trends, current situation and challenges of the Mau Forest. The following are the highlights of his presentation.

Location and extent of the Mau Complex

The Mau Forest Complex covers some 400,000 ha, as large as Mt. Kenya and the Aberdares combined. It is Kenya's largest forest. As a montane forest, it is one of the five main "water towers" of Kenya, together with Mt. Kenya, the Aberdare Range, Mt. Elgon and the Cherengani Hills. The Mau Forest Complex forms the upper catchments of all (but one) main rivers west of the Rift Valley, and feeds major lakes -Victoria, Turkana, Baringo, Nakuru and Natron, of which three are cross boundary. These are Lake Victoria (Nile River Basin), Lake Turkana (Kenya/Ethiopia), and Lake Natron (Kenya/Tanzania) (Table 4).

Table 4: Mau Rivers and their Drainage

River (s)	Drains to
Nzoia, Yala, Nyando, Sondu and Mara	Lake Victoria
Ewaso Nyiro	Lake Natron
Kerio	Lake Turkana
Molo	Lake Baringo
Njoro, Nderit, Makalia and Naishi	Lake Nakuru

The Mau Forest Complex is key to major conservation areas, and includes:

- South Turkana National Reserve –scenic landscape and plenty of wildlife.
- Lake Baringo Conservation Area-Important Bird Area (over 470 species).
- Lake Nakuru National Park-second most visited protected area in Kenya, a Ramsar Site (1990) and Important Bird Area (over 450 species).
- Lake Natron-main breeding area for the flamingoes in the Rift Valley.
- Maasai Mara National Reserve- world famous for big game, great migration as well as Important Bird Area (over 450 species).
- Serengeti National Park-World Heritage Site, world famous for big game and great migration and Important Bird Area (over 540 species).
- Kakamega Forest National Reserve-the only remnant in Kenya of the Guineo-Congolian forest ecosystem, with high biodiversity (birds, butterflies, plants).

Mau Forest Complex role in supporting people's livelihoods

The Mau Forest Complex supports a large majority of Kenya's population that lives in Lake Victoria Basin. This region is drained by major rivers flowing from the Mau Forest Complex with over 3 million people living in these areas. In addition, the Mau Forest Complex provides environmental services essential to crop production (continuous river flow, favorable micro-climate conditions), as well as many products (medicinal plants, firewood and grazing).

Mau Forest Complex key role in micro-climate regulation for crops

Tea growing areas are located near montane forests where conditions for optimum tea production are met. These conditions are constant moisture, soil temperature between 16 and 25ºC, and air temperature between 10 and 30ºC. The largest tea growing areas in Kenya are near the Mau Forest Complex, in particular South West Mau forest (Kericho), Tinderet and Northern Tinderet forests.

Vegetation cover change: 1973-2003

There was a substantial loss of vegetation cover experienced from 1973 to 2003 in the Mau Forest. The loss of forest cover either through excision or encroachment had substantial impacts on the upper slopes of Mau Forest Complex. Figure 2 shows a raster image of the Mau Forest Complex indicating the upper lopes where excisions were carried out in 2001.

This forest cover change is seriously manifested from 2001 to 2003 in South West Mau, Eastern Mau, Molo and Maasai Mau areas of the Mau Forest Complex. The rectangles indicate the location of major forest losses in the Mau Forest during the 2001-2003 periods (Figure 3). The details of these forest cover changes are provided in Table 5.

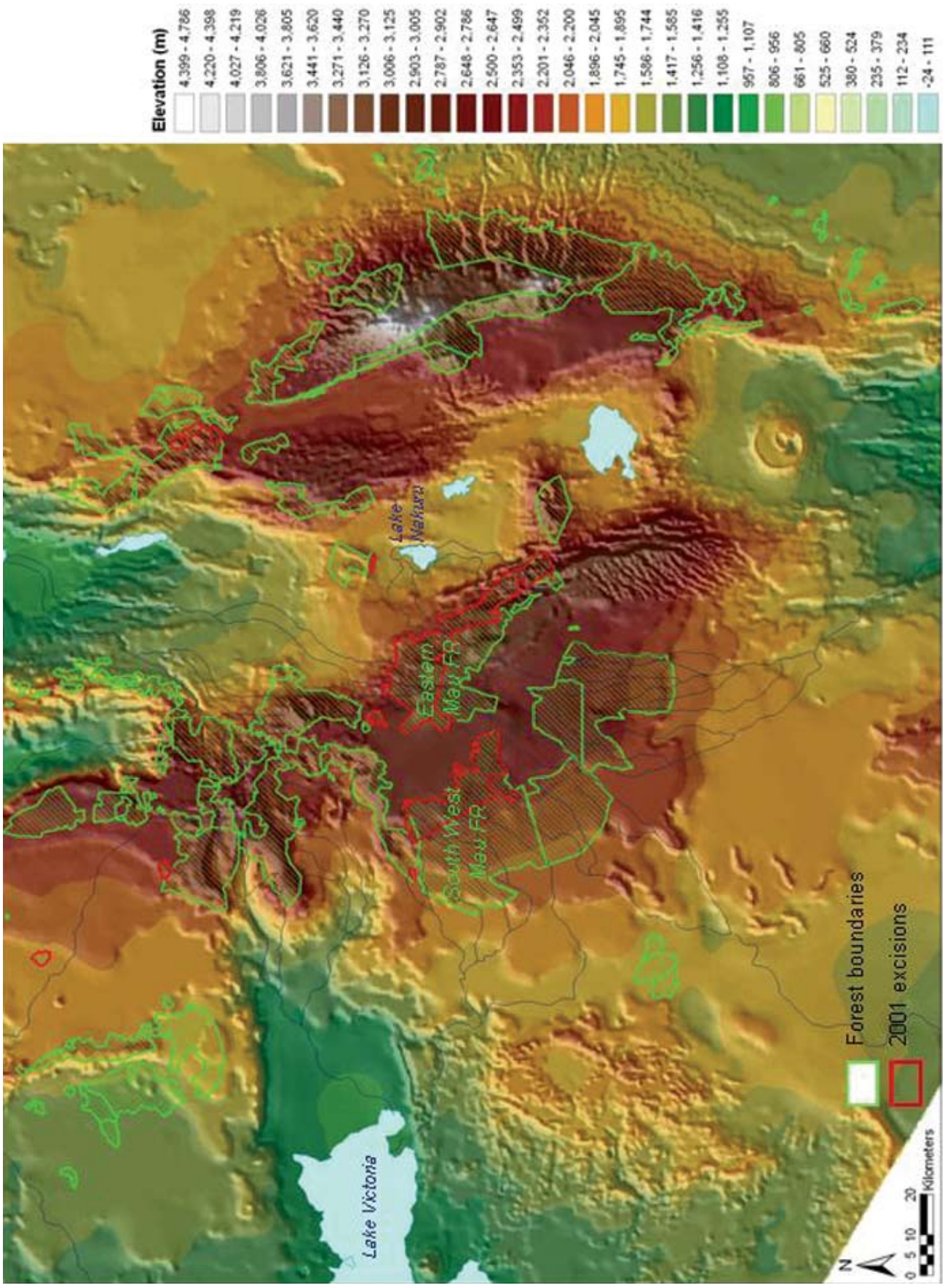


Figure 2: Upper slopes affected by 2001 excisions (August 2004)

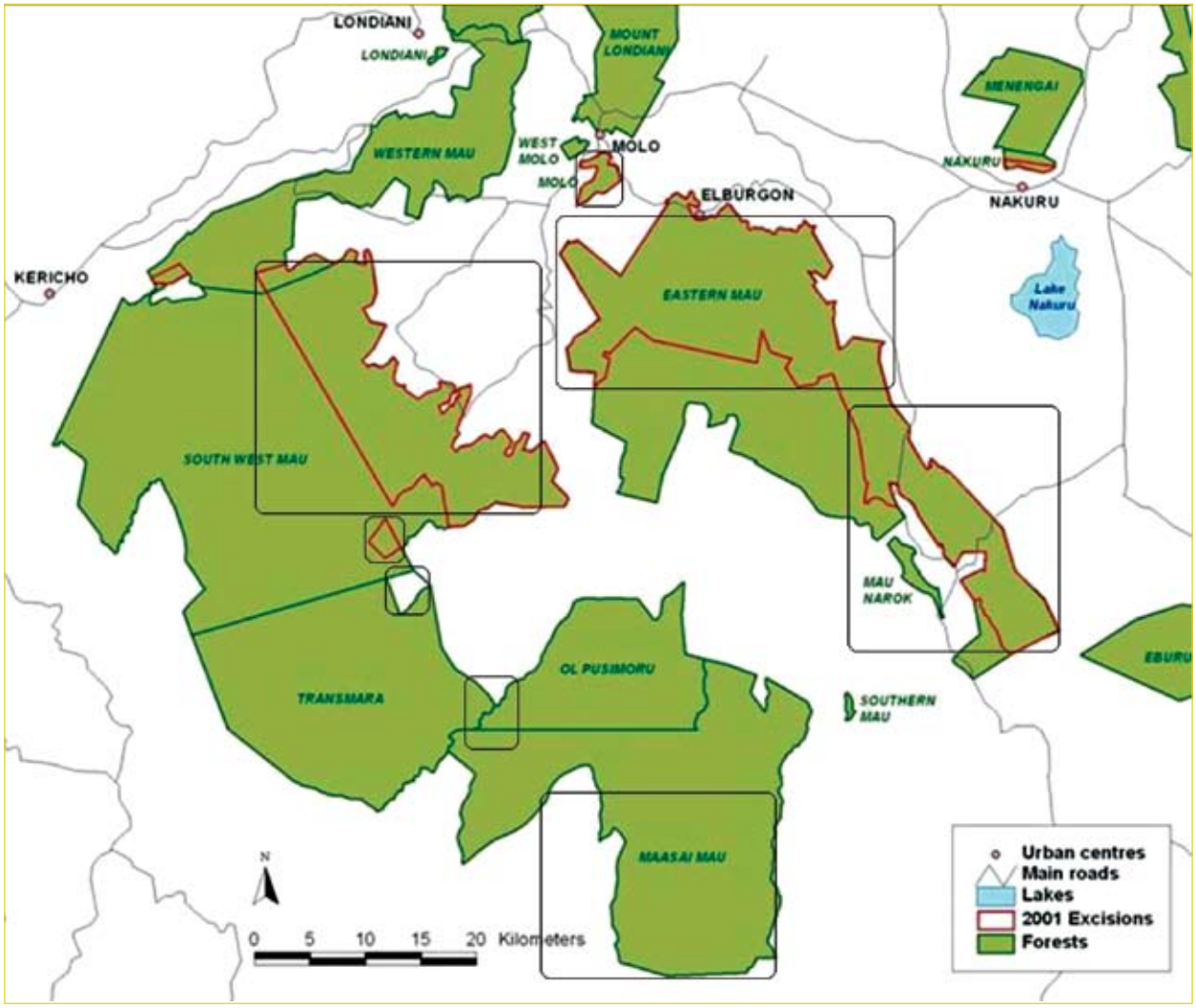


Figure 3: The location of major forest cover losses in the Mau Forest Complex (UNEP/Christian Lambrechts) (modified)

The loss inside forest reserves was 15,820 ha; while that outside forest reserves was 20,960 ha. In total, 36,780 ha, representing 49% of the dense vegetation cover in the catchment of Lake Nakuru was lost.

Mr. Lambrechts of the UNEP presented posters produced by UNEP/GRID unit, Nairobi on the impacts of the forest excisions on the main catchments (Sondu River, Molo River, Mara River and Lake Nakuru) (Annex 4), and the nature of degradation of the Lake Nakuru Catchment between 1973 and 2001 based on Landsat satellite images (Annex 5).

He also presented posters on the South West Mau Forest Reserve (2001 excision), Eastern Mau Forest Reserve (excision), and the Molo Forest Reserve that were produced in February 2002 by the Kenya Forest Working Group (KFWG) with support from the Friends of Mau Watershed (FOMAWA). This presentation also included posters on Maasai Mau Forest encroachment produced in May 2003 by the Forest Department, FOMAWA and UNEP. In a nutshell, these posters depicted serious degradation of the forests due to adverse human activities such as settlement, agriculture and logging.

This is further illustrated by photographs on Page 24 that show the forest cover loss in South West Mau, Eastern Mau, Molo and Maasai Mau forest blocks respectively.

Table 5: Extent of forest loss in the Mau Forest Complex

Forest excised	Location	Area	Status	Excision/ Encroachment
Kiptagich Settlement (Extension)	South West Mau Forest Reserve	597.32 ha	Debated before the High Court	Excision Gazette Notice: 16 February 2001; Excision Legal Notice: 19 October 2001
Maasai Mau Forest	Maasai Mau	46,278 ha	Not gazetted; Managed by Narok County Council	Encroachment
Kiptagich Tea Estate	Transmara Forest Reserve	937.7 ha	Gazetted forest	Excision Gazette Notice: 3 March 1989; Excision Legal Notice: none
Private Estate	Transmara Forest Reserve	~200 ha	Gazetted forest	
Molo Forest	Centre of the upper catchments of the Molo River	902 ha		Clear cut and excised in 2001

Source: The East Africa Wildlife Society and Kenya Forests Working Group (2004)

2.6 Private sector participation in montane forests conservation

Using a case study of the Mau Forest, Mr. George Wamukoya briefed the participants on the role of the private sector in the conservation of montane forests. The activities of WWF Eastern Africa Corporate Club at the Mau Forest were highlighted, noting that WWF-EARPO strategy is based on three partnership pillars: implementation of individual projects, that involving joint projects, and leadership in corporate social responsibility.

2.7 Plenary discussions

The plenary discussions resulted in a number of issues that are outlined below:

- The subject discussed was clearly a sensitive one, involving wanton destruction of natural resources. It was felt that WWF had put substantial resources in conservation of the catchment of Lake Nakuru, and it is quite distressful to note that some of the vegetation initially available was gone.
- Another concern relates to the alleged non involvement of the Forest Department of Kenya in the Mau forest cover study.
- The strong power of information was appreciated, with an urge to share information concerning the Mau Forest.

Figure 13: South West Mau Forest Reserve (2001 excisions) (UNEP/Christian Lambrechts)

Figure 15: Molo Forest Reserve (Excision) (February 2002) (UNEP/ Christian Lambrechts)

Figure 14: Eastern Mau Forest (Excision) (UNEP/ Christian Lambrechts)

Figure. 16: Maasai Mau Forest (Encroachment) (UNEP/ Christian Lambrechts)

- Whereas the use of law has been tried in the Maasai Mara with some level of success, failure to involve community was identified as one of the failures amongst stakeholders. It was strongly recommended that dialogue be extended to include illegal grazing, among other issues.
- It was stressed that the concept of community forest management should not be embraced without strong guidelines from government institutions. It was also noted that government institutions have been falling away for the last 15 years.
- The scope of the workshop was considered rather narrow, with a focus only on forested landscape.
- Dual jurisdiction in forest management sometimes abused is also a problem in Kenya, just like in other countries.
- What constitute the concept of community was discussed with no clear answers on its legal definition. However, in the Kenya's context distance from a forest, the primary users and whether an institutional representation is registered or not define a community.

3.0 MOUNTAIN ECOSYSTEMS STRATEGY FORMULATION

3.1 Working groups

This session was led by team leaders Philip Bubb and George Wamukoya. Mr. Wamukoya highlighted the montane ecosystem status and threat, policy and legislative frameworks at international, regional and national levels. Some of these are already discussed in section 2.3.

The working session involved the identification of key factors and opportunities to enhance long term protection, management and restoration of montane forests in East Africa. Mr. Philip Bubb led in the formation of Working Groups and tasks were assigned to them. There were three groups formed to deliberate on (a) the regional perspective; (b) the Mau forest, and (c) the Rwenzori Mountains. The results of the Working Groups were presented after the field visit to the Mau Forest.

3.2 Field visit to Mau Forest

On Thursday, August 4, the workshop participants were facilitated on a fact finding mission to Mau Forest. Three areas of interest were visited: Murinduku Primary School; Kuresoi Tree Planting Site in Western Mau that is managed by the Forest Department and where the team joined the school community and local people to plant trees, and Mariashoni, an excised area of the forest which is a settlement scheme but not legally formalized.

The team interacted with Murinduku school community, and was introduced to their tree planting activities. They were also introduced to the partnership exhibited by the school community and WWF-EARPO through enthusiasm and participation. After tree planting at Kuresoi, the team visited an excised area under settlement which showed some natural regeneration of bamboo.

3.3 Results of the working groups

Further working and plenary sessions were held on Friday, August 5, to develop a conceptual framework of the key factors, and opportunities to enhance long term protection, management and restoration of montane forests in East Africa. In this exercise, a shared vision was developed with goal and objective for the eastern Africa region. Respective vision and objectives for Mau Forest and Rwenzori Mountains were developed. Each Working Group presented the findings that are shown in Boxes 1-3.

Tree planting at Kuresoi Tree Planting Site, Mau (WWF-EARPO/David Maingi)

Vision

Healthy and productive mountain ecosystems contributing to sustainable economic growth, peace and stability for the well being of Eastern Africa people and beyond.

Goal

A regional strategic framework for managing Eastern Africa mountain ecosystems as water towers developed and implemented by 2011

Objectives

- Establish base line data and information for mountain ecosystems: inventory of interventions
- Harmonize existing national and regional instruments (NEMA, EAC, NEPAD & MEAs)
- Develop capacity for planning and management for mountain ecosystem

- Establish regional network for mountain ecosystems
- Develop criteria and indicators for sustainable development: certification of products and services (wood and non wood); development of economic indicators; and also ecosystem status indicators.
- Develop conflict-resolution mechanisms for mountain ecosystem management.

The output of these processes was the development of a strategy for the conservation and sustainable use of montane forests in eastern Africa as water towers (Table 6). Significant outputs of this workshop are being published separately as “Water towers of eastern Africa: Policies, issues and vision for community-based protection and management of montane forests”.

Box 1: Eastern Africa Shared Vision (Working Group 1)

Vision:
Healthy and productive mountain ecosystems contributing to sustainable economic growth, peace and stability for the well being of Eastern Africa people and beyond.

Goal
A regional strategic framework for managing Eastern Africa mountain ecosystems as water towers developed and implemented by 2011

Objectives
- Establish base line data and information for mountain ecosystems: inventory of interventions
- Harmonize existing national and regional instruments (NEMA, EAC, NEPAD & MEAs)
- Develop capacity for planning and management for mountain ecosystem
- Establish regional network for mountain ecosystems
- Develop criteria and indicators for sustainable development: certification of products and services (wood and non wood); development of economic indicators; and also ecosystem status indicators.
- Develop conflict-resolution mechanisms for mountain ecosystem management.

Box 2: Rwenzori Mountains Ecosystem Vision and Objectives (Working Group 2)

Vision:
The Rwenzori Mountains ecosystem with its water catchment values, unique natural and scenic beauty sustainably managed and providing equitable benefits for local, national, regional and international communities.

Objectives
- Develop institutional framework for collaborative management and conflict resolution.
- Develop and support implementation of ecosystem management plans as integral elements of the district development plans.
- Identify and promote local enterprises for improved livelihoods and ecosystems conservation.
- Develop capacity and carry out information gathering, management and dissemination.
- Carry out education and advocacy for sustainable ecosystem management.
- Strengthen managerial and infrastructural capacities at community, local governments and national levels.

Box 3: Mau Forest Ecosystem Vision and Objectives (Working Group 3)

Vision:

Well managed Mau Complex ecosystem providing goods and services for sustainable livelihoods to the communities and contributing to local, national and regional economic growth.

Objectives

- To develop a framework for multi-stakeholder forum.
- To secure boundaries of the catchment areas and resolve conflicts.
- Develop an Ecosystem Management Plan and institutional arrangements for its implementation.
- Enhance capacity for integrated and participatory ecosystem management.
- Restore the degraded ecosystem.
- Identify and promote activities for improved (and sustainable) livelihoods.
- Enhance knowledge on the ecosystem functioning for planning and management: perform assessments of the ecosystem; carry out research, monitoring and evaluation; and, socio economic surveys.

Table 6: Strategy for the conservation and sustainable use of montane forests in eastern Africa.

Shared Vision	Goal	Objectives
Eastern Africa Healthy and productive mountain ecosystems contributing to sustainable economic growth, peace and stability for the well being of Eastern Africa people and beyond.	A regional strategic framework for managing Eastern Africa mountain ecosystems as water towers developed and implemented by 2011.	• Establish base line data and information for mountain ecosystems: inventory of interventions. • Harmonize existing national and regional instruments (NEMA, EAC, NEPAD & MEAs). • Develop capacity for planning and management for mountain ecosystem. • Establish regional network for mountain ecosystems • Develop criteria and indicators for sustainable development: certification of products and services (wood and non wood); develop economic indicators; and also ecosystem status indicators. • Develop conflict-resolution mechanism for mountain ecosystem management.
Vision	**Objectives**	
Mau Forest Complex Well managed Mau Complex ecosystem providing goods and services for sustainable livelihoods to the communities and contributing to local, national and regional economic growth.	• To develop a framework for multi-stakeholder forum. • To secure boundaries of the catchment areas and resolve conflicts. • Develop an ecosystem management plan and institutional arrangements for its implementation. • Enhance capacity for integrated and participatory ecosystem management. • Restore the degraded ecosystem. • Identify and promote activities for improved (and sustainable) livelihoods. • Enhance knowledge on the ecosystem functioning for planning and management: perform assessments of the ecosystem, carry out research, monitoring and evaluation; and socio economic survey. • Develop conflict-resolution mechanism for mountain ecosystem management.	
Rwenzori Mountains The Rwenzori Mountains ecosystem with its water catchment values, unique natural and scenic beauty sustainably managed and providing equitable benefits for local, national, regional and international communities	• Develop institutional framework for collaborative management and conflict resolution. • Develop and support implementation of Ecosystem management plans as integral elements of the district development plans. • Identify and promote local enterprises for improved livelihoods and ecosystems conservation. • Develop capacity and carry out information gathering, management and dissemination. • Carry out education and advocacy for sustainable ecosystem management. • Strengthen managerial and infrastructural capacities at community, local governments and national levels.	

4.0 WORKSHOP WRAP-UP

4.1 Recommendations

The workshop agreed on the production of a workshop report, and the refinement of the strategy through East African Community meetings, national and regional consultative meetings. This will be followed by the definition of strategy implementation modalities.

4.2 Closing remarks

Wilson Kipkore

In his closing remarks, Dr. Kipkore admired the new initiative to integrate regional perspectives into the conservation of mountain ecosystems. He was pleased to see more environmental issues tackled jointly; noting that there was need to work and approach things holistically. He said that partnership is a concept that everyone has always wanted to embrace; and this opportunity would widen and strengthen the cooperation and collaboration. At the regional level, he longed for the partnership of other partners such as Burundi and Rwanda.

Dr. Kipkore thanked WWF-EARPO for the capacity building initiative, and also for taking the initiative to invite other organizations to tackle mountain ecosystem issues. Noting that the need for synergy had been realized, the next step was to maintain that momentum.

George Wamukoya

Mr. Wamukoya said that WWF-EARPO is pleased with the good response and participation during the workshop. He thanked Ms Nina Bhola, WWF-EARPO Technical Programme Assistant for the hard work she exhibited.

Wilfred Matagaro

Engineer Wilfred Matagaro of the Water Resources Management Authority thanked everyone for their participation, saying that he had been enlightened on what WWF is doing. He thanked WWF for the workshop organization, and taking the initiative to have the workshop participants explore the Mau Forest; and UNEP for the good work done. It was clear that each one of the participants had known what happens in the Mau Forest.

He said that water is a big issue to the Water Resource Management Authority, especially in the dry season. He gave the example of Ewaso Kedong crisis that has been attributed to deforestation.

He applauded the forum, having been a nice one, and hoped to work with WWF, Water Users Association, Ogiek community, Forest Department and other stakeholders in an effort to increase the forest cover in the Mau. He thanked the Ugandan participants, saying that the workshop had provided the opportunity for the sharing of information that hopefully would help in the conservation of Rwenzori Mountains.

ANNEXES

Annex 1: List of participants

No	Name	Organization
1	Patrick Oloo	Ministry of Water Resources Management and Development
2	Kodia Bisia	Provincial Director of Environment
3	David Ole Nkere	Narok County Council
4	Richard Odongo	Kenya Wildlife Service
5	Florence Chege	IUCN, The World Conservation Union
6	Ernest Ambune	Forest Department, Kenya
7	Eric Nahama	Forest Department, Kenya
8	Alfred Nyaswabu	Forest Department, Kenya
9	Jacob Mwanduka	Friends of Mau Watershed (FOMAWA)
10	Jackson Towet	Ogiek Welfare Council
11	Dr. Dominic Walubengo	Forest Action Network
12	Francis Ole Nkako	Ewaso Ngiro South Development Authority
13	Dr. Wilson Kipkore	East Africa Community
14	Dr. Kwame Koranteng	WWF-EARPO
15	Tom Lonzi	Forest Department, Kenya
16	George Wamukoya	WWF-EARPO
17	David Maingi	WWF-EARPO
18	Nina Bhola	WWF-EARPO
19	Alex Obara	WWF-EARPO
20	Fabian Musila	WWF-EARPO
21	Christian Lambrechts	United Nations Environment Programme
22	Charles Okol	National Environment Management Authority, Uganda
23	Alex Muhweezi	IUCN, Uganda Programme Office
24	Gerishom Onyango	Assistant Commissioner, Uganda
25	David Duli	WWF Uganda Projects Office
26	Charles Tumwesigye	Uganda Wildlife Authority
27	Jonathan Mibey	Narok Forest Officer
28	Philip Bubb	UNEP-World Conservation Monitoring Centre
29	Peter Cheruiyot	Ogiek Rural Integrated Project
30	Dr. Walter Knausenberger	USAID/REDSO
31	Daniel Mbithi	Forest Department, Kenya
32	Martin Ole Kamuaro	Sher Agencies
33	Dr. G. J. Njogu	Ewaso Ngiro South Development Authority
34	Musa Cheruiyot	WWF-EARPO
35	Dr. Nehemiah Rotich	United Nations Environment Programme
36	Eng. Wilfred Matagaro	Water Resources Management Authority
37	Michael Koikai	Mara Conservancy

Annex 2: Workshop programme

Tuesday, August 2, 2005 Arrival of Participants

Wednesday, August 3, 2005

08h30 – 09h00	Registration of Participants
Session 1:	**Opening Ceremony**
Chairperson:	**Kwame Koranteng**
09h00 - 10h00	**Introductions and aims of the Workshop:** George Wamukoya, WWF EARPO, Nairobi, Kenya.
	Welcome Remarks: Kwame Koranteng, WWF-EARPO Regional Representative, Nairobi, Kenya.
	Brief Remarks: Nehemiah Rotich, Head, Biodiversity and Biotechnology Unit, UNEP, Nairobi, Kenya.
	Group Picture
10h00 - 10h30	**Tea/Coffee Break**
Session 2:	**Conservation Status of Mountain Forests in East Africa and Country Examples (Rwenzori and Mau)**
Chairperson:	Kwame Koranteng, WWF EARPO, Regional Representative, Nairobi, Kenya
10h30 – 10h45	Status of Forest Conservation in Kenya – Chief Conservator of Forests
10h45 – 11h00	Status of Forest Conservation in Uganda – Ministry of Water, Lands and Environment/Uganda Forest Authority
11h00 - 11h30	Status, Policies and Legislative Framework and Challenges – George Wamukoya, WWF EARPO, Nairobi, Kenya
11h30 - 11h45	Rwenzori: Trends, Current Situation and Challenges –David Duli, WWF-EARPO
11h45 - 12h00	Mau: Trends, Current Situation and Challenges – Christian Lambrechts, UNEP DEWA, Nairobi, Kenya
12h00 – 12h15	Plenary Discussions
12h15 – 12h45	The role of private sector participation in the conservation and management of montane forests a case of Mau forest – WWF Corporate Club
12h45 – 13h00	Formation and Work Program – Philip Bubb, UNEP-WCMC, Cambridge, UK
13h00 - 14h00	**Lunch**
Session 3:	**Working Group**
Team Leaders: Philip Bubb/George Wamukoya	
14h00 -15h45	**Working Session:** Identification of key factors and opportunities to enhance long term protection, management and restoration of montane forests in East Africa
15h45 - 16h00	**Tea/Coffee Break**
16h00 - 17h30	Plenary Session
18h30	**Ice Breaking Cocktail**

Thursday, August 4, 2005: Field Trip to Mau Forest

08h30 - 16h30	Field visit to Mau forest (East and West Mau)

Friday, August 5, 2005

08h30 – 10h30	**Plenary session:** Developing a conceptual framework of the key factors and opportunities to enhance long term protection, management and restoration of montane forests in East Africa
10h30 – 11h00	**Tea/Coffee**
11h00 – 12h30	**Working session:** Draft a strategic plan for the conservation and sustainable use of montane forests in East Africa as Water Towers
12h30 – 13h30	Recommendations and follow-up actions
	Closing Remarks – UNEP
13h30	**Lunch**
	Departure of Participants
15h00 -18h00	WWF and UNEP-WCMC Meeting (for WWF, UNEP-WCMC and EAC only).

Annex 3: Keynote address by the Chief Conservator of Forests, Kenya

The WWF-EARPO Regional Representative,

Workshop Participants,

Ladies and gentlemen,

It is with great pleasure that I join you this morning as you deliberate on capacity building for the promotion of community based biodiversity conservation of mountain forests in East Africa.

We are here because of the importance we attach to forests as reservoirs of biodiversity. Since mankind existence depends ultimately on the biological world as exemplified in the classical food chain, it is important to underscore the importance of forests as biological systems.

East Africa is endowed with diverse forest formations ranging from tropical rain forests and montane forests to coastal forests, dry forests and semi-arid bush land. Plantation forests play a key role in the industrial sector for timber and timber products, papers and particle boards.

Because of their diversity, these forests are important in terms of biodiversity, ecological functions, timber, tourism development, habitat for wildlife, subsistence needs of communities and for scientific reasons.

There exist different management options depending on several criteria but the over-riding management objective is usually the primary value that is attached to these forests. Subsequently, this has given a mosaic of management regimes e.g. forests managed for timber production, fodder in the rangelands, non-wood products, watersheds, wildlife parks, or biodiversity conservation.

The state of natural resources directly affects the welfare of human beings. To a large extent, forests resources are a foundation on which rural and national economies rely for their sustainability such as hydro electric power, soil and water conservation, subsistence, raw material, fisheries, agriculture etc.

The natural forests role as sources of streams and rivers affects the livelihood of downstream communities. The control of use of water from these forests has in the past been a source of conflict sometimes resulting in heavy losses of life and property. In times of serious drought, these forests are the only refuge for some of the pastoral communities within the neighbourhood.

With diverse economic growth, population increase and changing consumption patterns, demands on forests resources to provide its myriad of "free" services will continue to increase thereby compromising sustainable forest management. For all these reasons and possibly others, appropriate management strategies should be devised to rationalize the use of this fixed resource.

Communities have over generations managed and utilized these forest resources to meet their basic needs. However, the disruption of the traditional patterns and practices demand new interventions in the management of these resources. It is now generally accepted that broad stakeholder participation is required in the management of the natural resources.

There will be need for exchange of experiences and practices in forest management at the regional and international level. This forum is one such avenue at which the knowledge applied in the sustainable management of forest resources will be shared. The traditional forestry management by the state is no longer able to stop forest resource degradation. This calls for strategies to bring on board wide level of participation by all stakeholders.

Here in Kenya, the current forest policy and legislation which have been reviewed and are in Parliament for enactment, clearly spell out the role of community participation in forest management. Mechanisms have been proposed for recognizing the role played by stakeholders and suggested incentives for their continued support in forest management.

The various legal instruments touching on forestry and environment need to work towards complementary rather than competition and

duplication of roles and functions. Some of these are:-

- The Water Act, Cap. 372
- Wildlife (Conservation and Management) Act, Cap 376
- Environmental Management and Coordination Act No. 8 of 1999
- The Trust Lands Act, Cap 288 (Revised 1970)
- Agriculture Act, Cap 318

The absence of a comprehensive land use policy has for a long time made it difficult to maximize the potential of a given forest because of the sectoral approach adopted in planning and allocation of resources. To arrive at the best management option, several considerations should be made, including the principle of comparative advantage, multiple use concept and ecosystem potential so that the best production mix of goods and services is applied for the common good of all.

Cross border resources manifest unique characteristics because of divergent value systems across the cultural and political divide. While it is commendable to look at cross border resources along political boundaries that transcend them, it is not a sufficient management strategy to guarantee sustainable interactions of life support systems. A holistic and regional approach should also be given through consideration in natural resource planning.

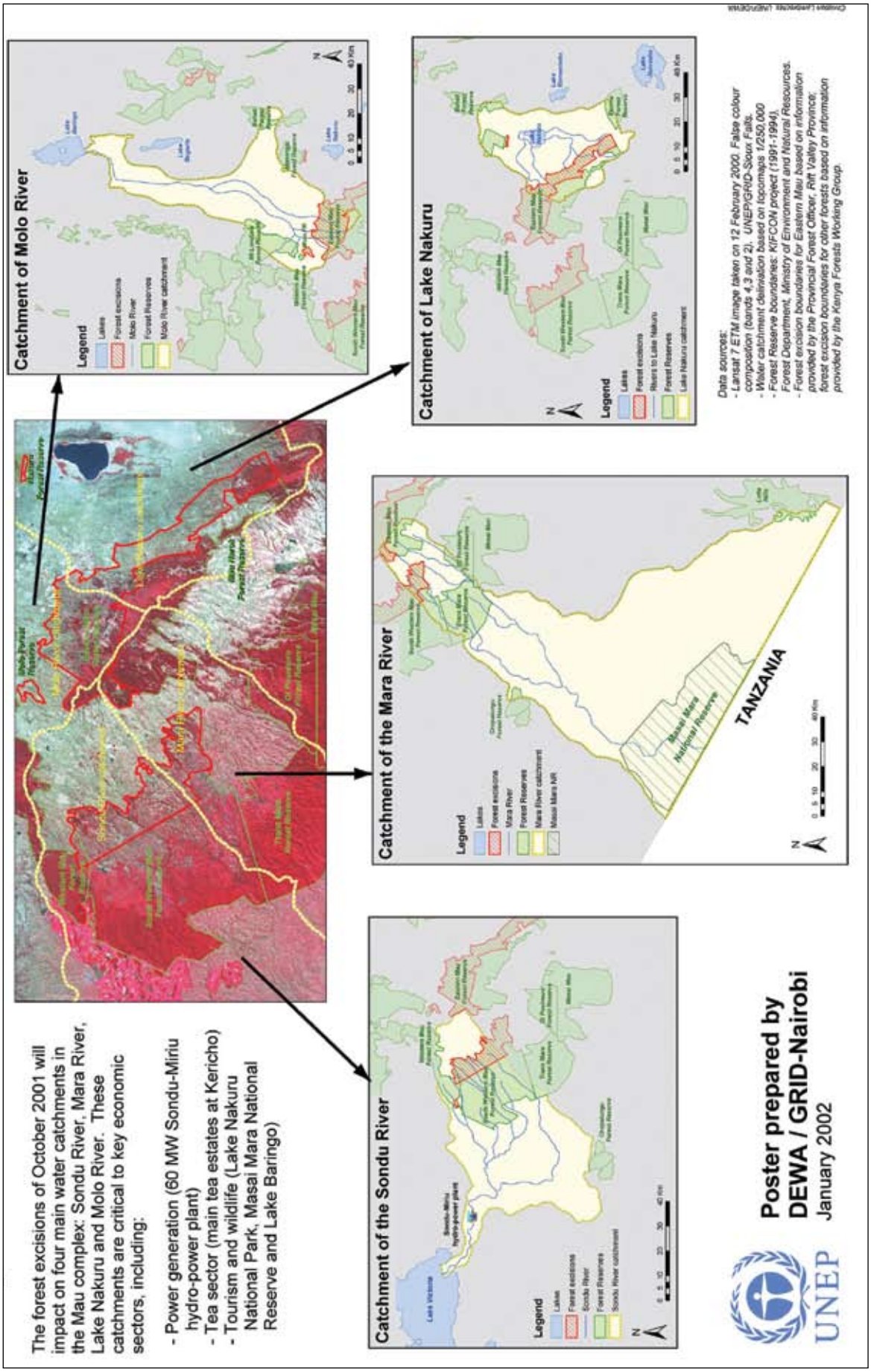
For example, the Mau Forest in Kenya is the source of Mara River that transcends through Maasai Mara Game Reserve to the Serengeti National Park. Any land use change in Mau will affect regular flow of water which is a vital component for the existence of the park and the population downstream.

Ladies and gentlemen, I would like to thank the WWF East Africa Regional Programme Office for making it possible for all of us to gather here and share our experiences.

I wish you fruitful deliberations and a pleasant stay in Nakuru.

Thank you.

Annex 4: Impact of the 2001 forest excisions on main catchments in the Mau Forest Complex



Annex 5: Degradation of the catchment of Lake Nakuru (1973-2001)

The poster illustrates the degradation of the vegetation cover in the catchment of Lake Nakuru between 1973 and 2001, based on Landsat satellite images.

With the latest forest excisions of 2001, 53 % of the dense vegetation cover will be lost since 1973.

Vegetation cover changes in the catchment of Lake Nakuru*

Forest Reserves	1973 (ha)	2001 (ha)	Changes (%)
Closed forest	33,230	13,680	-59%
Bush / open forest	5,441	5,665	4%
Outside Forest Reserves			
Closed forest	8,509	7,323	-14%
Bush / open forest	28,287	8,507	-70%
TOTAL	75,467	35,175	-53%
% of total catchment area	46%	21%	

* Changes are based on a preliminary interpretation of Landsat images. No ground truthing exercise has yet been undertaken.

Legend

- Lake Nakuru catchment
- Nakuru town
- Forest Reserve boundaries
- Lake Nakuru National Park

Data sources:
- *Landsat MSS image taken on 19 March 1973. False colour composition (bands 4,3 and 2). UNEP/GRID-Sioux Falls.*
- *Landsat ETM image taken on 12 February 2000. False colour composition (bands 4,3 and 2). UNEP/GRID-Sioux Falls.*
- *Forest Reserve boundaries: KIFCON project, Forest Department Ministry of Environment and Natural Resources.*
- *Forest excision boundary based on information provided by the Provincial Forest Officer, Rift Valley Province.*

UNEP

Poster prepared by DEWA / GRID- Nairobi

January 2002

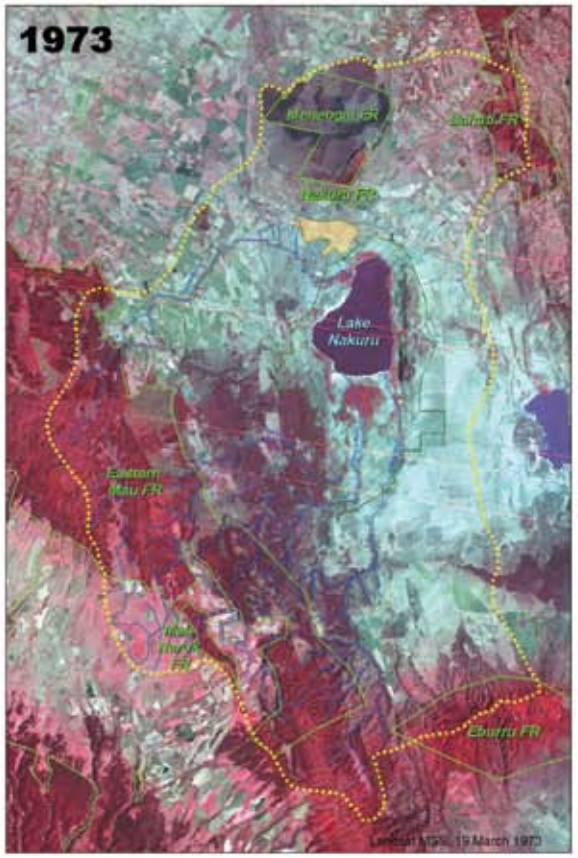
Lake Nakuru National Park is the second most visited protected area in Kenya. It hosts the world's largest concentration of flamingos, as well many of the wildlife that makes Kenya a highly valued tourism destination, including lions, leopards, rhinos, buffalos. In its total area of 18,800 hectares, there are over 450 birds species and 56 mammals species. Recognized as a wetland of international importance, Lake Nakuru was declared a Ramsar Site in 1990.

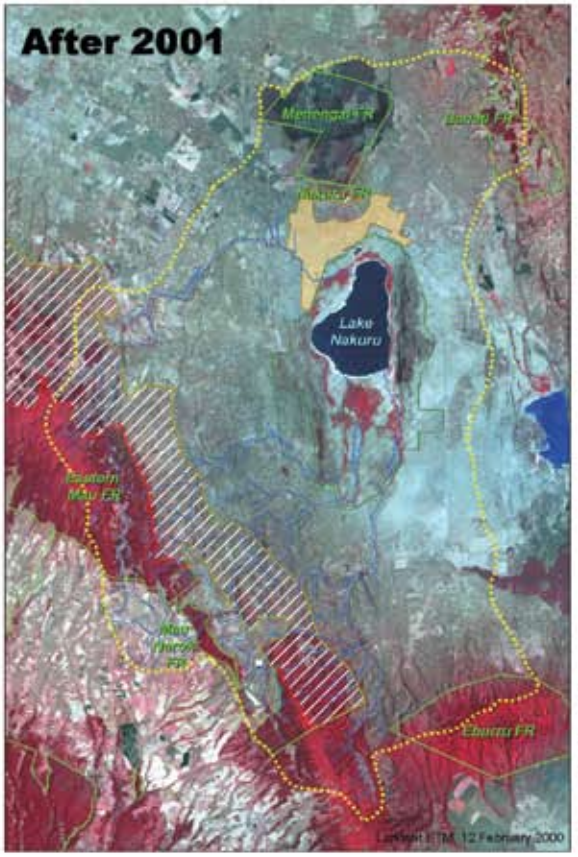
One of the most pressing threats to the lake is the degradation of its catchment which is most likely to increase fluctuation in water flow and decrease water quality.

On 16 February 2001, the Government of Kenya announced its intention of excising 35,301 hectares of forest in Eastern Mau Forest Reserve.

This excision took effect in October 2001 by Legal Notice 142 that appeared in the Kenya Gazette Supplement of 19 October 2001.

With this excision, most of the forest cover in the upper catchment of the main rivers that feed Lake Nakuru will disappear. The excised forest area is represented on the map below in white hatching.





WWF is one of the world's largest and most experienced independent conservation organizations, with almost 5 million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

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