ANNEX 2

CONVENTION ON BIOLOGICAL DIVERSITY

Kenya
National Capacity Self-Assessment
Project

INITIAL THEMATIC ASSESSMENT REPORT IN

BIODIVERSITY

March 2005

1. INTRODUCTION

1.1 Background

Kenya is rich in the abundance and diversity of biological resources, which are manifested in its wildlife and varied ecosystems. The large mammal populations of the expansive grasslands of East Africa have long been recognized as a world heritage. In addition, there is a wealth of biotic resources within forests, and the innumerable endemic species that are restricted to one or a few localities. In recognition of this, the Kenya government has designated a significant proportion of its territory as wildlife sanctuaries that extend to rangelands, forests, lakes, rivers, wetlands, and the national marine waters. Biodiversity issues normally come under the forestry, wildlife, fisheries and natural resources sectors of government.

The Kenya government has formulated comprehensive policies for the sustainable conservation and utilization of biodiversity. These policies are implemented through an institutional framework that is coordinated by the National Environmental Management Agency (NEMA). Over the years, there have been efforts to implement these policies within an overall, inter-sectoral development framework. However, strategies to achieve these objectives have not been fully developed or implemented. The main impediments to this have been the lack of sufficient capacity and resources to effectively mobilize and link activity within and between the various sectors.

The capacity to implement the Convention on Biological Diversity (CBD) was identified by the 4th Conference of Parties (COP IV) as the critical missing element. Consequently, the Global Environment Capacity (GEF) in partnership with the United Nations Development Programme (UNDP) took measures to comprehensively address capacities at country level through the Capacity Development Initiative (CDI). It is in this context that the country is in the process of assessing its capacity needs for the implementation of the Convention.

1.2 The Biodiversity Resource Base

Kenya has physical and biological resources that are of considerable domestic and intrinsic value. There are an estimated 35,000 known species of animals, plants, and micro-organisms in the country. This diversity is a manifestation of the array of different habitats inherent in the major vegetation eco-zones:

Forests

The Guineo-Congolian

Kenya possesses the easternmost fragments of the Guineo-Congolian region, now restricted to the degraded forests of Kakamega and the adjacent Bologe forest. Although not rich in national endemics, this region is the only remaining patch of one of Kenya's more species rich biotic communities. The entire area remains under intense pressure from encroachment and unsustainable extractive use.

The Zanzibar-Inhambane mosaic

Along the coast, Kenya once possessed a narrow strip of vegetation (50-100 km wide) belonging to the Zanzibar-Inhambane regional mosaic. Due to population pressure and changes in land use, the forest

component of this vegetation is now highly fragmented. Each surviving region shows a high level of endemism and all remaining patches are under threat. Only two, Shimba Hills and Arabuko Sokoke, currently receive any protection.

The Somali-Maasai region

These upland dry-evergreen regions now occur only as relic stands along the eastern edges of the Rift valley. The most important protected areas are Ol Donyo Sabuk and Nairobi forest reserve. Small parts of the latter lie within Nairobi, in particular City Park and the Nairobi Arboretum. These city green zones have lately been encroached upon by commercial and residential property developers.

The Afro-Montaine region

This is the best studied forest type in Kenya, growing on the higher reaches of the Rift Valley escarpment and the Central highlands. These forests all serve important watershed functions in addition to providing sites for high plant and animal diversity.

The woodland-bushland-grassland mosaic

Most of Kenya is covered by an extensive woodland-bushland-grassland vegetation mosaic. True woodlands border the highlands of central and western Kenya, but gradually diminish to give way to bushland thickets and on to arid bushlands that border semi-deserts. Thorn woodlands are probably derived from the forests and found in the immediate vicinity of the forests from Ukambani to the Lake Victoria lowlands and as far north as Samburu. Other woodland areas include most coastal inland areas stretching from the Shimba hills in the south and northwards to Malindi.

Thicket and bushland areas consist of about 50% shrubs and small trees growing closely together. The ground cover is usually grass, but is severely limited by soil erosion in many locations. This type of vegetation covers most of northern, eastern, and southern Kenya. In the north, it gradually down into semi-deserts and deserts around Lake Turkana. Most national parks and game reserves like Amboseli, Tsavo, Meru, etc. are located in these areas.

Extensive grasslands occur in Kenya, especially in the Rift Valley. They are found particularly on the Laikipia-Lerogi plateau, the Kapiti and Loita plains. Grass also forms the principal undergrawth of rangelands.

Rocky desert stretches occur in northern Kenya particularly in the areas east of L.Turkana. The best known are Chalbi an Kaisut. They grade into large semi-desert terrains supporting dwarf shrubs and without adequate ground cover. The terrain is rocky or sandy. These features are common in Turkana, Isiolo and Marsabit districts as well as most of the North-eastern Province.

Other unique vegetation types

Other habitats supporting unique vegetation oinclude the permanent swamps such as the Yala and Lorian, river deltas such as the Tana, and seasonal inland lakes like Amboseli. Similar environments fringe the freshwater lakes of Victoria, Naivasha, Baringo and Jipe. Saline and alkaline lakes occur in the Rift Valley. These are Lakes Turkana, Bogoria, Nakuru, Elmenteita and Magadi. They all support unique flora and fauna. Along the Indian ocean coast, stretches of bare sand and dunes occur, with

Diani and Malindi providing panoramic sandy beaches. The intertidal zones, fringing coral reefs, and off-shore islands support thriving aquatic communities of both flora and fauna. Many species of phytoplankton, marine algae, and marine angiosperms abound.

1.3 Thematic Areas

Agricultural biodiversity

The flora and fauna in Kenya's many ecological zones and habitats include many species of agricultural or food significance. Kenya is endowed with a unique heritage of diverse germplasm of vegetables, fruits, oil crops, forages, tubers, cereals, and pulses. For example, there are 45 known species of wild vegetable, 200 wild fruit, and 110 multipurpose tree species in Kenya. This floral agricultural diversity has been the subject of considerable research interest and discussion in various fora (ITDG, 2000, 1999; Maundu et al.; 1999; Chweya & Eyzaguirre, 1999; MEC, 1998; Guarino, 1997; Kenya Country Report, 1996)

There are also indigenous breeds of animals, including cattle, sheep, goats and birds. There are many wild animals, including fish and other aquatic life, that could be domesticated as sources of food.

National obligations in agricultural biodiversity are clearly articulated in the CBD programme of work and the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (FAO, 1996). It is expected that these requirements are adequately covered in recent government planning documents that focus on the agricultural sector, including the Kenya Agricultural Research Institute's strategic plan (KARI, 2000) and the joint strategy for the revitalization of agriculture by the Ministries of Agriculture & Livestock and Fisheries Development (MOA & MLFD, 2004).

The fate of agricultural biodiversity in Kenya is intimately tied to that of the agricultural sector as a whole, whose challenges are systemic in nature. Capacity issues revolve around reform of institutional management structures, creation of an enabling legal framework, and domestication of modern technologies.

Dry-land biodiversity

The arid and semi-arid lands (ASAL) of Kenya comprise about 88% of the country's land surface and carry over 20% of the total human population, and more than 50% of its livestock. In addition, most of the country's wildlife sanctuaries (national parks and game reserves) are located here. Although ASAL are unsuitable for rain-fed agriculture, migrants from non-pastoralist communities have recently introduced multiple land use practices, including crop agriculture and sedentary livestock husbandry. Consequently, frequent crop failures and the shifting of free-ranging livestock to more arid zones have led to over-grazing, increased land degradation, and ultimately desertification. This scenario aptly identifies the parameters that determine the fate of biodiversity in Kenyan drylands.

The pastoralist production system in Kenyan drylands suffers from the effects of frequent droughts, whose massive impact is the legacy of a long history of marginalization. This marginalization is usually in the domain of decision-making, usually because dryland economic benefits, although crucial in local populations, are typically difficult to quantify. One key prerequisite for successful sharing of benefits is the need to simultaneously establish a broader supportive environment, which should

- Relate to land and resource tenure
- Recognition of local level management mechanisms, knowledge and values, and
- Representation in national and international decision making.

Ownership and appropriate tenure will empower dryland communities to assume full control and management of their biodiversity resources (Emerton & Maganya, 2000). In resolving these matters, the focus will be the equitable sharing of benefits accruing from wildlife tourism, which have for long been the preserve of private operators and government.

The main issues in capacity include training & local institutional support, public education and awareness, community empowerment, advocacy and reform.

Forest biodiversity

Forests comprise slightly less than 3% of Kenya's total land area. Indigenous closed canopy forests cover 1.2 mi ha, while the area under forest plantations is 160,000 ha. These forests are rich in biodiversity (IUCN, 1996; Gathaara, 1999; Njuguna et al.; 1999). Naturally, forests are vital as water catchment areas and as wildlife habitats. In addition, they support agriculture and generate wealth for many Kenyans. Forestry and wood processing industries provide direct employment for approximately 35,000 people (Gathaara, 1999).

The main problems facing Kenyan natural forests are well known, and basically coalesce around over-exploitation, degradation, and unsustainable management practices (Gathaara, 1999; KEFRI, 1999; & The Mt. Kenya Donor-Partner Forum). The main challenges of forest conservation and management are soil conservation, water, biodiversity and the maintenance of productive potential. The principal capacity issues are human resource development and institutional strengthening.

Inland waters biodiversity

Inland waters biodiversity is found in Kenya's lakes, rivers and wetlands. The major freshwater lakes are Victoria, Naivasha, Baringo, and Jipe. There are also smaller ones like Ol'Bolossat, Kanyabole, Chala, and Kamnarok. The other lakes, Turkana, Bogoria, Nakuru, Elmenteita and Magadi, are saline and alkaline. These lakes serve as breeding sites and sanctuaries for fish and other aquatic life, as well as providing critical feeding grounds for many species of birds. They also support significant biodiversity of micro-organisms.

The main river systems in Kenya comprise five major drainage basins: Lake Victoria, Rift valley, Athi river, Tana river and Uaso Ng'iro river. These river systems support significant freshwater biodiversity, in addition to other biodiversity associated with riverine forests.

The most significant perennial swamps in Kenya are Saiwa, Yala, Shompole, and Lorian. Seasonal and temporary wetlands occur in many parts of the country. These water bodies support significant biodiversity resources, as well as providing important ecosystem services.

The major issues in Kenya's inland water system are associated with intensive multiple land development, which attracts competitive multi-sectoral water usage. This has accelerated environmental degradation through siltation, water pollution and changes in flooding frequency. These changes have significantly impacted freshwater biodiversity.

Marine and coastal biodiversity

Kenya's marine and coastal biodiversity occurs along the country's 536 km long coastline along the western Indian Ocean. It stretches from Chiamboni in the northeast to Vanga in the southwest. I addition, there are several off-shore islands, the major ones being those of the Lamu archipelago (Lamu, Manda & Pate), Mombasa, Funzi and Wasini. These areas, together with the exclusive economic zone extending to the high seas, are endowed with rich biodiversity. Kenya's unique marine Parks and Reserves, totalling over 75,000 ha, are located here.

The protected areas also enclose important breeding sites for migratory sea-birds, marine mammals, 3 species of turtle, and other marine species. These include the Tana delta, mangrove swamps, sea grass beds, and coral reefs.

Kenya's marine and coastal ecosystems form a key component of the tourism industry. The area also supports many marine-based industries, commerce, and harbours to facilitate maritime business. The key issues in biodiversity conservation are environmental pollution, resource over-exploitation, and lack of species inventories.

1.4 Crosscutting Issues

Over and above the themes described above, there are a number of other items addressing key cross-cutting issues of relevance to all thematic areas. Essentially these correspond to the issues addressed in the Convention's substantive provisions in Articles 6-20. Among them, Kenya has in the past addressed the following:

1. Biosafety
2. Access to genetic resources
3. Access to genetic resources, benefit sharing and intellectual property rights
4. Traditional knowledge, innovations and practices (Article 8(j))
5. Global Taxonomy Initiative
6. Public education and awareness
7. Incentives
8. Global Strategy for Plant Conservation
9. Impact assessment

However, in the recent past, new issues have been added to the list. At present, there are no specific structures that have been set up to address them systematically. These are:

1. 2010 Biodiversity target
2. Alien species.
3. Biological diversity and tourism
4. Economics, trade and incentives measures
5. Ecosystem Approach
6. Indicators

7. Liability and redress: Article 14 (2)
8. Protected areas
9. Sustainable use of biodiversity
10. Technology transfer and cooperation

2. Review Of Obligations Under The Cbd

2.1 Relevant Documents from the CBD

The following CBD documents are considered appropriate and necessary in Kenya:

- The Convention on Biological Diversity (CBD)
- Handbook of the CBD
- The Cartagena Protocol on Biosafety to the CBD
- Decisions of the Parties to the CBD
- Programmes and Issues
- Operational Guidelines for Expedited Funding of National Self Assessments of Capacity Building Needs.
- A Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management.

2.2 Identification of National Obligations

Kenya's national obligations derive firstly from the CBD itself (including the decisions of the COP), and secondly from commitments made to implement priority actions as elaborated in major national biodiversity planning documents.

2.2.1 National obligations under the CBD

By ratifying the Convention, Kenya entered into several legal obligations that require it to institute and implement various measures to achieve the three objectives of the Convention. Broadly considered, there are three categories of obligations (Mugabe *et al.*,2000):

- The first category is those obligations that deal with *national domestication* (involving formulation and/or reform of policies, laws and institutions or establishment of programmes at national level) of the provisions of the Convention. These include such responsibilities as the preparation of national biodiversity strategies and action plans (Article 6 of the Convention), enactment of legislation to regulate access to genetic resources and promote sharing of benefits from the use of those resources (Article 15), creation of incentive measures (Article 11) and several others.

- The second category is those obligations on *reporting* to the Conference of Parties (COP) and the Secretariat. Such obligations are created by Article 26 (Reports) that requires that each "Contracting Party "shall, at intervals to be determined by the COP, present to the COP, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

- The third category is those obligations that require Parties to *participate in the further elaboration and enrichment* of key policy issues and achievement of consensus of matters

that are still unresolved. Such provisions include those deposited in Article 23 (Conference of Parties), Article 19(3) (consideration and development of protocol on biosafety) and 18 (international scientific and technical cooperation). These three categories constitute an interrelated web of obligations on those African countries that have ratified the Convention.

More specifically, Contracting Parties are under obligation to implement the Convention by:

a) Developing national strategies for the conservation of biodiversity and sustainable use of its components and integration of them into relevant sectoral and cross-sectoral plans, programs and policies
b) Identification and monitoring of components of biological diversity which are important for its conservation and sustainable use
c) Identification of processes and activities which have or are likely to have adverse effect on biological diversity or sustainable use of its components, including, inter alia, control of alien species and releases into the environment of genetically modified organisms
d) Establishing and managing systems of protected areas
e) Restoration of degraded ecosystems and promotion of the recovery of threatened species
f) Respecting, preserving and maintaining knowledge, innovations and practices of indigenous and local communities and encouraging equitable sharing of benefits arising from the utilization of such knowledge and practices
g) Adopting measures for the ex-situ conservation of components of biological diversity
h) Promoting public participation, particularly when it comes to assessing the environmental impacts of development projects that threaten biological diversity
i) Educating people and raising awareness about importance of biological diversity and the need to conserve it
j) Integrating considerations of conservation and sustainable use of biological resources into national decision making
k) Developing systems of measures that act as incentives for conservation and sustainable use of components of biological diversity
l) Promotion and encouraging research which contributes to conservation and sustainable use of biological diversity
m) Creating conditions to facilitate access to genetic resources and technology
n) Information sharing through a clearing- house mechanism for use by all stakeholders
o) Provision of financial assistance to support national plans and priorities
p) Reporting on national processes and activities

2.2.2 Participation in the CBD

Kenya has participated in all COPs since the first one held in the Bahamas in 1994. In the year 2000, the country hosted COP V in Nairobi. Some of the significant activities undertaken towards implementing the Convention include:

Establishment of a national focal point

The National Environment Secretariat (NES) was established in 1974 as the focal point for environmental matters in the country. It later became the focal point for the CBD and the Global Environment Facility (GEF) in 1992. In 2000, NES was transformed by statute into a more comprehensive environmental organization, the National Environmental Management Agency (NEMA).

Establishment of the Centre for Biodiversity at the National Museums of Kenya (NMK)

In 1991, the NMK established a Centre for Biodiversity. The Centre houses the largest collection of information on Kenya's biodiversity in the country, including actual specimens. The Centre was charged with coordinating the Kenya Country Study on Biodiversity in 1992.

Kenya Country Study on Biodiversity

This was the first integrated study of biodiversity in Kenya carried out in 1992. It produced the first baseline study of biodiversity in the country, including species inventories, conservation programmes, use of biodiversity, its benefits and costs. The study also assisted the country in arriving at a more accurate and realistic assessment of the total costs, benefits and needs of conservation and utilization of biodiversity. The report was formatted on common guidelines provided by UNEP for use by many countries in the world.

Inter-ministerial Committee on Environment (IMCE)

The IMCE was established by NES as a vehicle for assisting the Ministry of Environment & Natural Resources (MENR) in coordinating environmental matters in the country. The committee assisted, among other things, in coordinating and preparing for Kenya's participation in UNEP Governing Council meetings, the United Nations Conference on Environment and Development (UNCED), and in negotiations for the CBD.

IMCE Sub-Committee on Biodiversity

The IMCE sub-committee on biodiversity was established in 1994 among key stakeholders to assist MENR in coordinating matters relating to biodiversity. It was charged with advising the ministry on policy, legislative, planning, technical, and research activities in the country. The sub-committee was instrumental in assisting the government in the formulation of national biodiversity policies, coordination and development of the NBSAP, follow-up activities
relating to the CBD, research in biodiversity, and general advice on technical and scientific matters. The sub-committee also significantly assisted in preparing the country for many CBD meetings, including SBSTTA and the COPs. It also plays a key role in coordinating and providing guidance to stakeholders on the implementation of the CBD. The sub-committee has now been enlarged to encompass a wider stakeholder participation, including non-governmental organizations (NGOS), inter-governmental organizations, and the private sector.

The NEAP process

The NEAP process in Kenya was fully consultative involving a majority of the stakeholders. The NEAP report of 1994 provided information on the environment in Kenya and suggested many actions necessary for sustainable development. Many of the NEAP recommendations are now included in the Environmental Management Coordination and Act (EMCA). The NEAP also provided the country with a basis for the translation of Agenda 21 into a programme of action on environment and development.

Establishment of Biodiversity Databases

The NES, in its efforts to disseminate biodiversity information to all stakeholders long recognized the need to establish biodiversity databases on topical issues. The first achievement was the establishment of the digital database of the Lake Naivasha region. It contains information on ecology, soils, agriculture, water, fisheries, livestock, wildlife, and other information on this important Ramsar site.

The Biodiversity Data Management project report of 1998 carried information on a national institutional survey that assessed institutional capacity and data needs for biodiversity information management. A metadatabase of institutions with biodiversity data and the datasets they hold has also been established at NEMA.

National Clearing House Mechanism (CHM)

The CHM is located at NEMA, its national focal point. The CHM employs e-mail as its main communication and dissemination tool, and has recently established its own electronic platform by acquiring an internet website. A periodic newsletter, NEMA News, disseminates topical information on the environment in hard copy format.

National Biosafety Guidelines, Regulations & Framework

National biosafety guidelines and regulations have been produced to guide the country on how to develop biotechnology and use it judiciously without causing adverse effects on the environment. The national biosafety framework reports the status of biotechnology in the country as well as capacity needs for risk assessment and management. A committee on biosafety has been established by the National Council for Science & Technology to coordinate the implementation of the regulations, guidelines and framework.

Inter-Agency Committee on Access to Genetic Resources and Benefit Sharing

Access to genetic resources and sharing of benefits arising is a complex inter-sectoral issue that impacts many government ministries and departments. Its oversight and coordination has necessitated the establishment of an inter-agency committee that should streamline relevant activities, including bioprospecting.

First National Report to the CBD Secretariat

The first report to the CBD Secretariat was submitted in 1998 prior to COP IV in Bratislava. It summarized the main achievements towards the implementation of the CBD at the time. It constituted the first consolidated report on Kenya's biodiversity following ratification of the CBD in 1994.

The NBSAP process

The NBSAP process involved a wide cross section of biodiversity stakeholders in the country. Its consultative phase involved meetings in all regions of the country. Its main objective was to set out national priorities, strategies and action plans for biodiversity conservation in the country. The report was completed in 2000, and its wide dissemination is still in progress.

2.3 Legal instruments, Policies and Strategies

National Environment Action Plan (NEAP)

This is a comprehensive policy document approved by the government in 1994. One of its key recommendations was the creation of a national environmental management agency, the current NEMA. It is difficult to assess whether any of its other recommendations were implemented.

National biodiversity strategy & action plan

This is a policy paper completed in 1999. It spells out the way forwards for the conservation and sustainable utilization of biodiversity in the country at the time. It is now mainly outdated, although most of its action plan was never implemented.

Environmental Management & Coordination Act

This is Kenya's principal legal instrument on the environment. It is a very ambitious legal framework. It lead to the creation of NEMA and recently to the development of regulations, guidelines and standards for the environment. The instrument is consistent with global trends in the environment.

2.4 Relevant Action Plans, Reports and Information Sources

2.4.1 Action plans

National Strategy & Action plan for Medicinal and Aromatic Plant Species

This strategy was formulated by the Kenya Working Group on Medicinal & Aromatic Plant Species (KWG-MAPS) in 2001 and endorsed by a meeting of top government policy makers in 2004.It sets out a strategic plan for the conservation, cultivation, commercial development, and sustainable utilization of medicinal plants in Kenya.

Biodiversity Data Management Plan

This is a good guide on establishing a biodiversity information system. It is relevant as the only guide to establish an effective CHM.

National biodiversity strategy & action plan

This is a policy and action plan document.

National environment action Plan

It is a good baseline information document which is largely outdated.

2.4.2 Reports

State of the Environment Report

This is the most recent report on Kenya's environment.

Capacity 21 Report

This report covers capacity development on the environment in the country, and is based on the Agenda 21 experience.

Naivasha Biodiversity Report

This report is a useful animal and plant checklist of the Naivasha region.

Biodiversity data management (BDM).Project report

This report covers a project that focused on data management issues in Kenya.

The UNDP/FAO Institutional Support for the Protection of the East African Biodiversity

This project created institutional awareness and built capacity within relevant Governmental and Non-Governmental Organizations (NGOs) of East Africa, so as to ensure adequate protection of biological resources.

Country study on biodiversity Report (1992)

This is the first comprehensive study of biodiversity in the country prior to the enactment of the CBD.

2.4.3 Information sources

Kenya's biodiversity at a glance (2000)

This is a biodiversity publicity document prepared for COP V.

National Institutional Survey

This report describes the capacity of institutions to hold data.

Metadatabase

This report is a good biodiversity inventory and directory.

National Resource Inventory

This report contains good information on biodiversity datasets in many national institutions.

2.4.4 Assessment of contribution to national policy documents

Poverty reduction strategy (PRSP)

The PRSP does not recognize the sustainable conservation of the environment and biodiversity *per se* as national priorities. However, some relevance is perceivable in the agriculture, livestock, wildlife, and tourism sectors. Implementation of the EMCA is seen as a key strategic objective of the strategy for rural development.

Economic Recovery Strategy

This document is not currently available.

3. Analysis Of National Provisions

3.1 Evaluation of legal instruments, policies and strategies (See Annex 1)

3.2 Evaluation of national CBD reports and action plans (Annex 2)

3.3 Assessment of subject-related information (Annex 3)

3.4 Analysis of on-going projects and measures (Annex 4)

3.5 Analysis of previous projects (Annex 5)

3.6 Existing capacity in priority areas (Annex 6)

3.7 Cross-cutting policy areas and capacity issues

a) High priority areas

b) Other areas

1. 2010 Biodiversity target
2. Liability and redress: Article 14 (2)
3. Economics, trade and incentives measures

No.	Cross-cutting area	Status
1	Biosafety	The institutional mandate for biosafety lies with the National Council for Science & Technology (NCST) as the National Focal Point. Through the National Biosafety Committee, NCST has made tremendous progress in ensuring that Kenya meets the provisions of the Cartagena Protocol which the country signed in 2000. In 1999, through the UNEP/GEF Biosafety Enabling Activity, a National Biosafety Framework was developed. Currently, this framework is under implementation by NCST through the UNEP/GEF Project. Some of the key achievements of this project include a Biosafety Bill and a national Biosafety Policy and Code of working with GMOs. Kenya now has a high level of capacity development in Biosafety.
2	Access to genetic resources, benefit sharing and intellectual property rights	Action on Article 15 of the CBD has attracted many stakeholders, including KIPI, NCST, KWS, NMK, NEMA, AG Chambers, EAC, and the Universities. The EAC Secretariat has developed the Draft EAC Protocol on Environment and Natural Resources Management. The NMK has undertaken collaborative research with Kew Botanical Gardens. NMK has further signed Material Transfer Agreements. The Universities have been undertaking collaborative research with scientists from other countries.
3	Traditional knowledge, innovations and practices (Article 8(j))	There are many stakeholders, including KIPI, Ministry of Culture, Sports and Gender, KWS, NMK, NEMA, Kenyatta University, Kenya Working Group on Medicinal Plants, NGOs, and AG Chambers among others. NEMA has developed a strategy and action plan for mainstreaming indigenous knowledge into policy and programmes in Kenya. This document will be presented to the Board of Management for onward transmission to the Minister then to Cabinet for approval. The National Council for Population Development was spearheading initiatives towards developing a Centre of Excellence on Traditional Medicines, HIV/AIDS Research and Sustainable Development: Managing Indigenous Knowledge. Kenya Working Group on Medicinal Plants developed the strategy and action plan for medicinal and aromatic plants and has undertaken a number of studies in the field. The AG is putting together a team to come up with legislation for this area. Members who will sit as an Inter-Ministerial Committee will be gazetted some time this year and commence the work soon after. Ministry of Culture, Sports and Gender has developed a draft policy on this matter. Ministry of Health has also developed a draft policy on traditional medicine, practitioners etc.
4	Global Taxonomy Initiative	The Global Taxonomy Initiative (GTI) identified the taxonomic impediment as the core of the conservation/taxonomy problem. Although many biodiversity institutions in Kenya use taxonomic tools as part of their day to day work, it is recognized that the National Museums of Kenya (NMK) and the Department of Botany, University of Nairobi are the key taxonomy institutions. The two house the East African Herbarium and the University of Nairobi Herbarium respectively, in addition to other biodiversity collections. Their proposed UNDP/GEF BOZONET (Botanical & Zoological Networks of Eastern Africa) Project is expected to be the main vehicle for developing capacity and producing targeted taxonomic tools in the country. Capacity for taxonomy in the country now is at a medium level.
5	Public education and awareness	The Environmental Action Learning EAL a framework for supporting Environmental education (EE) and Capacity Building in the formal, informal and non-formal sectors of education. In Africa, it is through EAL that organizations such as Kenya Organisation of Environmental Education (KOEE),have developed successful models of EE programmes using the Eco-Schools framework. The New Partnership for Africa Development (NEPAD) which Kenya is a member has developed activities on public education and awareness: established regional EE programmes to be coordinated through a network of centres of excellence; provision of appropriate information packages to the public, preferably in their national languages; establishments of media facilities that focus on environmental conventions and related sustainable development issues; dissemination of global environmental conventions; encouragement of NGOs to increase their involvement in environmental awareness building. The East African Community EAC has established a treaty outlining areas of cooperation which include education, science and technology, environment and natural resources and tourism and wildlife management. These sectors have direct linkage to the Environment action learning initiatives. Already the EAC in collaboration with WWF Eastern Africa Regional Office Nairobi have started to implement some pilot EE programs in some schools in the lake region Today, EE has been incorporated in the various career subjects in Schools, Colleges and Universities. Currently, environmental awareness is promoted using various methods. The methods include convening of local/public meetings, use of audio visual aids, media, radio, TV, posters, drama, newsletters etc. Popular and effective awareness campaigns are normally held during environmental commemoration days for example during World Environment day, water day etc. During these days the public is sensitized through mass participation in tree planting, cleanup campaigns, building of gabions etc. the formal education system has tried to incorporate environmental issues in the new curriculum. Organisations like KWS, NMK, Wildlife Clubs of Kenya, and many NGOs have established departments to deal with awareness on biodiversity conservation The National Environment Management Authority (NEMA) as spelt out in EMCA, takes a lead role in enhancing environmental education and public awareness for effective community participation and empowerment in environment and natural resource Management. NEMA and the Kenya Organization of Environmental Education (KOEE), which is a pioneer non-governmental organization in environmental education both formal and non-formal, have held a joint workshop in July

No.	Cross-cutting area	Status
		2003 to assess the status of EE and develop an EE strategy. NEMA has been holding a series of workshops with curriculum developers at all levels on 'Greening the Curriculum. The Global Environment Facility has also a key role in funding CEPA activities, especially at the regional level. The development of national and regional initiatives to further CEPA, including through appropriate GEF-funded projects, can strongly contribute to achieving successful CEPA programmes at the national level. For exmple the The Environmental Education and awareness program within the Nile Transboundary Environmental Action project focus on creating awareness on the River nile Environmental threats while stimulating behaviour changes at three levels the general public, secondary schools and tertiary institutions of learning Kenya has not appointed a national focal point for CEPA, in order to facilitate coordinated implementation of the programme of work hence the awareness activities are not well coordinated. Inadequate funding is a key issue to the successful development of the CEPA programme of work.
6	Incentives	The government through the Forest Department and KWS have designed various measures in form of incentives to enhance community participation in biodiversity management, e.g. incentives offered to the community include the development of infrastructure around the conservation areas, e.g. forest to establish schools and animal control measures like fencing to reduce conflicts. Kenya Wildlife Service is reintroducing financial incentives to landowners by permitting some consumptive use of wildlife. NEMA has also developed economic instruments in environmental conservation and management. Wildlife, forestry, and natural resources policy, within an overall goal of conservation are all undergoing review in Kenya with emphasis on ensuring that conservation involves local communities, e.g. the Forestry Bill of 2002 and the Wildlife Act. Many conservation projects being implemented in Kenya involve integrating economic instruments into sectoral policies and strategies for the promotion of natural resource conservation. The Cross Border Biodiversity project has been applying economic instruments for enhanced biodiversity conservation across borders. Conservation of Biodiversity Resource Areas (COBRA) of the KWS has been testing various kinds of incentive measures in Amboseli National Park. IUCN is also involved in economics and biodiversity programme. Specific national policy and law to promote the development and effective implementation of community based incentives is lacking. Wildlife conservation policy lacks a wide scope to use a much broader range of economic, financial and market instruments, e.g. land use taxes, conservation subsidies and easements, market policy, legal and institutional failures. Kenya is not making significant investment in projects with incentive components. Most projects are donor driven and stop when funding stops.

No.	Cross-cutting area	Status
7	Global Strategy for Plant Conservation	National Museums of Kenya in collaboration with University of Nairobi, other relevant institutions including Civil Society and IUCN have already formed a working group on medicinal plants. The Medicinal and aromatic plants working group has also been formed and coordinated by the University of Nairobi. The Aloe working group, coordinated by KWS has also been established. With support from IDRC, A regional working group has been formed and has held a meeting which made specific recommendations to be followed. A wide range of stakeholders were assigned roles. The coordination of the implementation is being facilitated by IUCN and the SCBD. Participating Institutions are: National Museums of Kenya, Kenya Wildlife Service, University of Nairobi, Ministry of Planning & National Development, National Environment Management Authority, Ministry of Health, Ministry of Agriculture, Ministry of Culture and Social Services, Other relevant ministries, Kenya Working Group on Forests, Intermediate Technology Development Group, & Centre for Livelihood Opportunities Unlimited and Technologies. Some capacity exists but it needs to be stepped up. Capability is lacking in terms of human and financial resources. Linkages with national focal points on biodiversity need to be strengthened so as to involve more stakeholders.
8	Impact assessment	This area is led by NEMA, EAC, OP Early Warning Programme, and the AG Chambers. EIA guidelines and regulations in place. EAC regulations on EIA in place. EAC Protocol on Environment and Natural Resources Management developed. NEMA's strategic plan 2005-2010 proposes to establish an early warning hotline and to strengthen early warning mechanisms in relevant lead agencies. Office of the President is involved in preventive as well as rescue missions due to catastrophes. A number of NGOs are involved in provision of relief aid.
9	Protected areas	In a study carried out in 1992, it was estimated that Kenya contains 35,000 species of known plants, animals and micro-organisms. This is a high gene pool concentration with some species being endemic, rare, threatened or vulnerable. In order to conserve them, Kenya has set aside 8% of its land are for protected areas. Land use change is one of the biggest threats to the habitats. Other issues affecting protected areas include: Human wildlife conflicts, Encroachment of communities into protected areas, Transmission of wildlife diseases to livestock, Compensation over destruction by wildlife, and poaching. The responsible institution is the Kenya Wildlife Service. Others are private sanctuaries and local communities. Technical capacity exists but facilitation is lacking. More financial support required. Local communities need to be trained in the management and conservation of the resources.
10	Sustainable use of biodiversity	This is the second objective of the Convention. It refers to the utilization of biodiversity or its components in a manner that ensures that they are not decimated but that they will be available for future generations. Parties are expected to adopt measures relating to the use of biological diversity to avoid or minimize impacts on biodiversity. Kenya's economy is largely depended on biological resources and the majority of the populationdepend on biodiversity for the livelihoods. NEMA is the lead authority but many institutions are involved. There is no policy on sustainable use. Alternative livelihood options have not been explored. Also there is ineffective enforcement of relevant resource utilization policies and legislation, lack of access to appropriate technologies, and lack of information on best practices.

No.	Cross-cutting area	Status
11	Alien species.	Recent reviews show that Kenya has been invaded by 34 species: eleven arthropods, ten microorganisms, nine plant species and four vertebrates. To prevent the introduction of invasive alien species into Kenya, importation of any plant material is subject to strict specified conditions. Sustainable regulations are enforced to facilitate the import and export of plant materials through the issuance of import permits and phytosanitary certificates. Inspections are carried out at the entry points (i.e. international airport, sea ports and borders) to enforce quarantine measures. Intentional introduction of alien species in Kenya has been done under authority of the Kenya Standing Technical Committee on Imports and Exports, which is a body that approves importation of restricted and new materials into the country. Considerable research has been undertaken in Kenya to develop an adequate knowledge base to address the problem of invasive species. The Kenya Plant Health Inspectorate Service (KEPHIS) has worked closely with the research institutions to determine the status of invasive species and developed management options. With assistance from the Food and Agriculture Organisation of the United Nations, training of staff has been undertaken to make officers aware of contemporary phytosanitary issues and ensure that they effectively implement phytosanitary measures. Staff have also been trained on specific phytosanitary issues such as pest risk analysis and identification of pests of quarantine importance. Additionally, efforts have been made to strengthen phytosanitary activities within KEPHIS. These have included: ➢ Strengthening border control by establishing more inspection points at entry points to prevent introduction of invasive species. ➢ Setting up laboratory facilities at the major entry points to ensure quick identification of intercepted species ➢ Recruitment of more technical staff. The Global Invasive Species Programme (GISP) and CAB International Africa are involved in capacity building training in eradication, containment and control of alien species
12	Biological diversity and tourism	Most of the tourism in Kenya is closely related to the protected areas and is affected by the same problems as stated above. Another factor is over use of certain parks such as Masai Mara and Amboseli.
13	Ecosystem approach	Aspects of the concept of the Ecosystem Approach were discussed within the context of the GEF operational programme on Integrated Ecosystem Management at a workshop at IUCN, Nairobi in 2000. Not much however has been heard of the Ecosystem Approach in its present conceptual framework of nested hierarchies and feedback loops. Reports indicate that some relevant IDRC-supported work has been done by ICIPE on malaria and agriculture at the Mwea Irrigation Scheme. Capacity for the Ecosystem Approach is currently low, and it is not clear who holds the institutional mandate.
14	Indicators	Assessment and indicators of biological diversity were discussed during a SSSTTA preparatory workshop in Nairobi in 1997. No Information is available on the institutional mandate or the present capacity.
15	Technology transfer and cooperation	This work programme was recently discussed at COP7 in February 2004 in Malaysia and the country has not yet embarked on the proposed activities. There is need for legislation to support the transfer of technologies and the capacity to absorb them. The proposed actions include: • Technology assessment • Information systems for gathering and disseminating the same. • Creating enabling environments • Capacity building Stakeholders include: Universities, KARI, KEFRI, NMK, KWS, Ministry of Agriculture, Ministry of Livestock Development, NGOs, and the Private Sector.

3.8 Existing gaps

1. Enhanced capacity to effectively implement the CBD in a systematic and timely manner, because:
    - On-going activities largely donor driven
    - Most COP decisions unimplemented
    - Most CBD work programmes unimplemented
    - No programme evaluation or monitoring mechanisms
    - National planning documents largely unimplemented

2. Priority planning for capacity development essential due to:
    - Lack of capacity needs assessments
    - Lack of strategic plans
    - Inadequate mechanisms for periodic capacity surveys.
    - Lack of long-term thematic workplans
    - Inadequate capacity to plan and implement effectively.

3. Strengthened capacity to generate, link and exchange information due to:
    - Inadequate institutional and thematic links.
    - Lack of follow-up actions after the Biodiversity Data. Management (BDM) Project.
    - Lack of consistent workplans for programme implementation
    - Over-dependence on old information
    - Little original data generated
    - Little evidence of wide search for information from published material and the internet.
    - Inadequate feedback from national representatives to COP, SBSTTA, and other meetings.
    - Urgent need for better preservation and use of indigenous knowledge

4. Improved national planning documents that:
    - Highlight international commitments in national planning documents.
    - Create harmony with and complementarities to other international instruments, e.g. Ramsar, etc
    - Create better linkages with social and economic priorities
    - Create mechanisms for coordinating actions across agencies and institutions to avoid overlapping and duplication.
    - Integrate biodiversity concerns into sectoral policies
    - Create awareness of BD issues and values to decision makers
    - Include incentive mechanisms to provide motivation, encourage excellence, reward individual initiative and achievement and promote ongoing expertise development
    - Include mechanisms for regional or bilateral cooperation in policy, legal and regulatory and management activities

5. Improved human skills in:

- Monitoring system design, choosing indicators
- Design systems of valuation and incentives
- Effective preparation, mandating, and reporting of convention discussions
- Negotiating skills
- Environmental economics, taxonomy, data and information management, trade policy and law.

6. Specific capacity to implement the cross-cutting issues of:
    - Sustainable use of biodiversity
    - Ecosystem approach
    - Indicators
    - Liability and redress: Article 14 (2)
    - Economics, trade and incentives measures

4.0 Way Forward

The way forward is to lay a framework through which this thematic assessment will be carried out. A stakeholders' workshop is the next logical step. Strong participation by key thematic institutions and other organizations addressing cross-cutting issues should be ensured. This will enable the workshop to among other things, complete an assessment of existing capacity in priority areas.

ANNEX I

INITIAL THEMATIC PROFILE

Evaluation of legal instruments, policies and strategies

No.	Document	Type	Effectiveness	Consistency	Conformity
1	National Environment Action Plan	Policy document	A comprehensive government approved document. Capacity needs levels well elaborated. Difficult to implement the recommendations since the document needs revision.	Good consistency on most of the capacity issues.	The policy issues on capacity are in conformity with the CBD, UNFCCC, UNCCD, POPs. However, the evolution of the Conventions has been so fast that the NEAP details are outdated.
2	National Biodiversity Strategy & Action Plan	Policy document	A detailed policy paper which spells out capacity needs for the country with respect to biodiversity.	Consistent up to the issues raised by 2000.	Needs revision to conform to the current biodiversity capacity needs.
3	Environmental Management & Coordination Act	A legal document	A very ambitious legal framework. Lead to the creation of NEMA and currently to the development of Regulations, Guidelines and standards for the environment. Capacity needs in these areas not well addressed.	Consistent with global trends in the environment. Capacity needed in its interpretation and elaboration.	Conforms with the provisions of most of the MEAs.

Evaluation of national CBD reports and action plans

a) National CBD reports and action plans

No.	Document	Quality	Relevance/current usage	Gaps	Perceived value
1	First National Report to the CBD Secretariat	Medium. Quite informative.	Used as reference for preparing for the second national report.	Many. Little empirical data.	Low. Needs updating
2	National Biodiversity Strategy & Action Plan (2000)	Relevant but lacks details on capacity as per CBD programmes of work adopted after 1999.	There are several gaps but these can easily be picked out from the document.	Very valuable but needs revision or updating.	High. The only biodiversity strategy In the country
3	National Environment Action Plan (1994)	A good baseline information document. A guide to capacity needs only if read with that in focus.	Average. A good reference point.	NEAP is due for revision to highlight the many gaps.	Average. An old document that needs updating
4	Country study on biodiversity (1992)	A simple desk-top report with poorly researched data. Low conceptualization of capacity needs.	Largely irrelevant but can be a useful guide in the identification of institutional mandates on capacity.	N/A since it did not focus on capacity needs.	Low value.

b) Other reports and action plans

No.	Document	Quality	Relevance/current usage	Gaps	Perceived value
1.	State of the Environment Report	Relevant as it contains information collected in 2003 which provides better insights into the present state of the various components of the environment.	This report has not yet been released to the public, hence its effectiveness is presumably low. It is not very consistent.	Lacks data on key areas like health. It also lacks depth in some areas.	A valuable document which gives a good baseline on which gaps in knowledge can be addressed.
2	National Strategy and Action Plan for Medicinal & Aromatic Plant Species	High	Under use by members of the Working Group on Medicinal & Aromatic Plant Species.	Few	High.
3	Capacity 21	Medium. Planning process draws from information collected during this the CAP21 project.	Information has mainly been used to enrich other initiatives such as the NAP/CAP21 in Turkana and Taita; 15 CBOs projects developed and funded and integration of CAP21 into desertification. Projects on-going under the implementation of NAP.		
6	Biodiversity Data Management Plan	Good guide on establishing a biodiversity information system	Relevant as the only guide to establish effective CHM but on in use	Information on equipment and budget needs updating	High guideline document
7	Naivasha Biodiversity Report	Useful animal and plant checklist Naivasha region	Reference material	Other regions need to be covered	Reference material

Assessment of subject-related information

No.	Document	Quality	Relevance/current usage	Gaps	Perceived value
1	Kenya's biodiversity at a glance (2000)	Needs extensive revision and landscaping to sell Kenya's image	Not used, needs updating	Not all components of biodiversity are included	At the present form it is not very valuable.
2	National Institutional Survey	Medium Describes the capacity of institutions to hold data	Not used, needs updating	More institutions should be covered	Information document reference material
3	Metadatabase	Good inventory Directory	More institutions should be covered	More institutions should be covered	Information document reference material
4	National Resource Inventory	Good information on biodiversity datasets in institutions	Not used, needs updating	More institutions should be covered	Information document reference material

Analysis of on-going projects and measures

Analysis of previous projects

No.	Project	Specific report	Relevance of results and experiences to CBD	Contribution to capacity building
1	UNDP/GEF/FAO Reducing biodiversity loss at cross-border sites in East Africa.	A number of consultancy reports produced.		Training of Forest Department Staff
2	Biodiversity data management (BDM)	• Biodiversity Data Management Plan • National Resource Inventory • National Institutional Survey • Metadatabase • Naivasha Report	The project enhanced Kenya's capacity in biodiversity data management Enhanced the function of CHM	
3	The UNDP/FAO Institutional Support for the Protection of the East African Biodiversity		Created institutional awareness and build capacity within relevant Governmental and Non-Governmental Organizations (NGOs) of East Africa, so as to ensure adequate protection of biological resources".	
4	Development of a Digital Biodiversity Database on Lake Naivasha Region: Interactions Between Resource Utilization and Biodiversity" fell.			

Existing capacity in priority areas

a) Agricultural biodiversity

1. Country level
2. Institutional level

Capacity element	Assessment
1.Mission / Strategic Management Do the institutions have clearly defined and understood missions and mandates?	KARI and KEFRI have strategic plans that direct their operations. The universities have comprehensive course descriptions that determine the types and levels of training offered.
2.Culture / Structure / Competencies Are the institutions effectively structured and managed?	They are well managed and effective in fulfilling their mandates.
3. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	KARI and KAFRI have complete institutional planning structures which work effectively. The universities do not have such processes.
4. Human Resources Are the human resources adequate, sufficiently skilled, and appropriately deployed?	KARI and KEFRI are well staffed with qualified personnel. Issues of deployment are not clear. Most public universities are understaffed, although a high proportion of academic staff are highly skilled. The suitability of deployment varies from institution to institution, but is in most cases appropriate.
5. Financial Resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	A high proportion of financing for KARI and KEFRI comes from donors, and is effectively managed and utilized. Universities are mainly funded by the government, and the level of funding is usually very low. This makes their operation relatively ineffective. The level of research output is low.
6.Information Resources Is required information available and effectively distributed and managed?	All the main institutions have access to the internet, including email services. However the quality and duration of access varies. There is a reasonable level of access and distribution of information.
7. Infrastructure Are material requirements such as buildings, offices, vehicles, computers, allocated appropriately and managed effectively?	KARI and KEFRI are well provided for in terms of infrastructure, and these resources are well managed. The level and quality of infrastructure in the universities varies, but is generally low in terms of allocation and management.
SCIENTIFIC & TECHNICAL CAPACITY 8. Are scientists in biodiversity institutions equipped with the requisite skills?	A majority of the scientists are trained to University level. It is not clear whether they have specific skills to deal effectively with biodiversity.
9. Is there sufficient information on genes, species, ecosystems and ecosystem function?	There is considerable information on species and ecosystems. Information on genes and ecosystem function is not sufficient.
10. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	The linkages are sufficient but of doubtful quality. The level of transaction is low.
11. What is the status and quality of scientific infrastructure?	Scientific infrastructure is in place, and is of reasonable quality.
12. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of S & T in biodiversity?	They are not, and do not give sufficient guidance.

b) Forest Biodiversity

1. Country level
2. Institutional level

	Assessment
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	The Forest Department (FD) in the Ministry of Environment and Natural Resources has the mandate to manage gazetted forests. The FD draws its mandate from Sessional Paper No. 1 of 1968 and the Forest Act Cap 385. FD has revised the Sessional. The forest act has similarly been approved by parliament. The other FD mandates are derived from the Timber Act Cap 386, the Kenya Forestry Master Plan (1995-2025) of 1994, National Development Plans and the National Environmental Action Plan 1994. These instruments bestow upon FD the following functions and powers. • Protection and management of forests on sustained yield basis in accordance with approved management plans • Formulation of policies regarding the management, conservation and utilization of forests. • Provisions of extension services to the County Councils and farmers on planting, tending and sustainable management of forests. • Collection of revenue and other charges. • Management of forests in water catchment areas for purposes of soil and water conservation.
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	The FD has five divisions: Industrial Forestry, Forest Extension Services, Natural Forest Management, Forest Engineering, Project Development and Finance, and Forestry Training College. Assessment of strengths, weaknesses, opportunities and threats of the Forest Department. **Strengths** • Strong physical resource base • Some qualified scientific, technical, technical and administrative staff. • Has a network of extension officers as Forest assistants and Forest Guards **Weaknesses** • Centralized decision-making • Poor staff motivation • Conservative to new approaches and technologies • Donor dependency • Weak financial base • Unresponsive to communities living adjacent to or the forests. • Unclear and unfocused priorities • Limited career opportunities **Opportunities**

	• Results of the new Forest Policy, the Forestry Amendment Bill, Environment Management and Coordination Act. • Access to new technologies and information • To embrace community management of forests • Current linkages with agriculture as in the new policy • New partnerships with NMK and KWS. **Threats** • Weakness in policy coordination • Liberalization and weak internal controls • Brain drain and flight of human capital • Decrease in the number of partners and collaborators • Negative attitudes of the pu towards FD. Under the prevailing circumstances in the country, when a lot of awareness on participatory approaches and human rights has been created, it is right to conclude that FD is inadequately structured and managed. In recognition of this, the government recently suspended the services of 842 foresters including the chief conservator of forests. After a number of investigations were conducted, a number of Foresters were reinstated. This speaks of ineffective management of institutions. A number of concerns points to the admission that forest management has to be relinquished to the privates sector, public enterprises, tree farmers or local communities. Another concern in the structure of FD is creation of room for interministerial coordination. FD should ideally have very close links to agriculture, energy, industrial development, tourisms, and culture among others. Links to NGOs concerned with forest biodiversity conservation and management need to be clarified strengthened and institutionalization.

3. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	Planning in FD has depended largely on outside influence and support. The government with support from FINNIDA and DFID completed the Forestry Master Plan and Forestry Policy in 1994 thus fro the first time examining past policy, laws and engaging in planning for the sector in detail. The Forestry Master Plan covers a period of 20 years – 1995-2025, and gives very clear direction for the management of forestry in this country. Arising from the Forestry Master Plan 1995-2025, and understanding that the plan is dynamic, a number of processes have been initiated with a view to operationalizing the Plan, albeit of low-key note. A number of these have been in form of donor supported programmes and projects. Under such cases, there has been a trend towards quality management, and recognizable efforts in monitoring and evaluation. FD as an institution for the greater part of the last decade has been unable to institutionalize effective monitoring and evaluation frameworks. This has been purely due to financial constraints.
4. Financial resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Financial allocations to FD excluding salary and emoluments for staff have been declining. In the last 20 years, FD has relied heavily on donor funds. These have also dwindled due to poor governance. Due to the meager finances available, FD is unable to fulfill its mandate. This is clearly illustrated at the district and divisional level where basic materials and services – stationery, power, water, phones, typewriters and offices in some cases are not available.
5. Information Resources Is required information available and effectively distributed and managed?	At the peak of projects in the Forestry Department in the early nineties, which included the Kenya Forestry Department Project (KFDP), the Kenya Forestry Master Plan (KEMP), Kenya Indigenous Forest Conservation Project (KIFCON), COMIFOR and others, a lot of information was generated. This has unfortunately tended to be the case, that information is generated by donor-funded projects. Accurate and up-to-date information may not be easily available when needed. District Forestry Officers, due to financial constraints are not able to effectively monitor forestry issues in their jurisdiction. Information such as frequency of fires, illegal harvesting and species decline are rarely posted and if so the figures more often than not may be suspect. Most offices lack computers and access to internet facilities. This hampers efforts to manage and distribute information.
6. Infrastructure Are material requirements such as buildings, offices, vehicles, and computers, allocated appropriately and managed effectively?	The state of vehicles, stores infrastructure and equipment in nearly all forest stations is pathetic. The cause for this present state of things has been blamed on lack of operating funds. There is sufficient evidence to add corruption and mismanagement as contributing to the existing state of affairs.
SCIENTIFIC & TECHNICAL CAPACITY 7. Are scientists in biodiversity institutions equipped with the requisite skills?	Most scientists in the FD are trained to diploma. Graduate level or above. They however require training in participatory skills, managerial and administrative skills, and policy formulation skills.
8. Is there sufficient information on genes, species, ecosystems and ecosystem function?	• Information on species is available but not comprehensive. • Information on genes is largely undocumented. The work by the Millennium Seed Bank may contribute to documentation • Information on ecosystems & Ecosystem functions has been documented and can be found sectorally
9. What is the extent and quality of linkages between research institutions and	FD has close linkages to KEFRI and KARI and tends to be guided by their research findings. Linkages to NEMA are being institutionalized and it is too early to comment on the extent. Linkages between FD and KIPI, KIRDI and other

	biodiversity regulatory agencies?	bodies need to be strengthened.
10.	What is the status and quality of scientific infrastructure?	Needs strengthening and in some instances, a complete overhaul to address emerging issues.
11.	Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of Science & Technology& biodiversity	Not comprehensive.

c) Inland waters biodiversity

1. Country level

2. Institutional level

	Assessment
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	YES they have a clear mandate • Ministry of Water, main function is water resource development and management. Water is both a resource and a home for a wealth of aquatic biodiversity • Fisheries Department is responsible for fisheries resource management in Kenya. Its main activities include managing fishing activities, aquaculture and issuing fishing licences • The Forest Department (FD) in the Ministry of Environment and Natural Resources has the mandate to manage gazetted forestsProtection and management of forests on sustained yield basis in accordance with approved management plans • KWS it is mandated to conserve and manage wildlife resources both inside and outside protected areas. NFP RAMSAR Convention . There is a wetland programme. • KMFRI is mandated to undertake research on all aspects of aquatic resources • NMK its main function is to collect, document, preserve, study and present Kenya's past and enhance knowledge, appreciation, respect management and use of these resources • Wetlands working group guide in policy formulation
2. Culture/Structure/Competencies Are the institutions effectively structured and managed?	No there are many overlaps different institutions have components of wetlands in the programmes. No policy on wetlands

12. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	No effective management of government institutions as there is centralized decision making, poor staff motivation Research institutions have unclear and unfocused priorities poor communication with decision makers
13. Financial resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Most institutions have weak financial base and projects are not sustainable as they are donor dependent Budget allocations are recurrent mostly paying salaries not project implementation
14. Information Resources Is required information available and effectively distributed and managed?	Most institutions generate their own information No coordination in sharing of information no effective CHM Most offices lack computers and access to internet facilities. This hampers efforts to manage and distribute information.
15. Infrastructure Are material requirements such as buildings, offices, vehicles, and computers, allocated appropriately and managed effectively?	The state of vehicles, stores infrastructure and equipment in nearly all government institutions is pathetic. The cause for this present state of things has been blamed on lack of operating funds. There is sufficient evidence to add corruption and mismanagement as contributing to the existing state of affairs.
SCIENTIFIC & TECHNICAL CAPACITY 16. Are scientists in biodiversity institutions equipped with the requisite skills?	Most institutions have highly educated scientists with specialities in botany, zoology natural resources but lack skills in participatory , managerial and administrative , policy formulation and communication.
17. Is there sufficient information on genes, species, ecosystems and ecosystem function?	• Information on species is available but not comprehensive. • Information on genes is largely undocumented. The work by the Millennium Seed Bank may contribute to documentation • Information on ecosystems & Ecosystem functions has been documented and can be found sectorally • More research is needed
18. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	Linkages to NEMA are being institutionalized. But there is no effective cooperation and communication.
19. What is the status and quality of scientific infrastructure?	Needs strengthening and in some instances, a complete overhaul to address emerging issues.
20. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of Science & Technology& biodiversity	Not comprehensive. Need to comeup with strategies, guidelines

d) Coastal and marine biodiversity

1. Systemic Level (The overall country environment)

Thematic Area: Coastal & Marine Ecosystems

Capacity element	Assessment
Policy Framework: Is the overall policy environment conducive?	In development stage. However there is a marine management and environmental programme at KEMFRI. Inter-governmental Oceanographic Commission (IOC) office is based at KEMFRI headquarters. KEMFRI organizes public open days with activities like beach clean ups mangrove restoration.
Legal and Regulatory Framework: Is the appropriate legislation in place and are these laws effectively enforced? (These may be both formal and informal, such as cultural mores)	Yes. Mandate of KEMFRI encompasses a legal framework. KEMFRI collaborates with NEMA as the lead agency in environmental matters
Management Accountability Framework: Are institutional responsibilities clearly defined and are responsible institutions held publicly accountable?	Institutions responsible are well defined but there are a few overlaps. For instance, Fisheries department deals with general management and policy while both KEMFRI and Ichthyology department of NMK are research oriented. KEMFRI's institutional responsibilities are clearly defined in their mandates. However accountability and management framework are lacking. Penalties and offences committed to environment are not clearly defined and where they are they are very minor or deterrent.
Economic Framework Do markets function effectively and efficiently?	
Systems Level Resources: Are the required human, financial and information resources available? (These may be in any or all of national and local government, private sector, and civil society – including NGO's)	NMK cannot handle well both freshwater and marine coastal ecosystems due to inadequate human and financial resources. Need to specifically train for environment work only. The human resources are not adequate. Financial constraints are rampant and thus hampering implementation of programmes. Information is available though not adequate, easily accessible and legible. Government rarely funds research, very few NGOs are interested in Marine.
Processes and Relationships: Do the different institutions and processes interact and work together effectively? (Including national and local government, private sector, and civil society)	Currently institutions need more information flow. Yes some programmes cut across the board and the institutions work together

2. Institutional / Entity Level

Thematic Area: Marine & Coastal Eco-systems

Capacity element	Assessment
1.*Mission / Strategic Management* Do the institutions have clearly defined and understood missions and mandates?	Yes. This is reflected in the Fisheries Act CAP 378 and Maritime Zone Act CAP 371. Kenya Marine & Fisheries Research Institute (KEMFRI) is also well articulated in NCST Act. Coastal Development Authority established to have mandate on regulation of projects along the coast. KWS has management of Marine Parks and the conservation of marine ecosystems biodiversity. NMK and Universities have research departments that contribute knowledge.
2.*Culture / Structure / Competencies* Are the institutions effectively structured and managed?	Yes. The institutions are well structured. Systems of management with desirable articulations. NMK may require clear marine and freshwater components setup.
3. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	Although those may be effective, there are some considerable efforts to facilitate proper planning management and monitoring.
4. Human Resources Are the human resources adequate, sufficiently skilled, and appropriately deployed?	Human resources not adequate. Most institutions have undergone staff rationalization, retrenchment and restructuring. The staff may be skilled but not adequate hence redeployment may not reflect the kind of skills in the staff. At NMK current human resource is too few to adequately address all the needs
5. Financial Resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Financial resources more often than not are inadequate. Although efforts are made for proper allocation, sometimes this has not been very effective
6.Information Resources Is required information available and effectively distributed and managed?	Information on coastal and marine is not readily available. However, what is available is not well distributed. It is held in most institutions and accessing it sometimes becomes almost impossible. There is great need for better communication between all the institutions involved to facilitate data sharing and consultations. • KEMFRI has 3 data bases (On Seeds, Sea Grasses and Fish). • There is Ocean Data and Information network for Africa (ODINAFRICA) which KEMFRI is involved with • West Indian Marine Scientific Association (WIOMSA) – has a monthly journal • There is a magazine called WINDoW circulated to KEMFR by ODINAFICA • There is an information exchange desk at KEMFI for RECOSCIX
7. Infrastructure Are material requirements such as buildings, offices, vehicles, computers, allocated appropriately and managed effectively?	Infrastructure is very poor. In many cases institutions involved in coastal and marine resources do not have many resources in terms of vehicles and computers etc. Currently KEMFRI has a database on marine and coastal fish. Available at NMK department of Fisheries

Scientific & Technical Capacity 8. Are scientists in biodiversity institutions equipped with the requisite skills?	Very few institutions involved in biodiversity conservation can claim to have adequate skilled manpower in this field. Yes for NMK.
9. Is there sufficient information on genes, species, ecosystems and ecosystem function?	Information on genes, species, ecosystems and ecosystems functions is inadequate. There is very little known in virus and bacteria in marine. Data on species is very scanty. A few ecosystems e.g. coral reefs and mangroves are studied. NMK is making arrangements to order for the relevant journals.
10. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	There are poor linkages. Information generated by research institutions does not trickle down to biodiversity managers. NMK: Have good linkages with other institutions but improvement is needed.
11. What is the status and quality of scientific infrastructure?	Kenya has some scientific infrastructure in place. Considering the state of development, KEMFRI and national universities have some capacity to conduct scientific studies, although this level may not be desiredable
12. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of S & T in biodiversity?	Science and technology policies are not comprehensive, although this is

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e) Agricultural biodiversity

1. Country level

2. Institutional level

Capacity element	Assessment
1.Mission / Strategic Management Do the institutions have clearly defined and understood missions and mandates?	KARI and KEFRI have strategic plans that direct their operations. The universities have comprehensive course descriptions that determine the types and levels of training offered.
2.Culture / Structure / Competencies Are the institutions effectively structured and managed?	They are well managed and effective in fulfilling their mandates.
3. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	KARI and KAFRI have complete institutional planning structures which work effectively. The universities do not have such processes.
4. Human Resources Are the human resources adequate, sufficiently skilled, and appropriately deployed?	KARI and KEFRI are well staffed with qualified personnel. Issues of deployment are not clear. Most public universities are understaffed, although a high proportion of academic staff are highly skilled. The suitability of deployment varies from institution to institution, but is in most cases appropriate.
5. Financial Resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	A high proportion of financing for KARI and KEFRI comes from donors, and is effectively managed and utilized. Universities are mainly funded by the government, and the level of funding is usually very low. This makes their operation relatively ineffective. The level of research output is low.
6.Information Resources Is required information available and effectively distributed and managed?	All the main institutions have access to the internet, including email services. However the quality and duration of access varies. There is a reasonable level of access and distribution of information.
7. Infrastructure Are material requirements such as buildings, offices, vehicles, computers, allocated appropriately and managed effectively?	KARI and KEFRI are well provided for in terms of infrastructure, and these resources are well managed. The level and quality of infrastructure in the universities varies, but is generally low in terms of allocation and management.
SCIENTIFIC & TECHNICAL CAPACITY 8. Are scientists in biodiversity institutions equipped with the requisite skills?	A majority of the scientists are trained to University level. It is not clear whether they have specific skills to deal effectively with biodiversity.

9. Is there sufficient information on genes, species, ecosystems and ecosystem function?	There is considerable information on species and ecosystems. Information on genes and ecosystem function is not sufficient.
10. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	The linkages are sufficient but of doubtful quality. The level of transaction is low.
11. What is the status and quality of scientific infrastructure?	Scientific infrastructure is in place, and is of reasonable quality.
12. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of S & T in biodiversity?	They are not, and do not give sufficient guidance.

f) Forest Biodiversity

1. Country level

2. Institutional level

	Assessment
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	The Forest Department (FD) in the Ministry of Environment and Natural Resources has the mandate to manage gazetted forests. The FD draws its mandate from Sessional Paper No. 1 of 1968 and the Forest Act Cap 385. FD has revised the Sessional. The forest act has similarly been approved by parliament. The other FD mandates are derived from the Timber Act Cap 386, the Kenya Forestry Master Plan (1995-2025) of 1994, National Development Plans and the National Environmental Action Plan 1994. These instruments bestow upon FD the following functions and powers. • Protection and management of forests on sustained yield basis in accordance with approved management plans • Formulation of policies regarding the management, conservation and utilization of forests. • Provisions of extension services to the County Councils and farmers on planting, tending and sustainable management of forests. • Collection of revenue and other charges. • Management of forests in water catchment areas for purposes of soil and water conservation.
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	The FD has five divisions: Industrial Forestry, Forest Extension Services, Natural Forest Management, Forest Engineering, Project Development and Finance, and Forestry Training College. Assessment of strengths, weaknesses, opportunities and threats of the Forest Department.

Strengths

- Strong physical resource base
- Some qualified scientific, technical, technical and administrative staff.
- Has a network of extension officers as Forest assistants and Forest Guards

Weaknesses

- Centralized decision-making
- Poor staff motivation
- Conservative to new approaches and technologies
- Donor dependency
- Weak financial base
- Unresponsive to communities living adjacent to or the forests.
- Unclear and unfocused priorities
- Limited career opportunities

Opportunities

- Results of the new Forest Policy, the Forestry Amendment Bill, Environment Management and Coordination Act.
- Access to new technologies and information
- To embrace community management of forests
- Current linkages with agriculture as in the new policy
- New partnerships with NMK and KWS.
-

Threats

- Weakness in policy coordination
- Liberalization and weak internal controls
- Brain drain and flight of human capital
- Decrease in the number of partners and collaborators
- Negative attitudes of the pu towards FD.

Under the prevailing circumstances in the country, when a lot of awareness on participatory approaches and human rights has been created, it is right to conclude that FD is inadequately structured and managed. In recognition of this, the government recently suspended the services of 842 foresters including the chief conservator of forests. After a number of investigations were conducted, a number of Foresters were reinstated. This speaks of ineffective management of institutions.

A number of concerns points to the admission that forest management has to be relinquished to the privates sector, public enterprises, tree farmers or local communities.

Another concern in the structure of FD is creation of room for interministerial coordination. FD should ideally have very close links to agriculture, energy, industrial development, tourisms, and culture among others. Links to NGOs concerned with forest biodiversity conservation and management need to be clarified strengthened and institutionalization.

21. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	Planning in FD has depended largely on outside influence and support. The government with support from FINNIDA and DFID completed the Forestry Master Plan and Forestry Policy in 1994 thus fro the first time examining past policy, laws and engaging in planning for the sector in detail. The Forestry Master Plan covers a period of 20 years – 1995-2025, and gives very clear direction for the management of forestry in this country. Arising from the Forestry Master Plan 1995-2025, and understanding that the plan is dynamic, a number of processes have been initiated with a view to operationalizing the Plan, albeit of low-key note. A number of these have been in form of donor supported programmes and projects. Under such cases, there has been a trend towards quality management, and recognizable efforts in monitoring and evaluation. FD as an institution for the greater part of the last decade has been unable to institutionalize effective monitoring and evaluation frameworks. This has been purely due to financial constraints.
22. Financial resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Financial allocations to FD excluding salary and emoluments for staff have been declining. In the last 20 years, FD has relied heavily on donor funds. These have also dwindled due to poor governance. Due to the meager finances available, FD is unable to fulfill its mandate. This is clearly illustrated at the district and divisional level where basic materials and services – stationery, power, water, phones, typewriters and offices in some cases are not available.
23. Information Resources Is required information available and effectively distributed and managed?	At the peak of projects in the Forestry Department in the early nineties, which included the Kenya Forestry Department Project (KFDP), the Kenya Forestry Master Plan (KEMP), Kenya Indigenous Forest Conservation Project (KIFCON), COMIFOR and others, a lot of information was generated. This has unfortunately tended to be the case, that information is generated by donor-funded projects. Accurate and up-to-date information may not be easily available when needed. District Forestry Officers, due to financial constraints are not able to effectively monitor forestry issues in their jurisdiction. Information such as frequency of fires, illegal harvesting and species decline are rarely posted and if so the figures more often than not may be suspect. Most offices lack computers and access to internet facilities. This hampers efforts to manage and distribute information.
24. Infrastructure Are material requirements such as buildings, offices, vehicles, and computers, allocated appropriately and managed effectively?	The state of vehicles, stores infrastructure and equipment in nearly all forest stations is pathetic. The cause for this present state of things has been blamed on lack of operating funds. There is sufficient evidence to add corruption and mismanagement as contributing to the existing state of affairs.
SCIENTIFIC & TECHNICAL CAPACITY 25. Are scientists in biodiversity institutions equipped with the requisite skills?	Most scientists in the FD are trained to diploma. Graduate level or above. They however require training in participatory skills, managerial and administrative skills, and policy formulation skills.
26. Is there sufficient information on genes, species, ecosystems and ecosystem function?	• Information on species is available but not comprehensive. • Information on genes is largely undocumented. The work by the Millennium Seed Bank may contribute to documentation • Information on ecosystems & Ecosystem functions has been documented and can be found sectorally
27. What is the extent and quality of	FD has close linkages to KEFRI and KARI and tends to be guided by their research findings. Linkages to NEMA are being

linkages between research institutions and biodiversity regulatory agencies?	institutionalized and it is too early to comment on the extent. Linkages between FD and KIPI, KIRDI and other bodies need to be strengthened.
28. What is the status and quality of scientific infrastructure?	Needs strengthening and in some instances, a complete overhaul to address emerging issues.
29. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of Science & Technology& biodiversity	Not comprehensive.

g) Inland waters biodiversity

1. Country level
2. Institutional level

	Assessment
1. Mission/Strategic Management Do the institutions have clearly defined and understood missions and mandates?	YES they have a clear mandate • Ministry of Water, main function is water resource development and management. Water is both a resource and a home for a wealth of aquatic biodiversity • Fisheries Department is responsible for fisheries resource management in Kenya. Its main activities include managing fishing activities, aquaculture and issuing fishing licences • The Forest Department (FD) in the Ministry of Environment and Natural Resources has the mandate to manage gazetted forestsProtection and management of forests on sustained yield basis in accordance with approved management plans • KWS it is mandated to conserve and manage wildlife resources both inside and outside protected areas. NFP RAMSAR Convention . There is a wetland programme. • KMFRI is mandated to undertake research on all aspects of aquatic resources • NMK its main function is to collect, document, preserve, study and present Kenya's past and enhance knowledge, appreciation, respect management and use of these resources • Wetlands working group guide in policy formulation
2. Culture/Structure/Competencies Are the institutions effectively structured and managed?	No there are many overlaps different institutions have components of wetlands in the programmes. No policy on wetlands

30. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	No effective management of government institutions as there is centralized decision making, poor staff motivation Research institutions have unclear and unfocused priorities poor communication with decision makers
31. Financial resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Most institutions have weak financial base and projects are not sustainable as they are donor dependent Budget allocations are recurrent mostly paying salaries not project implementation
32. Information Resources Is required information available and effectively distributed and managed?	Most institutions generate their own information No coordination in sharing of information no effective CHM Most offices lack computers and access to internet facilities. This hampers efforts to manage and distribute information.
33. Infrastructure Are material requirements such as buildings, offices, vehicles, and computers, allocated appropriately and managed effectively?	The state of vehicles, stores infrastructure and equipment in nearly all government institutions is pathetic. The cause for this present state of things has been blamed on lack of operating funds. There is sufficient evidence to add corruption and mismanagement as contributing to the existing state of affairs.
SCIENTIFIC & TECHNICAL CAPACITY 34. Are scientists in biodiversity institutions equipped with the requisite skills?	Most institutions have highly educated scientists with specialities in botany, zoology natural resources but lack skills in participatory , managerial and administrative , policy formulation and communication.
35. Is there sufficient information on genes, species, ecosystems and ecosystem function?	• Information on species is available but not comprehensive. • Information on genes is largely undocumented. The work by the Millennium Seed Bank may contribute to documentation • Information on ecosystems & Ecosystem functions has been documented and can be found sectorally • More research is needed
36. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	Linkages to NEMA are being institutionalized. But there is no effective cooperation and communication.
37. What is the status and quality of scientific infrastructure?	Needs strengthening and in some instances, a complete overhaul to address emerging issues.
38. Are science and technology policies comprehensive? Do they give sufficient guidance for overall development of Science & Technology& biodiversity	Not comprehensive. Need to comeup with strategies, guidelines

h) Coastal and marine biodiversity

1. Systemic Level (The overall country environment)

Thematic Area: Coastal & Marine Ecosystems

Capacity element	Assessment
Policy Framework: Is the overall policy environment conducive?	In development stage. However there is a marine management and environmental programme at KEMFRI. Inter-governmental Oceanographic Commission (IOC) office is based at KEMFRI headquarters. KEMFRI organizes public open days with activities like beach clean ups mangrove restoration.
Legal and Regulatory Framework: Is the appropriate legislation in place and are these laws effectively enforced? (These may be both formal and informal, such as cultural mores)	Yes. Mandate of KEMFRI encompasses a legal framework. KEMFRI collaborates with NEMA as the lead agency in environmental matters
Management Accountability Framework: Are institutional responsibilities clearly defined and are responsible institutions held publicly accountable?	Institutions responsible are well defined but there are a few overlaps. For instance, Fisheries department deals with general management and policy while both KEMFRI and Ichthyology department of NMK are research oriented. KEMFRI's institutional responsibilities are clearly defined in their mandates. However accountability and management framework are lacking. Penalties and offences committed to environment are not clearly defined and where they are they are very minor or deterrent.
Economic Framework Do markets function effectively and efficiently?	
Systems Level Resources: Are the required human, financial and information resources available? (These may be in any or all of national and local government, private sector, and civil society – including NGO's)	NMK cannot handle well both freshwater and marine coastal ecosystems due to inadequate human and financial resources. Need to specifically train for environment work only. The human resources are not adequate. Financial constraints are rampant and thus hampering implementation of programmes. Information is available though not adequate, easily accessible and legible. Government rarely funds research, very few NGOs are interested in Marine.
Processes and Relationships: Do the different institutions and processes interact and work together effectively? (Including national and local government, private sector, and civil society)	Currently institutions need more information flow. Yes some programmes cut across the board and the institutions work together

2. Institutional / Entity Level

Thematic Area: Marine & Coastal Eco-systems

Capacity element	
1.*Mission / Strategic Management* Do the institutions have clearly defined and understood missions and mandates?	Yes. This is reflected in the Fisheries Act CAP 378 and Maritime Zone Act CAP 371. Kenya Marine & Fisheries Research Institute (KEMFRI) is also well articulated in NCST Act. Coastal Development Authority established to have mandate on regulation of projects along the coast. KWS has management of Marine Parks and the conservation of marine ecosystems biodiversity. NMK and Universities have research departments that contribute knowledge.
2.*Culture / Structure / Competencies* Are the institutions effectively structured and managed?	Yes. The institutions are well structured. Systems of management with desirable articulations. NMK may require clear marine and freshwater components setup.
3. Processes Do institutional processes such as planning, quality management, monitoring and evaluation, work effectively?	Although those may be effective, there are some considerable efforts to facilitate proper planning management and monitoring.
4. Human Resources Are the human resources adequate, sufficiently skilled, and appropriately deployed?	Human resources not adequate. Most institutions have undergone staff rationalization, retrenchment and restructuring. The staff may be skilled but not adequate hence redeployment may not reflect the kind of skills in the staff. At NMK current human resource is too few to adequately address all the needs
5. Financial Resources Are financial resources managed effectively and allocated appropriately to enable effective operation?	Financial resources more often than not are inadequate. Although efforts are made for proper allocation, sometimes this has not been very effective
6.Information Resources Is required information available and effectively distributed and managed?	Information on coastal and marine is not readily available. However, what is available is not well distributed. It is held in most institutions and accessing it sometimes becomes almost impossible. There is great need for better communication between all the institutions involved to facilitate data sharing and consultations. • KEMFRI has 3 data bases (On Seeds, Sea Grasses and Fish). • There is Ocean Data and Information network for Africa (ODINAFRICA) which KEMFRI is involved with • West Indian Marine Scientific Association (WIOMSA) – has a monthly journal • There is a magazine called WINDoW circulated to KEMFR by ODINAFICA • There is an information exchange desk at KEMFI for RECOSCIX
7. Infrastructure Are material requirements such as buildings, offices, vehicles, computers, allocated appropriately and managed effectively?	Infrastructure is very poor. In many cases institutions involved in coastal and marine resources do not have many resources in terms of vehicles and computers etc. Currently KEMFRI has a database on marine and coastal fish. Available at NMK department of Fisheries

Scientific & Technical Capacity 8. Are scientists in biodiversity institutions equipped with the requisite skills?	Very few institutions involved in biodiversity conservation can claim to have adequate skilled manpower in this field. Yes for NMK.
9. Is there sufficient information on genes, species, ecosystems and ecosystem function?	Information on genes, species, ecosystems and ecosystems functions is inadequate. There is very little known in virus and bacteria in marine. Data on species is very scanty. A few ecosystems e.g. coral reefs and mangroves are studied. NMK is making arrangements to order for the relevant journals.
10. What is the extent and quality of linkages between research institutions and biodiversity regulatory agencies?	There are poor linkages. Information generated by research institutions does not trickle down to biodiversity managers. NMK: Have good linkages with other institutions but improvement is needed.
11. What is the status and quality of scientific infrastructure?	Kenya has some scientific infrastructure in place. Considering the state of development, KEMFRI and national universities have some capacity to conduct scientific studies, although this level may not be desiredable

TEAM MEMBERS

- *Prof. T.K.Mukiama, UON Leader*
- *Ms. I.Masinde -CLOUT*
- *Mr. J.Masinde, NEMA*
- *Ms. R.Antipa, NEMA*
- *Mr. A.Kiragu, NMK*

NCSA

BIODIVERSITY ACTION PLAN

OBJECTIVES & OUTPUTS

Objective	Outputs
1. To strengthen institutional linkages & exchange of information	1.1 Institutional and thematic links strengthened
	1.2 Information exchange between institutions enhanced
	1.3 Institutional capacity to collect data on high priority biodiversity issues strengthened
2 . To review and update the NBSAP	2.1 NBSAP reviewed and updated
3. To enhance Human resource capacity	3.1 Number of skilled personnel increased

ACTIVITY MATRIX

	Activities	Indicators	Means of verification	Key Actors (implementers)	Target Group (end users)	Duration of the Activity	Time Frame	Estimated Cost US$
1.1.1	Update the institutional profiles based on the Biodiversity Data Management (BDM) Project report	Questionnaire administered	Institutional profiles updated	NEMA DRSRS NMK KWS FD KIPI KEPHIS	Researchers Policy makers Other biodiversity stakeholders	3 months	Year 1	10,000

1.1.2	Hold consultative meeting of institutional & professional stakeholders	Number of meetings held Invitation letter	Workshop proceedings		Institutional & professional stakeholders	3 Days	Year 1	20,000
1.2.1	Undertake short training course in databank access and search	Invitation letter Number of trainees	Training manuals Certificates issued	Universities Private sector Research & Development Institutions	Data & Information managers Technical staff	3 months	Year 1-3	60,000
1.2.2	Undertake short training course in data and information management & policy communication	Invitation letter Number of trainees	Training manuals Certificates issued	Universities Private sector Research & Development Institutions	Data & Information managers Technical staff	3 months	Year 1-3	60,000
1.2.3	Establish a national biodiversity forum	Schedule of meetings Invitation letter	Registration documents List of members	Forum members	Biodiversity stakeholders	6 meetings	Year 1-3	10,000
1.2.4	Organize awareness promotion workshop on the CHM	Invitation letter	Workshop proceedings List of participants	NEMA	Institutional and professional stakeholders	3 days	Year 1	15,000
1.2.5	Organize regular technical briefing	Schedule and content of meetings Invitation letter	Minutes of meetings Reports	NEMA	Technical and professional staff	1 day twice a year	Year 1-3	10,000 (

	meetings on the CHM				Policy makers			
1.2.6	Create a National biodiversity information exchange charter (agreements, formats, types etc.)	Consultative meetings Draft documents	Signed documents of agreement	Research institutions National Archives CBS NEMA Line Ministries KWS	Biodiversity institutions	6 months	Year 1-2	25,000
1.3.1	Document folklore relating to biodiversity conservation	Consultative meetings Workplan	Database Reports	Department of Culture NMK NEMA	Local Communities Biodiversity stakeholders	1 Year	Year 1-3	60,000
1.3.3	Carry out a study of the cost-benefit analysis of the commercial exploitation of biodiversity resources, especially medicinal plant use.	Commissioning documents Workplan	Reports	NEMA Ministry of Planning & National Development Universities	Biodiversity stakeholders	4 months	Year 1	10,000
1.3.4	Carry out an analytical study on linkages	Commissioning documents	Report	Universities	Biodiversity stakeholders	3 months	Year 1	10,000

	between trade and environment (CBD, WTO, TRIPS, WIPO, FAO treaty etc) and their implications to Kenya	Workplan						
1.3.5	Undertake training in project planning and implementation methods	Notification & nomination Training manuals	Certificates issued List of participants	NEMA	Selected taskforces	2 weeks per year	Year 1-3	45,000
2.1.1	Identify and train review team	Notification & nomination Training manuals	List of team members Certificates issued List of participants	NEMA taskforce	NEMA Biodiversity stakeholders	2 weeks	Year 1	15,000
2.1.2	1st national consensus building workshop	Invitation letter	Workshop proceedings List of participants	NEMA taskforce	NEMA Stakeholders	3 days	Year 1	20,000
2.1.3	Review of current NBSAP & other relevant policy	Workplan Meetings	Minutes Reports	NEMA	NEMA Stakeholders	6 months	Year 1	15,000

	documents such as NEAP, EMCA, other relevant ACTs etc.							
2.1.4	Review other strategies in place to implement NBSAP	Review team in place Workplan	Report	NEMA	Stakeholders	3 months	Year 1	15,000
2.1.5	Review decisions of COP & other relevant Conventions & other agreements & protocols	"	"	"	"	3 months	Year 1	15,000
2.1.6	Identify & fill gaps	"		"	"	3 months	Year 1	5,000
2.1.7	2nd national consensus workshop	Invitation letter	Proceedings	"	"	3 days	Year 2	20,000
2.1.8	Prepare final report	Review team in place Workplan	Report	"	"	1 month	Year 2	5,000
2.1.9	Publication & dissemination of NBSAP	Printing contact awarded Proofs	Printed copies Dissemination records	NEMA	Stakeholders	1 Yr	Year 2-3	30,000

2.1.10	Publicity of NBSAP							50,000
3.1.1	Carry out needs assessment in Training	Assessment team in place Tools and methodologies identified	Report	NEMA Relevant institutions	Professionals Policy makers	3 months	Year 1	10,000
3.1.2	Develop prioritized training programmes	Programme development team in place Tools & methodology identified	Training programme	NEMA Relevant institutions	Biodiversity institutions Training institutions Donors	2 months	Year 1	5,000
3.1.3	Provide training opportunities as follows: • 3 week course on monitoring, evaluation and indicators for 10 people	Course content Workplan List of trainess	Course records Certificates issued	NEMA Universities Ministry of Planning & National Development	Biodiversity stakeholders	I month	Year 1	10,000
	• 1 week course on effective preparation, mandating,	Consultative meetings Workplan	Reports	NEMA Universities	Biodiversity stakeholders	1 week	Year 1	10,000

	and reporting on CBD meetings for 30 people.							
	• 3 short courses on environmental economics & incentive measures (valuation, natural resources accounting, economic instruments and indicators)	Schedules Invited speakers	Reports	NEMA	Biodiversity stakeholders	2 months	Year 1	60,000
	• Nine thematic seminars on sustainable use of biodiversity and the ecosystem approach	Schedules Content	Proceedings Lists of participants	NEMA	Biodiversity stakeholders	9 days	Year 1-3	20,000

	• Five awareness creation workshops on linkages between trade and environment (CBD, WTO, TRIPS, WIPO, FAO treaty etc)	Workshop schedules Invitation letters	Proceedings Lists of participants	NEMA	Biodiversity stakeholders	15 days	Year 1-2	100,000
	TOTAL BUDGET							**740,000**