



## **Sectoral Integration in Eritrea**

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## **1. Introduction**

Eritrea<sup>1</sup> (2010) reported that at independence, Eritrea found itself with serious environmental problems. These included land and pasture degradation, deforestation, low quality of water for drinking and increasing deterioration of the urban environment. The government has taken several policies, legal and institutional measures to effectively address conservation of natural resources and biodiversity while reinvigorating economic growth. The Government adopted macro policy document in 1994 that provides direction for the country's national economic growth strategy, established a Ministry of Land, Water and Environment, potentially providing for a more integrated approach to Eritrea's environmental problems. In 1994, a comprehensive land reform, which is hoped to improved land husbandry and better environmental conservation, was proclaimed. A comprehensive national environmental management plan has been adopted in 1995 and is being implemented. National environmental assessment procedures and guidelines are in place (1999). Poverty Reduction Strategy paper has been prepared in 2004. The national biodiversity stock taking assessment has been prepared in 1999 and there exist a national biodiversity strategy and action plan. A 6 year program supported by Global Environmental Facility (GEF) to protect marine biodiversity has been completed. The National Action Plan to combat desertification and mitigate the effect of drought was prepared and it is under implementation. Sector policies, strategies and programs have been reviewed to integrate environmental issues and other national priorities.

The report covers: agriculture sector, marine and coastal sector, transport sector, mines sector, tourism sector, water sector, education sector, as well as macro policy, Poverty Reduction Strategy Paper, National Environmental Management Plan, land tenure and land use policy, biotechnology sector, environmental impact assessment of development and overall assessment.

## **2. Agriculture Sector**

Agriculture Sector Policy: The Ministry of Agriculture of the State of Eritrea is committed to integrate aspects of biodiversity conservation into agricultural sector policy, strategies, plans and legally binding instruments. The Agriculture Sector Policy aims to promote equal opportunities, market liberalization and support services to the private sector, especially to small holders and small to medium-scale commercial farmers. Specific objectives of the policy are to:

- Rehabilitate and maintain the natural resource base (including biodiversity resources) for agriculture;
- Promote rational exploitation and proper management of natural resources (including biodiversity resources);

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<sup>1</sup> Eritrea (2010) The 4<sup>th</sup> National Report to the Convention on Biological Diversity, Ministry of Land, Water and Environment, Department of Environment, Asmara-Eritrea, July 2010, 124 pp.

- Stimulate private investment in agriculture to boost production;
- Boost employment and income levels in rural areas;
- Realize food security;
- Increase foreign exchange earnings; and
- Increase the supply of all agricultural products to agro-industries.

Forest and wildlife Policy (Draft 2005): The Forestry and wildlife sub-sector, which falls under the Ministry of Agriculture, is the main body concerned with the conservation and management of forests and wildlife resources of the country. Draft forestry and wildlife policy, as a section of the comprehensive agriculture sector policy, has been prepared through intensive consultative process involving all stakeholders in 2005. This document stipulates many aspects of biodiversity issues such as:- enhancing forest regeneration by reducing overgrazing; ameliorating the conflict between agriculture and forests; securing forest tenure rights; promoting afforestation and community participation in forest management; providing incentives in maintaining forests on critical areas; developing programs to reduce forest fires; promoting non wood forest products; establishing and developing protected areas; institutional improvement; and developing conservation education and law enforcement mechanisms.

Forestry and wildlife conservation and development proclamation: Based on the above policy objectives, the Government has promulgated the forestry and wildlife conservation and development proclamation No 155/2006. This Proclamation, in association with the regulations for the issuance forestry permits (Legal Notice 111/2006) and regulations for the issuance of wildlife permits (Legal Notice 112/2006) provides the framework for the conservation and development of forests and wildlife resources of the country.

Eight Articles from the proclamation have particular relevance to conservation and sustainable use of biological diversity resources. These articles:

- Mandates the Ministry of Agriculture to properly implement the Proclamation (Article-4) and to establish and manage protected areas for the conservation of biodiversity, sites of special scientific interest or preservation of landscapes (Article-16 & 17);
- Secures tree tenure to a person who plants trees on any land which that person has a legal right to use (Article-23)
- Provide legal rights to individuals or communities to use a specified land area, for the creation or management of woodlots' (Article 24)
- Prohibits unauthorized hunting, catching, transporting of wildlife or parts or products (Article-25)

- Prohibits unauthorized exploitation, transporting and processing of wood and none wood forest products for commercial purposes, cutting live trees for domestic use and clearing land for agriculture and other purposes (Article-21)
- Prohibits the importation of exotic trees and wildlife and their products without getting permits. It requires verifying that the exotic species is not invasive and does not affect the conservation and sustainable management of the indigenous species and ecosystem.

In accordance with the proclamation, the National Forest and Wildlife Inspection Division has been established under the Regulatory Service Department of the Ministry of Agriculture. This division currently employed 143 forest and wildlife inspectors distributed in the 6 regions. A series of awareness raising workshops have also been conducted at all levels to sensitize the rules and regulations pertinent to the conservation and sustainable utilization of forest and wildlife resources.

Plant Quarantine Proclamation: In addition to the Forestry and Wildlife Conservation and Development Proclamation, Plant Quarantine Proclamation No 156/2006 has also been enacted in order to prevent the introduction and spread of pests through the importation of plants and plant products; take appropriate measures for the control of introduced pests; and prevent the presence of pests in plants and plant products during exportation. This proclamation sets requirement for importation like import permit, phytosanitary certificate and made responsible plant quarantine officer to inspect the imported items.

The Plant Health Division in the Regulatory Services Department of the Ministry of Agriculture is assigned to follow up the implementation of this proclamation. Since its promulgation, the RSD has been working to strengthen the quarantine stations at Asmara airport, as well as Masawa and Assab sea ports. One new quarantine station at Tessenei (land port) near the border of Sudan has also been established.

Agricultural Development Program (2008-2010): Aside from the policy and regulatory frameworks, the Ministry of Agriculture has developed a comprehensive development program (2008-2010) through consultative process conducted in the six administrative regions of the country. In this program, biodiversity considerations such as: enhancing natural regeneration through establishment of enclosures, afforestation and reforestation, strengthening regulatory activities like plant and animal quarantine etc. are well addresses under the natural resources, regulation and enforcement sections.

As monitoring and evaluation process, annual meetings are being organized at national and regional levels. In addition, May 15 every year is designated as National Forestry and Wildlife Conservation and Development Day, to evaluate the status and trends of forest and wildlife resources of the country and discuss ways forward. Every year in this occasion, more than 200 people including high level government officials, regional administrators, students, religious leaders, subject matter specialists, civil societies and local communities participate. Selected individual farmers, communities, schools, churches, mosques are awarded based on their contribution to forest and wildlife conservation and development. In

addition, one out of the six administrative regions gets the highest award of the year i.e. Shilmat- Dma (Baobab-Award).

Post-Crisis Rural Recovery and Development Program (2007-2012):- The program is funded by IFAD and GEF and it has been implemented in Zoba Debub and Zoba Gash Barka since 2009. The project is targeted the improvement of smallholders productivity and to achieve this objective the project identified three major components. These are:

- Capacity building and institutional strengthening,
- Natural Resources Management,
- Livestock and agricultural development.

The Natural Resources Management component recognizes the natural resources in both the highland and lowland areas in which the programme will be implemented are severely degraded by a combination of overgrazing, human population pressure, deforestation, and poor farming practices. The conflict with Ethiopia and its aftermath, and the prolonged drought of 2000-2002 have exacerbated the situation.

The programme has included concerted efforts to redress the environmental problems in the programme area. Programme activities target improved natural resource management, rehabilitation of degraded areas, improved agricultural and livestock production practices, and support of policies and strategies that will encourage community protection of natural resources.

Given that Eritrea is predominantly semi-arid, falls within one of Africa's biodiversity hotspots, and is being adversely affected by climate change, this program will address priority areas related to the Convention on Biological Diversity, the UN Framework Convention on Climate Change (UNFCCC) and the UNCCD priority areas of Sustainable Land Management (SLM). In relation to CBD the project will mainstream biodiversity in production landscapes, sectors and build capacity on access and benefit sharing. In addressing UNFCCC, it will support activities that reduce GHG emissions from land use, land use change and forestry and support pilot and demonstration projects for adaptation to climate change. In addition, it is designed to promote sustainable management and use of forest resources.

The livestock and Agricultural Development Component is designed to promote sustainable livestock and agricultural development. Most of the activities under these sub components are to assist the project area community in alleviating poverty and improve food security by promoting the conservation and sustainable use of agricultural, livestock and rangeland biodiversity and minimizing the adverse impacts of loss or deterioration of biological diversity resources on human well being.

### **3. Marine and Coastal Sector**

The marine and coastal sector is covered by two proclamations and thirteen Legal Notices (Regulations), all promulgated in 1998 and 2003, and these are:

- The Fisheries Proclamation: Proclamation No. 104/1998,
- The Fishery Product Proclamation No. 105/1998,
- The Foreign Fishing Vessel Regulation: Legal Notice No. 38/1998,
- The National Fishing Vessel Regulation: Legal Notice No. 39/1998,
- The Fishery Product Regulation: Legal Notice No. 40/1998,
- The Fishery Product Hazard Analysis Critical Control Points Regulation: Legal Notice No. 41/1998,
- The Potable Water Regulation: Legal Notice No. 42/1998,
- The Aquaculture Products Regulation: Legal Notice No. 64/2003,
- The Additives Regulations: Legal Notice No. 65/2003,
- The Heavy Metals Regulations: Legal Notice No. 66/2003,
- The Factory Vessel Regulations: Legal Notice No. 67/2003,
- Potable Water Regulations in Fishery Product Activities: Legal Notice No. 68/2003,
- The Fishery Product Importation and Exportation Regulations: Legal Notice No. 69/2003,
- Regulations issued to amend the Foreign Fishing Vessels Regulations (Legal Notice No. 38/1998): Legal Notice No. 70/2003,

Regulations issued to amend the Fishery Product Regulations (Legal Notice No. 40/1998): Legal Notice No. 71/2003.

These laws and regulations provide comprehensive coverage about the development and management of the marine sector in Eritrea and contain a numbers of Articles relevant to the protection, conservation and sustainable use of marine biological diversity, including the establishment of marine protected areas.

The fisheries proclamation No. 104/1998 provides a strong legal basis for sustainable utilization of the fisheries resources and broadens the responsibility of the Ministry of Fisheries to all aquatic and coastal resources. The proclamation outlined the need for the establishment of Fishery Advisory Council (Article 6) with its duties and composition which could serve as a plat form for effective integration and coordination of cross-sectoral issues, particularly on coastal area.

The Ministry of fisheries is bound to ensure proper conservation and management of the marine resources (Proc.104/98 Art.8 (1)). The Ministry is particularly bound to ensure that the marine resources are not endangered by exploitation (Proc.104/98 Art.8(1-a)).The Proclamation further provides the

Ministry with the power of declaring closed seasons and closed areas; prohibited fishing methods and gear and specification of gear that may be used (including the mesh size of the net); the species, sizes and other characteristics of fish and other aquatic organisms that it is permitted or prohibited to catch; and schemes for the limitations of entry into all or any specified fisheries (Proc. 104/98 Art.9(2)). Before declaring a protected area the Minister may consult the occupiers of adjoining land, the authorities responsible for other use of the area, the appropriate local government councils and the Fisheries Advisory Council (a council set to assist the management development of fisheries). A declaration of a protected area may prohibit or restrict fishing; dredging or taking any sand or gravel; or otherwise destroy or disturb the natural habitat within such area (Proc.104/98 Art. 13).

The Ministry of fisheries is further provided to participate in environmental protection issues through the powers vested on it to license fishing vessels and reserving areas for Eritrean citizens and national vessels (Proc.104/98 Art. 18 & 49). It can also set conditions to: the type and method of fishing or related activities authorized; the areas within which such fishing or related activity is authorized; the target species and amount of fish or other aquatic organisms authorized to be taken, including any restrictions on them; the period during which fishing or a related activity is authorized; and measures to facilitate enforcement of this Proclamation (Proc.104/98 Art.12). This further strengthens the Ministry's role on conservation and sustainable use of marine biodiversity.

#### **4. Transport Sector**

Biodiversity is also integrated into the Eritrean port management by developing and enforcing regulatory measures in the national port management system (Port Regulations Legal Notice No. 46/2000). This regulation empowers the Department of Marine Transport under the Ministry of Transport and Communications to govern certain part of the Eritrean Marine and Coastal area, particularly area set within the boundary of Assab and Massawa ports. In line with regulations and close coordination with department of environment, Department of Marine Authority takes precaution measure to protect the port from any kind of damage or pollution, refuse the storage of certain goods which are not convenient for handling and dangerous to person, property or the environment and regulate discharging of a marine pollutant.

#### **5. Mines Sector**

Petroleum Policies and legal Issues:- Petroleum operations of the country lie under the jurisdiction of the Ministry of Energy and Mines. The Minister is authorized to direct the implementation of proclamations, and has the power of controlling the operations. Environmental protection measures are treated as part of the whole operation. Article 2 (10) of Proclamation No.108/2000 includes 'environmental protection' in the context of 'petroleum operations'. Unlike legislations of other sectors environmental damage has been defined explicitly in under Article 2 of Legal Notice No. 45/2000 as: 'inter alia, soil erosion, removal of vegetation, destruction of wildlife and marine organisms, pollution of ground water, pollution on surface water, land or sea contamination, air pollution, bush fire, disruption to natural drainage and damage to archaeological, paleontological and cultural sites.' These legislations also apply to the search, exploration and exploitation of sea-beds and the subsoil (Art. 3(3)).

The petroleum Legal Notice provides detailed provisions on environmental protection. Like the mine operations it applies the principles of EIA at two stages in seismographic survey and exploration stage. The EIAs has to include; fuel storage & handling; use of explosives; camps & staging area; liquid & solid waste disposal; cultural & historical sites; selection of drilling sites; terrain stabilization; protection of fresh water horizons; blowout prevention plan; flaring during completion & testing of gas & oil wells; well abandonment; rig dismantling & site completion; reclamation for abandonment; and noise control (Art. 11 (6) Legal Notice). Moreover these proclamations make a general reference to three international standards of environmental protection. All activities shall be in accordance with the 'accepted international petroleum industry standards and practices'; it must be reasonable; and must protect anthropological, archaeological and historical objects and site (Art.14 & 17 of Proclamation, and Art. 2 & 11(4) of Legal Notice).

Eritrea is considered to be potentially rich in mineral resources, even though it has a short history of mining activities. At present, foreign companies and local private investors are engaged in exploring and developing infrastructure to exploit the mineral resources of the country. To eliminate or minimize the adverse effects upon the environment and biological diversity resources of the country, the mineral resources proclamation No. 68/1995 and Regulation of Mining Operation (Legal Notice 19/1995) have been issued with articles that oblige applicant to present environmental impact assessment report. Department of Mine has a mine division whose function is to ensure that mines and quarries are conducted their operation in environmentally safe way.

## **6. Tourism Sector**

The National Tourism Development Plan (2000-2020) has presented the tourism development policy and strategy and the wider aspect of tourism development plan. The Tourism Development Policy and Strategy for Eritrea has given policy directives to address potential impact on environment including biological diversity of tourism. Those directives that strictly linked to biodiversity include:

- Emphasizes the need to develop tourism in a manner that encourages conservation and enhancement of the natural environment, especially protection of scenic areas, watersheds, ecosystems, biodiversity, and expansion of forests and wildlife populations;
- Encourage the involvement of local communities in conservation programs that have linkage with the development and management of tourism;
- Emphasizes development of tourism in a sustainable manner. This means inter alia conserving the natural archaeological/historic, cultural resources of tourism, maintaining and improving the environmental quality of tourism areas and sharing of the benefits of tourism as widely as possible through out the society;
- Emphasizes the need of suitably designed and environmentally appropriate good quality tourist facilities, service and infrastructure that serve the needs of quality tourism and do not result in environmental problem;

- Recognizes the need to ensure the effective management of tourism based on cooperation between the public and private sector and coordination among central, regional, municipal and local governments. Develop effective organizational structures legal and other institutional arrangements, controlling socio-economic and environmental impacts and monitoring all aspects of the progress of tourism.

The National Tourism Development Plan (2000-2020) has identified the most important environmental protection measures that will be integrated into the tourism planning development and management process in Eritrea, These are:

- Not to overdevelop or overuse sites, that is, not to exceed their carrying capacity for tourism development or visitor use;
- To use properly designed infrastructure systems of water supply, electric power, waste management and drainage for tourist facilities. Especially important in Eritrea is provision of adequate waste management systems of sewage and solid waste disposal to prevent pollution problems. If these systems are not already available in the area, then self contained and non-polluting systems must be installed for the tourism development;
- To develop adequate road and other transportation systems, with emphasis on use of non-polluting public transport systems. Electric shuttle buses, for example, can be used in resorts and parks. Proper maintenance of tourist vehicles is important to prevent air pollution as well as promote safety;
- To apply environmentally suitable land use site planning principles, development standards and architectural, landscaping and engineering design in tourism areas. Controls of advertising signs and under grounding of utility lines are important in maintaining an attractive environment;
- To provide open space, parks and generous landscaping in tourism areas and resorts;
- To carefully manage visitor flows at tourist attraction features. At fragile sites, the number of visitors may need to be limited or completely prohibited at certain times such as the breeding season of some animals;
- In natural areas, to prohibit tourists from cutting trees in camping and trekking areas or from collecting rare plant and animal species, and control disturbance of wildlife. Hunting should be prohibited or allowed only under carefully controlled conditions so that the animal populations are maintained at sustainable levels appropriate to their habitats.

Specifically in marine environments along the coast and around the offshore islands, the development plan has identified the following measures:

- Prohibit the collection of live shells, corals, turtles and their eggs and control other marine organisms such as ornamental fish;

- Prohibit divers to use gloves, touch the coral formations or walk or stand on coral formations;
- Prohibit dropping boat anchors onto coral formations and provide proper mooring buoys for boats in diving areas;
- Prohibit cleaning boat bilges or other types of oil or wastewater spillage into protected marine areas;
- Prohibit disposing of any type of solid waste material such as garbage from boats or on beaches where the boats may stop over. Such material must be carried to the port of return and properly disposed on land;
- Design marinas and piers so that they do not create erosion or disposition problems along shorelines, such as requiring that piers be on pilings that allow free flow of water under the pier;
- Prohibit dumping of solid waste from hotels and restaurants on the beach or on in the water, and ensure that solid waste is properly collected and disposed;
- Clean the beaches in tourism resort areas regularly.

## **7. Water Sector**

Eritrea, in line with its international commitments to develop integrated water resources management (IWRM) and efficiency plans by 2005 has completed the development of IWRM plan in 2009. This management plan is intended to promote the co-ordination, development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. To integrate the IWRM principle the 2004 national water policy was reviewed in 2007 and it recognizes drainage basin as the basic unit of planning. Specifically the draft water policy:

- Emphasize to incorporate environmental conservation and protection requirements as integral parts of water resources management;
- Encourage that Environment Impact Assessment and protection requirements serve as part of the major criteria in all development projects including water resources development projects;
- Promote coordination of activities of the various regulatory bodies and development organizations in-order to ensure more effective and timely environmental protection;
- Emphasize the need to develop guidelines for the close integration of water and land-use managements.

## **8. Education Sector**

Environmental education is highly integrated into elementary, middle and high school curriculums. Department of Curriculum of the Ministry of Education with support of Ministry of Agriculture and

Ministry of Marine Resources has integrated environmental issues including biodiversity in school text books and teaching material, particularly in the fields of science and social sciences. In 2009, Ministry of Education, with financial support from the Government of Japan and technical support from UNICEF has prepared 6 teachers manual “Environmental guidelines for teachers”. Of these 4 of them addresses biodiversity. These are:- 1) Green club manual for elementary schools 2) A manual for environmental education within social studies 3) A manual for environmental education within English; 4) A manual for environmental education within science; 4) Food garden and mini forest a manual for elementary school. In addition Ministry of Education in coordination with a number of sectors is in the process of establishing a Children Educational and Research Center.

Hamelamlo Agricultural College: Hamelmalo Agricultural College (HAC) was established in 2005 and merged with the College of Agriculture, University of Asmara in 2006. HAC currently offers Diploma and Degree programs namely 1)Agricultural Engineering 2) Land Resources and Environment 3) Agricultural Economics 4) Agricultural Extension 5) Crop protection 6) Crop production 7) Horticulture 8) Animal Science and 9) Veterinary Science.

College of Marine Science and Technology: College of Marine Science and Technology has been open in 2005 and currently offering four degree and five diploma programs under 4 departments. These departments are: 1) Department of Applied Marine and Fisheries Science (AMFIS); 2) Department of Aquaculture; 3) Department of Marine Biotechnology; and 4) Department of Marine Engineering (ME). This higher education program has significant contribution on the conservation and sustainable use of biological diversity.

Institute of Science and Technology Mai Nefhi Department of Biology: The department is providing in four biodiversity related courses: 1) Animal zoology and plant ecology; 2) Biodiversity and conservation; 3) Morphology and taxonomy of flowering plants; and 4) invertebrate and vertebrate zoology Summer Student Campaign:- Since 1994, Eritrean students throughout the country have participated in reforestation and soil-conservation campaigns during Kremti (June-July) during their summer vacations. One of the main objectives of implementing the program is to cultivate responsible citizen who will participate in protecting and conserving the natural environment by engaging into the actual conservation work which simultaneously raise awareness and promote practical education. This program is usually organized jointly by the MoE and the MoA. On average more than 18,000 students participated every year in the summer student campaign.

## **9. Macro policy**

The micro policy document was adopted in 1994 and provides a background for the country’s national economic growth strategy and states the guiding principles for human centered, efficient, sustainable and equitable development. This policy document clearly states the need for environmental impact assessments to determine the potential environmental consequences of major investment decisions. It recognizes the negative impacts of some traditional farming practices on crop productivity, as well as progressive environmental degradation attributed to increasing demands for fuel wood, and inadequate soil and water conservation measures. In addition it states that the commitment required from the

government to allocate financial resources to promote the rehabilitation, conservation, development and proper exploitation of natural resources.

## **10. Poverty Reduction Strategy Paper**

The 2004 Interim Poverty Reduction Strategy Paper (I-PRSP) provides an overview of the nature of poverty in Eritrea, and states the Government's commitment to poverty reduction. Of the various economic development strategies and action proposed those directly related to the conservation and sustainable utilization of biodiversity include:

- 1) Increasing water availability: The strategy is to harness the seasonal water flows and direct them to where they are needed, through catchments rehabilitation, rainwater harvesting through construction of embankments, canals, lining of watercourses and introducing modern methods that enhance on-farm water use efficiency;
- 2) Increasing farm productivity by introducing modern farming techniques and management methods, primarily farm inputs, wide spread use of improved pest control, reducing post harvest losses and developing and disseminating more drought resistant, fastermaturing seed varieties. In addition soil conservation measures to improve soil fertility and construction of check dams, planting / afforestation to protect and restore the rural environment were identified as appropriate action relevant to reduce poverty by conserving biodiversity and the natural environment;
- 3) Promoting production of high value crops;
- 4) Expanding land under cultivation by bringing under cultivation vast tracts of fertile land so as to enable farmers to intensify and diversify their agricultural production systems; and
- 5) Modernizing and expanding livestock and dairy production by realizing the good potential for increasing earnings from production of livestock (goats, sheep, cattle, camels, pigs and poultry).

## **11. National Environmental Management Plan**

The national environmental plan for Eritrea was adopted in 1995, and is the basis for action in environmental management and conservation. The guiding principle outlined in the plan include the:

- Recognition of the strategic importance of a good management of renewable terrestrial, coastal and marine resources and maintaining environmental quality as part of the national economic growth and development;
- Importance of developing strategies for integrated and multiple uses of natural resources while ensuring local involvement and equity in environmental management; and
- The need to balance broad-scale management (e.g., national and regional environmental legislation, and economic incentives and disincentives) with targeted management (e.g., establishment of protected area and rehabilitation of heavily degraded ecosystem).

## **12. Land Tenure Proclamation (1994)**

This new land policy is aimed at eliminating periodic redistribution, curtailing land disputes, increasing duration of the land rights and enhancing exclusivity and transferability rights. These measures are hoped to provide land cultivators with more secure land rights, which ultimately will contribute in boosting long-term investment, improved land husbandry and better environmental conservation. The new land law will permit the classification and allocation of land on a more rational and scientific basis, avoiding fragmentation, and ensuring the establishment of appropriately-sized reserves for woodlots, grazing, and communal, housing and urban facilities.

## **13. Draft land use policy**

The land use policy was drafted in 2007 with the aim (goal) of facilitating land use that sustain and promote economic growth while guiding the development of land to produce a healthful, efficient and aesthetically pleasing environment by conserving natural resources and encouraging development partners that protects natural resources.

The new policy has set the following objective which all has direct contribution to the conservation and sustainable use of biodiversity:

- To relate the use of land to its potential and sustainability for development,
- To preserve the ability of freshwater and wetlands to perform their valuable natural functions through conservation and protection,
- To preserve and enhance fauna and flora diversity and stability through habitat protection and enhancement, and prevention or mitigation of adverse impacts of land use changes,
- To preserve and protect coastal resources, which contribute to the economic development and improve quality of life of the people,
- To preserve areas of heritage significance, and
- To avoid conflicts that may arise between different land use interests.

The policy has expressed the governments perception of the direction to be taken on major issues related to a) agricultural land use; b) rangeland; c) forest land; d) urban and built up land use; e) coastal land; f) water bodies, g) conservation area; h) wetland; i) Heritage sites; j) mineral areas; and k) barren land.

## **14. Preparation of National Action program (NAP)**

In pursuant to Article 5 of the convention to UNCCD, Eritrea in 2002, have prepared a national action program (NAP) that identifies factors contributing to desertification and practical measures necessary to combat it and mitigate the effect of drought. NAP has given particular attention to preventive measures. The actions under NAP have entailed both policy and institutional measures to facilitate the

establishment of an enabling environment at the national level for sustainable resource use, as well as local level development activities to preserve and/or restore the resource base and improve livelihood security of the affected populations. In relation to biodiversity conservation and sustainable use NAP has:

- Identifies key concerns and threats to flora and fauna;
- Emphasized the need for creation of protected area system (in situ conservation) and identified four priority areas for conservation of biodiversity (The Semenawi Bahri, North of the river setit, reverine habitat along the Gash and Barka Rivers and the Buri Peninsula);
- Proposed actions that make effective enough the traditional practices and customary laws in conserving and sustainable use of the natural flora and fauna of Eritrea;
- Recommend actions that strengthen the ex-situ conservation capacity of the nation on biodiversity resources;
- Identify actions related to laws that promote the conservation and sustainable use of biodiversity;
- Identify ways to establish international cooperation with international organizations with respect to technical assistance, scientific research and financial support; and
- Identify actions required to improve, conserve and use sustainably the agricultural, livestock, rangeland and forest resources of the country.

To speed up the implementation of the National Action Plan (NAP) Eritrea has developed 20 project profiles that are priority area for immediate action. These profiles are documented in an elaborative format that could make them favorably considered by financial institutions, donors, etc. Out of these 20 projects 16 of them will directly contribute to the implementation of CDB articles while at the same time addressing land degradation and/or impact of climate change issues. These are:

- Mapping and land classification for resources assessment,
- Application of land tenure system and introduction of community land use planning in pilot areas,
- Assistance to farmers for in-situ conservation of indigenous crops and landraces,
- Soil and soil moisture assessment at watershed scale using remote sensing and GIS,
- Community awareness raising,
- Dissemination of improved traditional wood stoves,

- Promotion of renewable energy technologies for rural community benefits (solar photovoltaic promotion project),
- Establishment of gazetted protected area,
- Fuel wood plantation for sustainable supply of biomass fuel,
- Natural forest and woodland conservation and management,
- Development of agro forestry/ farm forestry,
- Identification of useful grasses and forbs of Eritrea,
- Reviewing and revising existing customary (traditional) law on the management & utilization of communal grazing lands,
- Comparative analysis of livestock versus crop production,
- Establishment of shelterbelts in areas prone to dust storm,
- Establishing local land degradation committees.

### **15. National Capacity Needs Self Assessment**

Ministry of Land Water and Environment with financial and technical support from GEF and UNEP completed a National Capacity Needs Self Assessment (NCSA) through a country driven consultative process. The Project has identified gaps and priority needs, opportunities for synergistic cross cutting and strategy and action plan for capacity building in the country at various levels, to help implement global environmental conventions, mainly focused on UNCBD, UNCCD and UNFCCC. The action plan has identified eight synergetic capacity building intervention areas. (MoLWE, 2007)

### **16. Biotechnology sector**

The Cartagena protocol on Biosafety to the Convention on Biological Diversity entered into force for Eritrea on 8th of June 2005. Eritrea has initiated the implementation of Cartagena protocol on Biosafety by conducting a survey on the status of biotechnology (practice and policy) in the country and developing of a National Biosafety Framework with financial support from GEF/UNEP. The framework includes four sets of guidelines for: 1) Handling requests/permits for authorization; 2) Risk assessment of genetically modified organisms (GMOs); 3) Public awareness and participation in biotechnology/biosafety; and 4) Protection of confidential business information (CBI).

Eritrea is practicing the traditional biotechnology and has not yet reached the level of using modern biotechnology. The practice is restricted only in fermentation, brewing and animal breeding. University of Asmara used to practice tissue culture for research purpose. The National Agricultural Research Institute is also in the process of a tissue culture laboratory. Biotechnology and biosafety being new the public awareness on the extent and nature of risk associated with genetically modified organisms

(GMOs) is low. No policy specifically tailored to address biotechnology as well as biosafety matters that arise in the context of the adoption and/or application of biosafety (MoLWE, 2007).

## **17. EIA of Development**

### **Projects and Others**

The Ministry of Land Water and Environment being responsible for the implementation of the national environmental policies and strategies has developed the National Environmental Impact Assessment Procedures and Guidelines in 1999. This document lays out the general principles, approaches and instruments to fulfill the obligations required to maintain a safe and healthy environment and through the application of its procedures determine the potential negative environmental consequences of all development projects. Moreover, the NEAPG is a tool for integrating environmental issues into a planning process. The NEAPG document contains a set of procedures such as the screening and categorizing projects. Based on their type, size, location, and mode of operation projects are categorized in one of the following categories:-

- Small scale projects having minimal impact on environment (Category C),
- Big or large projects with clear potential impact but having cost-effective mitigation measures to minimize these impacts , (Category B),and
- Large-scale projects having major impacts on the environment are expected to pass through a full-fledged impact assessment (Category A).

For category-A projects the project owner is obliged to conduct full-fledged environmental impact assessment and management plan that minimize the impact to acceptable limit. The environmental impact assessment and the environmental management plan is reviewed by an impact review committee (IRC) from relevant ministries such as: the Ministry of Land Water and Environment (Chair), Ministry of Agriculture, Ministry of National Development, Ministry of Energy and Mines, Ministry of Health, Ministry of Public Works, Ministry of Labor and Human Welfare, National Museum, etc. For category B projects, however, only environmental evaluation process is required.

Despite all these effort the use of NEAPG during the planning and development of national project is very limited mainly due to lack of coordination between government institutions, low level of awareness about NEAPG at all level, shortage of fund and skilled human power in the area of EIA. Since the adoption of this document, very few projects are checked against the environmental impact assessment procedures and guidelines and granted environmental clearance. A case in point is the success story of the BISHA Mining Project in the western lowland of Eritrea, where an intensive social and environmental impact assessment has been conducted and management plan developed and reviewed by IRC.

To integrate environmental issues in sectoral development programs and activities targeting the coastal, marine and island environment, Ministry of Fishery has circulated Environmental Evaluation Questionnaire (EEQ) for those considered category B projects as per NEAPG.

## **16. Overall assessment**

During the preparation of the 4<sup>th</sup> national report it was possible to notice that the level of communication and follow up on the implementation of NBSAP was not reached to a level it is required to accomplish the planned actions. However, the progress made towards implementing priority actions set in the NBSAP is satisfactory and that is mainly due to the integration of biodiversity and NBSAP priority areas into different sectors programs and plans. For example, the efforts made to mainstream biodiversity and environmental education into the educational curriculum, the student summer campaign, awareness raising programs, the Warsay Yikealo Development campaign has significantly contributed to attitude change at all levels that positively contributed to the achievements of NBSAP and the existing status and trend of biodiversity particularly in the central highlands.