

STATE OF ERITREA

MINISTRY OF LAND, WATER AND ENVIRONMENT

DEPARTMENT OF ENVIRONMENT

Final Report
Thematic Assessment Study
(UNCBD, UNCCD and UNFCCC)

**NATIONAL CAPACITY NEEDS SELF-ASSESSMENT (NCSA)
FOR GLOBAL ENVIRONMENTAL MANAGEMENT IN
ERITREA**



**Submitted
by**

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1.1 Introduction

The world is facing serious environmental problems such as land degradation, loss of biodiversity, pollution of air, water and soil, which is caused due to population growth, poverty, and other pressures on the ecosystem. This has led to serious concern worldwide, which culminated to action at global level since environmental problems are transboundary and are seldom local or national.

As a result of the need for international action in 1992 the three Rio conventions emerged, whose goals are to place human beings at the center of environmental concerns and to combat and mitigate environmental degradation. It recognizes that National Governments play a critical role in combating and mitigating the effects of environmental degradation and that progress depends on local implementation of programmes in affected areas.

The conventions recognize environmental degradation as a function of poverty and thus promote models of rural development that clearly have their ownership at village level. They also also promote the need for close consultation with civil society.

As part of its commitment to sustainable development Eritrea has ratified the three most important environmental United Nations conventions, namely: Convention on Biological Diversity (CBD), Framework Convention on Climate Change (UNFCCC) and Convention to Combat Desertification (CCD), thereby confirming its strong commitment to environmental issues.

The Eritrean Government also recognises that environmental protection is necessary to achieve poverty reduction and therefore sustainable human development, as environmental degradation disproportionately impacts on the poor.

The rationale of the study is to have a comprehensive knowledge about the capacity of Eritrea to meet its obligations in implementing the UNCBD, UNCCD and UNFCCC environmental conventions. This is simply because land degradation and desertification are arguably the most serious and widespread environmental problems facing Eritrea. The idea behind such a choice is because so far Eritrea has not being able to meet fully its obligations due to lack of capacity in implementing projects. Hence the necessity to identify, analyse and ascertain the priorities in capacity development needs relating to the implementation of the three Rio conventions.

1.2 Objective of the Study

The objective of the National Capacity Self-Assessment is to review Eritrea's implementation of the three Conventions in Eritrea with a view to identifying priority areas for action to facilitate better implementation.

The Main objectives of the thematic assessment are to:-

- Identify status of the conventions in Eritrea;
- Establish priority issues;

- Assess capacity constraints for these issues at various levels (systemic, institutional and individual); and
- Assess opportunities for capacity building to address the identified constraints.

This includes familiarization of the obligations of the Conventions, evaluation of the previous projects and identification of on-going projects and measures currently being carried out by governmental and non-governmental institutions, if any, to implement the Conventions.

This is a good opportunity to assess the experience gained, lessons learned, gaps and constraints in the process of implementing this Convention and as an input to the on-going National Capacity Self-Assessment (NCSA) project in the country.

1.2.1 Scope of Service

The project is being implemented in three phases, namely:

PHASE 1.

Stage 1: Thematic Profile

- a). Review of obligations under each convention
- b). Analysis of national programmes and provisions
- c). Facilitation of National Workshops

Stage 2: Thematic Assessments

- a). Capacity Assessment

PHASE 2: Synergies

- a). Synergies/Cross Cutting Assessment
- b). Elaboration of the assessments

PHASE 3. Capacity Building Action Plans

It should be noted that this study was carried out in fulfilment of Phase 1 of the NCSA project.

1.3 Methodology

Literature review was done from national, regional and international documents related to the Rio Conventions. Key issues affecting the state of the environment in Eritrea were identified. The relationship between issues affecting management of the environment with national policy frameworks, and strategic development action plans were also established. Focus was made on collecting relevant statistical information/data from the Ministry of Land, Water and Environment, Ministry of Agriculture and Energy and Mines, UN agencies and few NGO's.

A thorough analysis of the findings of the Stakeholder Study was carried out, which had a lot of data that were not used in the Phase 1 NCSA study. It has to be noted that

the data collected was pertinent to the entire NCSA study. The stakeholder study had provided a “baseline situation” of the country’s implementation of the Convention.

Some of the main stakeholders were revisited with special emphases on the type of human resources available to fulfil the obligations of the conventions and their capacity constraints.

Data collection was undertaken by three teams of experts with the help of semi-structured questionnaires, such as ‘discussion guides’ for key informants in institutions.

The main focus of the team during the project assessment have been the project’s ownership, institutional set-up, staffing and capacity building, operations and its physical progress and achievements, sustainability and implications to socio-economic impact to the environment in general and in relation to the climatic changes and combating desertification and preservation of biodiversity in particular as well as assessing the capacity constraints of stakeholders and suggested solutions.

This analysis is aimed at identifying established priorities, capacity constraints and needs, as well as the identification of any existing information gaps. The following tools were used:

- Logical Framework Approach (LFA): so far the situation and stakeholder analysis and problem identification and objective analysis has been carried out and what remains is analysis of alternatives and action planning.
- Problem and Objective Trees Analysis tool and
- SWOT analysis
- The results of the National Workshop were also incorporated in this report.

II. THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

2.1 Background

The Convention on Biological Diversity (CBD) is one of the three “Rio Conventions” which was opened for signature on June 5, 1992 at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil. The Convention entered into force in December 1993 and Eritrea acceded to the CBD on 21st of March 1996. Eritrea has also ratified the Cartagena Protocol on Biosafety to the CBD.

Goals of Convention on Biological Diversity (CBD):

The CBD has three main goals:

- Conservation of biodiversity
- Sustainable use of biodiversity
- Sharing fairly the benefits of genetic resources use

Purpose of the Study

This National Capacity Self-Assessment within the thematic area of Biodiversity seeks to review Eritrea’s implementation of the CBD with a view to identifying priority areas for action to facilitate better implementation.

The objectives of the thematic profile are to identify:

- Priority issues;
- Capacity constraints for these issues at various levels (systemic, institutional and individual); and
- Opportunities for capacity building to address the identified constraints.

2.2 Obligations of Eritrea under the CBD

The Biodiversity Convention provides a number of general obligations for member states. As a signatory to the convention, Eritrea is expected to make appropriate legal and institutional adjustments to enable it implement and enforce the provisions of the conventions. This obligation requires political commitment to biodiversity conservation by our policy makers. Eritrea is also expected to adopt policies favorable to biodiversity conservation, and to commit financial resources for implementation of its provisions.

These include in particular a commitment to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. Member states must also integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. Such as developing the National Biodiversity Strategy and action plan (NBSAP) and to integrate its components into relevant sectoral or cross-sectoral plans, programmes and policies as provided for in Article 6 of the CBD and identifying and monitoring the important components of biological diversity that need to be conserved and used sustainably, a fulfillment of Article 7.

Generally, member states are required to promote the sustainable use of biological resources by integrating consideration of the conservation and sustainable use of biological resources into national decision-making, adopting measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity; protecting and encouraging customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements; supporting local populations to develop and implementing remedial action in degraded areas where biological diversity has been reduced; and encouraging cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources (Article 10 of the Convention).

The main convention activities that Eritrea is required to undertake are in articles 6, 8 and 10. However for more detailed convention obligations the United Convention of Biological Diversity has to be referred.

BOX 1

Article 6: General Measures for Conservation and Sustainable Use

“ Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned; and*
- (b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.”*

BOX 2

Article 8: In-situ Conservation

“Each Contracting Party shall, as far as possible and as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;*
- (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;*
- (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;*
- (d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;*
- (e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;*
- (f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies;*
- (g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology, which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;*
- (h) Prevent the introduction of, control or eradicate those alien species, which threaten ecosystems, habitats or species;*
- (i) Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components;*
- (j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;*
- (k) Develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations;*
- (l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities; and*
- (m) Cooperate in providing financial and other support for in-situ conservation outlined in subparagraphs (a) to (l) above, particularly to developing countries.”*

BOX 3**Article 10: Sustainable Use of Components of Biological Diversity**

“Each Contracting Party shall, as far as possible and as appropriate:

- (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;*
- (b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;*
- (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;*
- (d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and*
- (e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.”*

2.3 Efforts made to implement key issues of the CBD

Eritrea has taken several steps to address the major issues of the CBD as described below:

Article 1. Objectives

- a) Conservation of biological diversity:
 - NBSAP (2000) states, “The overall biodiversity of Eritrea restored, conserved and managed.”
 - Draft Environmental Law Article 13 states that “Conserve and regulate the country’s biological diversity” and Article 43 of the Law states, “ensuring effective conservation of biological diversity.”
 - National Environmental Management Plan for Eritrea (1995) states “Protect and enhancement of Eritrea’s natural resource.”
 - National Economic Policy Framework and Program (1998) states the “restoration, enhancement, and preservation of Eritrea's ecological integrity”
- b) Sustainable use of its components (i.e. ecosystem, species and genetic levels)
 - NBSAP (2000) states “ensure sustainable use of terrestrial, agro- and marine biodiversity resources of Eritrea” and “provides the sustainable use of biodiversity resources”
 - Draft Environmental Law Article 43 states the “sustainable use of biological diversity components: ecosystems, species, and genetic resources.”
 - National Environmental Management Plan for Eritrea (1995) states about the “optimal social and economic development can be achieved in consonance with rational and sustainable use of natural resources.”

- National Economic Policy Framework and Program (1998) states on the:
 - ❖ Prudent utilisation of land, forest, air and water resources
 - ❖ Sustainable exploitation of Eritrea's resources
 - ❖ Developing standards, and taking steps to ensure that environmentally sustainable practices are pursued in Eritrea's economic endeavors."
- c) The fair and equitable sharing of benefits arising out of the utilization of genetic resources and by transfer of relevant technologies
- NBSAP (2000) states that the Government "provides environmental services and natural resources that contribute to sustainable, and socially-fair, national economic development."
 - Draft Environmental Law Article 43 states that it will "ensure access to genetic resources that are an integral part of the natural wealth of the State of Eritrea."
 - National Environmental Management Plan for Eritrea (1995) states that "optimal social and economic development can be achieved in consonance with rational and sustainable use of natural resources."
 - National Economic Policy Framework and Program (1998) "lays out the policy objectives and strategy, including equitable resource utilization, for the main economic sectors, including agriculture, fisheries, manufacturing, energy and mining, tourism, infrastructure, health and education."
- d) Appropriate Funding
- NBSAP (2000) ascertains funding and other needs, and as well as identifies funding agencies.
 - Draft Environmental Law Articles 13,26, 28 state that funds from voluntary contributions, financial aid or grants, from sources within and outside of Eritrea shall be used for projects designed to promote environmental conservation and sustainable development.
 - National Environmental Management Plan for Eritrea (1995) identified appropriate funding for all project proposals from national and external sources.
 - National Economic Policy Framework and Program (1998) ensures funding through adoption and implementation of a comprehensive national environmental policy framework

Article 2. Use of terms

All national documents, including NBSAP, adopted definitions of the CBD.

Article 3. Principles

Sovereignty responsible to do no harm:

- NBSAP states that "The overall biodiversity of Eritrea restored, conserved and managed so that it provides environmental services and natural resources that contribute to sustainable, and socially-fair, national economic development".
- Draft Environmental Law indicated that the national policy for integrated environmental management and protection shall be based on the concept of preventing environmental harm rather than attempting to remedy or compensate for such harm.

Article 4. Scope

- NBSAP encompasses all jurisdictional scope in accordance to the constitution.

Article 5. Cooperation

- The strategic elements of the NBSAP “binds together” the individual activities of different sectors and creates the framework for greater collaboration.
- Draft Environmental Law stresses on the need for the State of Eritrea to make an effective contribution to international cooperation related to environment and sustainable development.

Article 6. General Measures for Conservation and Sustainable Use

- a). Develop national strategy, plans or programmes for the conservation and sustainable use of biological diversity or adapt existing ones
 - The NBSAP has been produced to meet this provision.
 - Preparation of First and Second National Reports to the COP.
 - Draft Environmental Law addresses to establish the foundation of environmental policy and law in Eritrea and provide the basic instruments for implementing, managing, monitoring and enforcing it;
- b). Integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies
 - In NBSAP, integrated management of biodiversity resource has been identified as major strategic element.
 - ECMIB project aims to formulate Integrated Coastal Zone Management of Eritrea.
 - Draft Environmental Law indicated that:
 - ❖ Coordination and integration of environmental policies and macroeconomic development decisions necessary; and
 - ❖ Environmental policies, laws and regulations shall be coordinated by the Ministry among line ministries and other bodies involved in environmental management so as to entrench and effectively integrate them into national macroeconomic planning and decision making process.

Article 7. Identification and Monitoring

In the NBSAP, the biodiversity of Eritrea are identified and monitored under three core areas:

- The natural terrestrial habitats, which are characteristic of the region;
- The diverse agro-ecosystems, which have developed as a result of traditional agricultural activities in the region; and
- The coastal marine and island ecosystems of the Red Sea.

The NBSAP, regarding updating lists of endangered species, has strategic elements, which represent the major areas of activity for implementation of the NBSAP and provide a better basis for monitoring and evaluation.

A Stocktaking and inventory of existing information with regard to Eritrea’s biodiversity resources was finalized and a book entitled” Biodiversity Stocktaking Assessment Report” was published (1999).

The NBSAP has mentioned about the enormous environmental and economic damage in areas of conflict. In the light of the above, the NBSAP has adopted a pragmatic approach to what might realistically be achieved over the next few years with respect to biodiversity conservation and sustainable use.

National Environmental Assessment Procedures and Guidelines (1999) has identified processes/activities likely to adversely impact conservation and sustainable use of biodiversity.

The Department of Environment is continuously monitoring potential pollutants, which adversely affect Marine Biodiversity of Eritrea.

Article 8. In-situ Conservation

The NBSAP stated that:

- Formalisation of the process for establishing a protected areas system appropriate for the current and future Eritrean conditions by establishing a working group to harmonise policy/legislation on protected areas.
- Establish protected area management plans and monitoring programmes.
- The preservation of the flora and fauna through identification, survey and border demarcation of representative protected area(s)
- At present Eritrea does not have formal protected areas. Historical protected areas established under colonial regimes have not been maintained and no longer have any legal status. However a number of new sites have been prioritized for increased conservation and management,
- Improved biodiversity benefits associated with closures programme by formalisation of selection criteria for closures; increased monitoring of established closures; and establishment of new closures.
- Prepare a species conservation network and action plans for the protection of endangered endemic, migratory and/or indicator species
- The human resources of quarantine and services at points of entry are to be strengthened and improved.
- The legal responsibilities and procedures for gazettment of protected areas must be clarified as soon as possible. This is a major limiting factor to any progress in the creation of protected areas. In the interim, survey work to document significant biodiversity of high priority sites should continue, but also carry out the local consultations required to ensure that increased biodiversity conservation is compatible with other social requirements.
- In addition to survey of priority sites, knowledge of the conservation needs of particular species should also be improved through “targeted surveys”. The ecological survey work and community consultation undertaken by the MoA on the globally-threatened African Wild Ass (*Equus africanus*) around Ila Isa can serve as a model for this kind of activity. It should be a priority to survey the open uplands around Senafe area in order to establish the current status and conservation management needs of the 13 regional endemic bird species likely to occur in Eritrea.

Article 9. *Ex-situ Conservation*

In compliance with this provision, the NBSAP stated that:

- Preparation of a feasibility study for the establishment of Zoological and Botanic Gardens; Natural History Museum; and Aquarium.
- Establishment of zoo, botanical garden and gene bank.
- To increase representation of indigenous landrace material in *ex-situ* collections through: (a) in country collection; (b) repatriation of material from international collections.
- Increase biodiversity benefits arising from *ex-situ* conservation facilities.
- Promote conservation of threatened species through multi-sectoral approach.

Article 10. *Sustainable Use of Components of Biological Diversity*

- The NBSAP has been produced to meet this provision.
- NBSAP (2000) states “ensure sustainable use of terrestrial, agro- and marine biodiversity resources of Eritrea” and “provides sustainable use of biodiversity resources”
- Draft Environmental Law Article 43 states about the “sustainable use of biological diversity components: ecosystems, species, and genetic resources.”
- National Environmental Management Plan for Eritrea (1995) states that “optimal social and economic development can be achieved in consonance with rational and sustainable use of natural resources.”
- National Economic Policy Framework and Program (1998) states on the:
 - ❖ “Prudent utilisation of land, forest, air and water resources
 - ❖ Sustainable exploitation of Eritrea’s resources
 - ❖ Developing standards, and taking steps to ensure that environmentally sustainable practices are pursued in Eritrea’s economic endeavors.”

Article 11. *Incentive Measures*

The NBSAP addressed the promotion of food for work program in conservation and sustainable use of biological resources.

Draft Environmental Law Article 35 regarding Economic Incentives stated that:

- 1) “*Economic incentives shall, where appropriate and to all extent possible, be used to complement regulatory measures to achieve the objectives of environmental protection and sustainable development.*”
- 2) Subsidies, awards or other financial or in-kind assistance shall be introduced, as appropriate, to reward environmentally friendly behavior and to promote the development and use of clean technologies and alternative sources of energy.
- 3) Fees, taxes, charges, or other financial imposition shall, as appropriate, be introduced as disincentive to behavior that degrades the environment or to promote the phasing-out of polluting technologies.”

Article 12. Research and Training

In reaction to this article, the NBSAP stated on the need to:

- Increase national capacity to undertake biodiversity assessments and monitoring through education and training.
- Create awareness at scientific, policy and community level about the importance of biodiversity conservation and use through the national media, bulletins and incorporate in teaching materials.
- Identify trainees and suitable training courses and agencies (where possible, training should be conducted *in-situ*)
- Undertake a national Training Needs Assessment for biodiversity-related activities.
- Make assessment studies on how biodiversity resources, including local knowledge and practices, are better protected and sustainably used through the legal means.
- Develop a suitable mechanism for routine dissemination of biodiversity information at both technical and non-technical levels.

In compliance to this provision of the Convention, the draft Environmental Law stated in Article 30 (b) “..in cooperation with relevant institutions, propose to include and integrate environmental issues into the national educational system of the country, including higher education;” and Article 30 (c) “..coordinate with the pertinent line ministries:- (i) to create and promote opportunities for technical and on-the-job training in environmental protection and sustainable development; (ii) to conduct demonstrative pilot projects for improved environmental management; and (iii) to develop and promote scientific research in environmental protection and sustainable development matters and strengthen international scientific cooperation..”

2.4 Implementation of projects in response to the CBD

2.4.1 Introduction

In order to implement Articles 6, 8 and 10 of the CBD, Eritrea has prepared National reports to the Convention as well as in compliance with Article 6 of the Convention Eritrea has produced a draft National Biodiversity Strategy and Action Plan (NBSAP), which have been approved. The NBSAP has five strategic objectives namely:

- Develop and strengthen coordination measures and frame works for biodiversity management
- Facilitate research and information management and exchange on biodiversity
- Reduce and manage negative impacts on biodiversity
- Promote sustainable use and equitable sharing of costs and benefits of biodiversity
- Enhance awareness on biodiversity issues among various stakeholders

It should be noted that the DOE is a facilitator in implementing the NBSAP, while the other main stakeholders such as the MOA, MOF, MoEM, the Land and Water Resources Departments of the MoLWE, the MOH and others do the actual implementation.

2.4.2 Implemented and On-going Projects

a) Biodiversity Strategy and Action Plan and 1st National Report

The purpose of this project was to enable the Government of Eritrea to prepare national report and biodiversity strategy, in compliance with the above mentioned Articles 6,8 and 10 of the CBD and as a means of identifying priority actions for biodiversity conservation and management. This project produced a number of documents:

- The preparation of first national report to the Conference of the Parties of CBD (1997).
- A stocktaking and inventory of existing information with regard to Eritrea's biodiversity resources was finalized and a book entitled "Biodiversity Stocktaking Assessment Report" was published (1999).
- Assessment of National Policy, Legislative and Institutional Framework and its Implications for Biodiversity Conservation and Sustainable Use (2000) was carried out.
- Eritrea Biodiversity Economic Assessment (2000).
- The preparation of the National Biodiversity Strategy and Action Plan (NBSAP, 2000).

The project has been accomplished over an extended period from June 1997 until July 2000 and presents Eritrea's overall policy position with respect to its biodiversity, the sum total of ecosystem, species and genetic diversity that lies within Eritrean territory. The preparation of the NBSAP demonstrates Eritrea's readiness to implement the provisions of the Convention on Biological Diversity (CBD), under whose obligation the NBSAP is being prepared. It is believed that the strategy and action plan identified in the NBSAP, while addressing national needs and priorities, will at the same time contribute to global biodiversity conservation and sustainable use.

Constraints and Gaps limiting the implementation of the NBSAP

- There is lack of awareness about the NBSAP, because the document has not been disseminated widely as well as there was no follow up and mainstreaming of the project into relevant policies and strategic action plans of Ministries.
- The integration of the NBSAP components in sectoral policies and plans has not been undertaken.
- The project concept notes/proposals require much more consideration before they can be developed further. This would include consulting further relevant stakeholders.
- The focus of the projects (objectives) should relate to achieving national human development goals – in particular poverty alleviation and sustainable development.
- The convention is seen as means of providing inputs as to how relevant considerations can be incorporated into projects. None of the projects put the conventions explicitly within the objectives (see point 1 above). It is assumed that

the priority objective is sustainable human development – which the Convention should be used to support.

- Lack of periodic update of the NBSAP and Biodiversity Stocktaking Assessment.
- Lack of legal authority and weak institutional structures of relevant stakeholders involved in biodiversity conservation and management.
- Extremely poor capacity in bio-systematic to study the status and trend of biodiversity resources.

NBSAP: Lesson learned

- Biodiversity conservation and sustainable use are seen as ways in which the first objective can be achieved.

b) Assessment of Capacity Building Needs, for Biodiversity, Participation in Clearing house mechanism and Preparation of a Second National Report (Additional Funding of Biodiversity Enabling Activities)

In accordance to Article 6 of the CBD, Eritrea developed a National Biodiversity Strategy and Action Plan (NBSAP) aimed at the conservation and sustainable use of biological diversity, or to adopt existing strategies, plans or programs to reflect the requirement of the convention. As a result of the first enabling activity project, in 2000 the Government published the National Biodiversity Strategy and Action Plan for Eritrea (NBSAP). This sought to build upon the Government's previous commitment to broader conservation and sustainable use of biodiversity resources (Article 1 of the Convention).

This second Additional Funding for Biodiversity Enabling Activity Project, whose objective is to create an enabling environment for the Government of Eritrea to implement the NBSAP, draws from the recommendations set out in the NBSAP and focuses:

- To assess the country's capacity building needs for the conservation and sustainable use of biodiversity resources.
- To establish a clearinghouse mechanism for better management of biodiversity information.
- To organize national consultations for the preparation of a second national report to the COP/CBD.

The following capacity building priorities have been selected from within the NBSAP through consultations and discussions involving major stakeholders:

- Assess capacity needs, identify priorities and build consensus on the overall implementation of general measures for *in-situ* and *ex-situ* conservation of biodiversity.
- Make initial capacity building needs assessment in biodiversity monitoring programs, including taxonomy,
- Assess capacity needs, identify priorities and build consensus on the overall conservation and sustainable use of biodiversity resources important for agriculture,
- Assessment of methodologies to evaluate and mitigate specific threats to components of biodiversity.

- Assessment of capacity needs for the implementation of country driven project for participation in the CHM.

The consultative processes and discussions were coordinated by the Department of Environment in the Ministry of Land Water and Environment, which is the National Focal Point of the CBD. The CPT is drawn from the Ministries of Agriculture, Fisheries, Local Government and the College of Agriculture and Aquatic Sciences, and is coordinated by the Department of Environment.

Additional Funding of Biodiversity Enabling Activities: Constraints and Gaps

- Conservation of biodiversity can only be successful if the active participation of the stakeholders and local communities is ensured.
- Lack of awareness among the local people and the stakeholders
- Lack of participation of the local community in planning, establishment and management of biological resources.
- Lack of organizational set up and mandates of the institutions that are directly involved in biodiversity conservation.
- Lack of strong Leading Institution to oversee and coordinate biodiversity conservation activities.
- The biodiversity conservation implementing institution such as the Ministry of Agriculture, Ministry of Fisheries, Ministry of Land, Water and Environment etc. lack of lower strata of administration that could enable them to successfully carry out biodiversity conservation activities.
- Lack of adequate qualified personnel, facilities and financial resources to enable them undertake conservation activities.
- Lack of clear legislation and a legally mandated body for implementation of biological conservation.
- Lack of human resource e.g. forestry, weed science, taxonomy, zoology and marine biology at national level.

c) ERITREA COASTAL MARINE ISLANDS BIODIVERSITY PROJECT (ECMIB; GEF/UNDP - ERI/97/G31).

The Eritrea Coastal Marine Islands Biodiversity Project (ECMIB0, was started during 1997 and is jointly funded by the GEF and the UNDP.

Since Eritrea is signatory of CBD, and since ECMIB project is in line with the Jakarta mandate of the CBD (1995), Eritrea had to fulfill its obligations.

In order to understand the full implications of the Eritrean obligations the objectives of the Jakarta mandate are listed below:-

- Address the marine and coastal biodiversity loss and set out a checklist of action to be taken by the CBD signatory countries.
- Has five thematic areas
 - ❖ Integrated Management (IAM, ICZM, ICM)
 - ❖ Marine and Coastal Protected Areas (MPAs)
 - ❖ Sustainable Use of Coastal and Marine Resources

- ❖ Marine Culture
- ❖ Alien Species

Hence the overall objective of ECMIB is “to ensure the conservation and sustainable use of the globally significant biodiversity of Eritrea’s coastal, marine and island (CMI) ecosystems”, while the specific objectives of ECMIB is as follows:-

- The project is designed to ensure the sustainability of:
 - The exploitation of coastal and marine resources
 - The marine and coastal development
 - The conservation of the marine resources
- The project focuses on the following elements
 - Integrated Coastal Management
 - Protected Areas
 - Research and monitoring
 - Education and Public Awareness

The following activities were accomplished by the ECMIB project: -

- Key stakeholders were involved
- There is enough financial resource funding to undertake the project (+3M USD),
- National staff were recruited during early 2004 and the professional gap was filled by recruiting four UN Volunteers,
- Twenty National graduates were trained and attached to the project,
- Options for in-house and overseas training was assured
- Facilities and equipment were provided, and more are anticipated to come.

Constraints limiting the implementation of the ECMIB

The ECMIB had faced serious constraints to undertake the project mainly because of the following reasons:-

- There is lack of awareness about the ECMIB, because the document has not been disseminated widely as well as there was no follow up and mainstreaming of the project into relevant policies and strategic action plans of key stakeholders.
- Environmental projects are multi-sectoral and hence the project was complex,
- At the beginning of the project there was low national capacity and lack of managerial experience,
- Lack of technical expertise and leadership,
- The Ethio-Eritrean war, exacerbated the problem, which caused lack of experts due to mobilisation,
- Delay of project due to waiting time for national experts to return from higher education,
- Difficulty for staff recruitment, because of high staff turnover
- The integration of the ECMIB components in sectoral policies and plans has not been undertaken.

ECMIB: Lessons Learned

A major re-assessment of the project and the lessons learned was carried. New strategies and action plans were instituted. Brief outline of the lessons learned are presented below:-

- Environmental projects are multi-sectoral, they need strong coordination, strong participation and a clear mandate,
- External expertise cannot substitute national input for preparation, implementation and long term sustainability of such a project,
- Preparing the project implementation (governing rules and regulations) and building the national capacity is a prerequisite (phase I),
- Implementing the project can then proceed (phase II),
- Sustainability of the project strategy need to have been considered from the onset of the project.

ECMIB: long term needs

In order for the ECMIB to succeed the following long term input need to be addressed:-

- Strong commitment of the Government, the public and the private sector in terms of coordination and participation,
- Adequate facilities to ensure the implementation and sustainability of the integrated coastal management and marine protected areas.

d). Afforestation and Natural Resources Management Programme, Ministry of Agriculture

In order to reduce deforestation and environmental degradation the Ministry of Agriculture (MoA) has taken the following measures:-

- As the National Focal Point for UNCCD the MoA in collaboration with all concerned governmental and non-governmental organizations and assisted by the local communities, is undertaking an accelerated and sustainable afforestation programs. One element of the program is to encourage communities to establish woodlots on community lands. Residents actively participate in designing and managing the community woodlots, and the Ministry of Agriculture provides seedlings and overall guidance.
- Assessment and Management of Riverine Forests in Western Lowlands of Eritrea.
- Closures have been established in order to help protect trees from been cut as well as help the regeneration of trees in areas, which have faced serious land degradation.

2.5 SWOT Analysis On CBD

Individual level

- **Strength:** there are many graduates of biology, marine biology, plant and animal science.
- **Weaknesses:** low salary of employee's at government institutions is a bottleneck, low level on job training activities, lack of performance evaluation and lack of conducive working environment.
- **Opportunities:** the capacity of the existing graduates of biology, marine biology, plant science and animal science can easily be upgraded into different areas of specialization that can fill the gaps of experts in biodiversity conservation.
- **Threats:** Brain drain

Institutional level

Strength: Individuals/departments who are working in biodiversity related areas are more knowledgeable and can contribute if they are involved. The Department of Forestry and Wildlife of the Ministry of Agriculture and Biology Department of the University of Asmara can be mentioned as examples etc.

Weaknesses:

- Expert view is weakly considered
- The institutions mandate and responsibility are not clearly demarcated.
- Zoba representation of the institutions is not fully carried out.
- Lack of facilities and finance for research and monitoring activities

Opportunities: there is an opportunity for strengthening the available institutions,

Threats: lack of clearly defined responsibility and mandate among the institutions can affect the coordination between institutions. Some people have the attitude of economic development must be assured first and then restoration can take place. This will negatively affect the conservation and sustainable use of biodiversity.

Systemic level

Strength: Institutions that are responsible for CBD are developed at ministry level like Ministry of Fisheries, Ministry of Agriculture and Ministry of Land and Water and Environment.

Weaknesses: there is no clear mandate and responsibility among institutions as a result there is duplication and overlap of activities. Lack of approved laws and regulations that are directly linked with CBD like environmental law, water law, forestry and wildlife law and maritime code have not being approved. There is weak coordination and information exchange among the stakeholders.

Opportunities: there is great concern and awareness globally on biodiversity and there are financial mechanisms to implement the national programmes to conserve biodiversity that Eritrea could exploit it. eg. ECMIB

Threats: if laws aren't approved and enforced people can threaten the implementation of biodiversity conservation.

2.6 Priority Issues in CBD

Based on the survey carried out the priority issues for CBD in Eritrea can be summarized as follows:

1. Institutional capacity building of the focal point and the stakeholders that include:-
 - Legislative and regulatory framework
 - Administrative framework
 - Funding and resource management
 - Mechanisms for follow up monitoring and assessment
2. Human resources development and training
3. Implementation of the National Biodiversity Strategy and Action Plan.
4. Awareness participation and education at all levels including for decision makers stakeholders and general public
5. Integration of the CBD into development policy plans and programmes of the country.

2.7 Concluding Remarks

There is no doubt that the DOE is committed to implement the NBSAP through its various divisions and branches and its strategic partners and the stakeholders. However, the ability of the Department to effectively implement these activities must be questioned, because it lacks adequate financial and human resources.

There is no doubt that the DOE must develop a mechanism to implement the NBSAP by seeking partners that will assist in the implementation of the NBSAP. Eritrea should aggressively seek funding and launch in-house and external training of its human resources to implement the Action Plan. This would suggest the need for a coordinating mechanism with a focus on the NBSAP, working with the various Governmental institutions, partner agencies and non-governmental organizations.

III. THE CARTAGENA PROTOCOL ON BIOSAFETY

3.1 Overview of the Development of the National Biosafety Framework for Eritrea.

The Cartagena Protocol on Biosafety is the first International agreement that addresses the adverse effects of modern biotechnology on the conservation and sustainable use of biological diversity, particularly the adverse effects of trans-boundary movement of living modified organisms (LMOs).

The objective of the Protocol is:” to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of LMO’s resulting from modern Biotechnology that may have adverse effects on the conservation and sustainable use of Biodiversity, taking into account risks to human health, and specifically focusing on transboundary movements.”

The protocol provides an international regulatory framework to reconcile the contradictions between trade and environmental protection in view of the growing biotechnology industry. In effect the protocol intends to create an enabling environment for the safe application of biotechnology.

After several years of negotiations, the protocol, known as the Cartagena Protocol on Biosafety to the Convention on Biological Diversity was finalized and adopted in Montreal, Canada on 29 January 2000 and entered into force on 11 September 2003, 90 days after receipt of its 50th instrument of ratification. Eritrea became a party to the Protocol on 10th of March 2005 by accession.

Hence a country party to the protocol needs to comply with the provisions of the protocol after the entry into force of the protocol to that state party.

Eritrea, being one of the poorest countries in the world, cannot be an exception to this. Eritrea is importing a lot of food aid, processed foods and even LMOs in the form of small plantlets, animals, etc. Nobody in the country knows what these GM foods can cause to human health, nor can any one predict how the imported LMOs could affect the biological diversity of the country. Hence the status of biotechnology in the country is unknown as there is no mechanism in place to regulate it.

Obligations of the Cartagena Protocol on Biosafety are shown in Table 1.

3.2 Implementation of a National Biosafety Framework

Although the implementation of the **National Biosafety Framework** has only started recently, however, the country has conducted a number of activities, which will assist it in its implementation process. These include:

- Designation of a National Focal Point on Biosafety;
- Establishment of a National Biosafety Committee;
- Development of National Biosafety Frameworks.
- Designation of a National Focal Point for the Biosafety Clearing House (BCH).

National Biosafety Focal Point

At present, the Department of Environment of the Ministry of Land, Water and Environment is the National Executing Agency for the project and the Project is housed in the DOE office.

Development of National Biosafety Frameworks.

In order to comply with the Protocol Eritrea launched the national Biosafety Framework by the beginning of the year 2005. The project known as the Development of National Biosafety Frameworks for Eritrea is the only project so far in Eritrea to implement the Cartagena Protocol on Biosafety.

The main objective of this National Project is the preparation of a National Biosafety Framework in accordance with the relevant provisions of the Cartagena Protocol on Biosafety.

The components of this NBF are government policy on Biosafety, a regulatory regime for Biosafety, an Administrative and Decision making mechanisms, systems for 'follow up' such as enforcement and monitoring for environmental effects and mechanisms for public awareness, education and participation.

In the course of implementation of the project the DOE is engaged in a series of consultations with the major stakeholders. The stakeholders for this project are the Government Ministries, which have relevance to the Cartagena Protocol on Biosafety.

The components of NBF are closely linked with the Cartagena Protocol on Biosafety (CPB) and will be prepared as follows:--

- ***Biosafety policy***

A policy on Biosafety could either be a stand-alone policy, or it could be part of a more general policy or policies on biodiversity conservation, biotechnology, science and technology, food production, food safety, environment protection or even sustainable development.

The Eritrean NBF will assess for explicit policy in the country that addresses Biosafety issues. If it is found out that we lack that policy it will be drafted as part of the Project. Hence the DOE will have a policy that governs the development, research, and transboundary movement of LMOs. A policy for Biosafety is one of the major requirements of the CPB.

- ***Regulatory regime***

A regulatory regime for Biosafety, which often is a combination of an Act or Decree, complemented with implementing technical regulations and guidelines will be proposed.

The regulatory regime, if any, will be reviewed for their fullness to address Biosafety. If there is a gap the project will draft the Regulatory regime. This is very important to comply with the CPB as it addresses the roles of institutions in accepting requests, Competent National Authorities, etc.

- ***System to handle notifications or requests for authorizations***

System to handle notifications or requests for authorization of activities, such as release of LMOs into the environment will be set. So far there is no system in place to manage Biotechnology and it is not known how Biotechnology is imported to Eritrea. The project will set a system, which is a key pre-requisite of the CPB.

- ***Monitoring and enforcement.***

Systems for 'follow up' for Biosafety, such as enforcement and monitoring for environmental effects will be set. As part of the project the issue of addressing the actual impact on the environment and human health, focus will be made on compliance with the regulatory regime.

- ***Mechanism for promoting and facilitating public awareness, education and participation.***

Mechanisms for promoting and facilitating public awareness, education and participation will be proposed. This will help to comply with the protocol as public awareness and participation is a major component of the protocol.

The following are the major steps that will be followed during the implementation of the project:-

1. Surveys and Preparation of Inventories

This phase will give information on the status of Biotechnology, research, development, transboundary movement and regulatory regimes available. Besides it will give information on the existence of active or planned National Projects for capacity building related to the safe use of biotechnology and capacity available to regulate the technology.

2. Consultations, Analysis and Training

This phase is also expected to:-

- Access to relevant information for all stakeholders in accordance with the requirements of the Cartagena Protocol on Biosafety.
- Development of National Biosafety Database and linkages to the Biosafety Clearing House.
- Mechanisms for adequate involvement of all stakeholders, including public and private sectors, on issues related to Biosafety.
- Identification of the components of the national Biosafety Framework, in consultation with all relevant stakeholders.

3. Drafting of NBF

At this stage the Draft National Biosafety Frameworks for Eritrea will be prepared.

4. Output of the NBF project

The following are the major outputs of the NBF project:-

- Draft of legal instruments, including guidelines, as appropriate.
- Systems for risk assessment and management, including audit, which takes into account national and sub-regional/regional needs.
- Administrative system for compliance with the Cartagena Protocol on Biosafety.
- Mechanisms for public consultation in decision-making processes regarding LMOs.
- Establish mechanism for sharing of scientific assessments at sub-regional levels, whilst allowing for decision-making at the national level.
- Identification of country needs and mechanisms for participation in the Biosafety Clearing House.
- Publication of inventories, reports of national meetings, draft and/or final National Biosafety Framework, relevant regulations and guidelines.

3.3 Concluding Remarks

The National Biosafety Framework is the first project after the accession of Eritrea to the protocol, but many other projects will come into existence and alleviate the problem of Biotechnology. In the meantime the NBF project will at least solve the basic problems in order to comply with the CPB.

After successful completion of the project a huge gap will be filled in the field of management of biotechnology in the country. However the capacity constraints need to be addressed fully in order to fulfil the requirements of the Protocol, which could be done by accessing GEF funds meant for that purpose.

**TABLE 1. OBLIGATIONS OF THE CARTAGENA PROTOCOL ON BIOSAFETY TO THE
CONVENTION ON BIOLOGICAL DIVERSITY AND THE ACTIONS UNDERTAKEN**

The following table summarizes the provisions of the Cartagena Protocol that need to be fulfilled by Eritrea and current Eritrea's activities to comply with these provisions.

Obligations of the protocol	Required action by state party	Action taken by Eritrea	Constraints
Designating competent national authorities and national focal point	<ul style="list-style-type: none"> • Designate and communicate to the Secretariat, no later than the date of entry into force of the Protocol, the name and addresses of one national focal point and one or more competent national authorities; • In case more than one competent national authority has been designated, notify the Secretariat about their respective responsibilities. 	<ul style="list-style-type: none"> • The Department of Environment of the Ministry of Land, Water and Environment is the National focal point for the Cartagena Protocol on Biosafety. The Director General of the Department of Environment is the National focal person for the Protocol as well as the Biosafety Clearing House Focal point. • So far the Competent National Authority for Eritrea has not yet being designated. 	<ul style="list-style-type: none"> • The office that works for complying to the protocol is not officially formed even though Biodiversity/Biosafety office is doing some work. The secretariat for the CPB has not yet being established. • The NBF project is expected to propose the Competent National Authorities for Biosafety issues in Eritrea but the project is in its first phase of implementation.
Identifying a point of contact for notifications on	<ul style="list-style-type: none"> • Make available to the Biosafety Clearing-House (BCH), no later than the date of entry into force of 	<ul style="list-style-type: none"> • So far the Emergency measures contact point has not yet being designated. 	<ul style="list-style-type: none"> • The structure has not being set for this purpose by DOE, since Biotechnology is new for Eritrea.

unintentional transboundary movements and emergency measures	the Protocol, details of a point of contact for the purpose of receiving notifications concerning any occurrence that leads or may lead to unintentional transboundary movement of a LMO.		<ul style="list-style-type: none"> Although the MOA has the mandate to monitor trans-boundary movement of LMO's, so far there has not been quarantine stations in ports as well as major border outposts with adjoining countries.
Making available information to the Biosafety Clearing-House (BCH)	<ul style="list-style-type: none"> Put in place the necessary infrastructure and personnel at domestic level for the purpose of collecting, classifying, making available, use, access and disseminate relevant information to and from the BCH; Ensure, through the Biosafety Protocol national focal point or a BCH focal point, as appropriate, that information flow to and from the BCH is done in a timely manner. 	<ul style="list-style-type: none"> DOE is in the process of setting the infrastructure for that purpose. There is also capacity constraint to fill this gap soon. Negotiation is underway to participate in the BCH project aimed at developing access to and use of the Biosafety Clearing-House (BCH), thereby enabling the DOE to fulfill its obligations towards the Cartagena Protocol by entering the required information in the BCH in a timely fashion, it will also enable the DOE to use and benefit from the BCH. Hard copies of updates from the BCH are received by the Department of Environment. Besides there is limited on going communication with the BCH through the Biosafety Project office. 	<ul style="list-style-type: none"> The DOE structure is not set for this purpose. Besides the capacity in the Department is limited to be able to do this activity. The capacity at the DOE level is inadequate to perform this task but with the launch of BCH project it will be alleviated. Accessing is not in a timely fashion and well coordinated as there is no specific person/office earmarked for it.
Implementing the advance informed	<ul style="list-style-type: none"> Establish or maintain a procedure for the notification of exports, on 	<ul style="list-style-type: none"> The DOE is in the process of setting the infrastructure for that purpose. 	<ul style="list-style-type: none"> Eritrea became part to the Protocol by March 2005 and

agreement procedure.	<p>the one hand, and for taking decision on imports on the other, of living modified organisms destined for intentional introduction into the environment of the Party of import;</p> <ul style="list-style-type: none"> • Ensure that any domestic regulatory framework used in place of the decision procedure of the Protocol's AIA is consistent with the Protocol; • Where adequate capacity to handle the transboundary movement of a LMO exists, a Party of import may wish to specify in advance to the BCH cases where transboundary movement could take place simultaneously with the notification, and imports exempted from the AIA procedure. 	<p>Currently the National Biosafety Framework project is under implementation and will establish the Administrative and Decision-making mechanism.</p> <ul style="list-style-type: none"> • The National Biosafety Framework project is under implementation and will establish a regulatory regime, which could be in the form of law, decree or Biosafety act and will be in harmony with the AIA of the protocol. • So far no adequate capacity exists to handle the issue of LMOs. 	<p>some time is required to implement the AIA, and this will be after the NBF has been successfully completed.</p> <ul style="list-style-type: none"> • There is limited capacity to handle transboundary movement of LMOs, since there is limited capacity to handle issues of LMOs but with the finalization of NBF there will be an Administrative and Decision making body to implement the AIA.
Communicating decisions regarding LMOs intended for direct use as food or feed, or for processing (LMOs-FFP)	<ul style="list-style-type: none"> • Make sure to inform other Parties through the BCH of any final decision regarding domestic use, including placing on the market of a LMO that may be subject to transboundary movement for direct use as food or feed, or for 	<ul style="list-style-type: none"> • The DOE is in the process of setting the infrastructure for that purpose. 	<ul style="list-style-type: none"> • Even though there is access by Biosafety/Biodiversity office to BCH it has not reached to the level of informing other parties because we don't have the established system to handle the requests. Currently we are simply

	<p>processing within fifteen days of making that decision;</p> <ul style="list-style-type: none"> • Make available to the BCH copies of any national laws, regulations and guidelines applicable to the import of LMOs-FFP; • For a developing country Party or Party with an economy in transition without a domestic regulatory framework, declare, through the BCH, that decisions with regard to the first import of LMOs-FFP will be taken within a predictable timeframe, not exceeding 270 days, in accordance with a risk assessment undertaken in accordance with Annex III of the Protocol. 	<ul style="list-style-type: none"> • So far there are no national laws, regulations and guidelines applicable to the import of LMOs-FFP but once the laws are drafted it will be communicated to the BCH. • Even though the DOE does not have regulatory frameworks, it has not yet declared to BCH that decisions will be taken in accordance of the Protocol. It is expected Eritrea will produce its own Regulatory regime. 	<p>accessing to the available information in the BCH.</p> <ul style="list-style-type: none"> • Lack of National laws, regulations and guidelines.
Carrying out risk assessments for decision taking	<ul style="list-style-type: none"> • Ensure that risk assessments are carried out in a scientifically sound manner and taking into account recognized risk assessment techniques; • Ensure that risk assessments are undertaken for decisions taken under the AIA procedure of the Protocol as regards the import of LMOs for intentional introduction into the environment. 	<ul style="list-style-type: none"> • So far the system is not established for risk assessment. But once the system is set the applicable techniques of risk assessment will be employed. • So far the system has not yet being established for risk assessment. 	<ul style="list-style-type: none"> • Capacity constraint to establish the system i.e. the Institutional and individual capacity constraint. • Capacity constraint even to undertake risk assessment.

Undertaking risk management measures	<ul style="list-style-type: none"> • Ensure that appropriate mechanisms, measures, and strategies to regulate, manage and control risks associated with the use, handling and transboundary movement of LMOs as identified in the risk assessment, are established and maintained 	<ul style="list-style-type: none"> • Even though the DOE agree with this article so far it has not established the appropriate mechanisms. 	<ul style="list-style-type: none"> • Lack of capacity and hence there was delay to establish the system. After the system is established training of experts who will be working about the issue is mandatory. • Capacity constraint to undertake Risk • Management.
Identification of LMOs in accompanying documentation	<ul style="list-style-type: none"> • Take measures to require the appropriate persons to clearly identify transboundary movements of LMOs-FFP in accompanying documentation, that they “may contain” LMOs and are not intended for intentional introduction into the environment and also to specify a contact point; • Take measures to require the appropriate persons to clearly identify, in accompanying documentation, transboundary movements of LMOs for contained use as living modified organisms, and to specify any safety requirements, contact point for further information, including 	<ul style="list-style-type: none"> • Even though the DOE agrees with this article so far we have not established the appropriate mechanisms. After the establishment of the system, the concerned person will be made aware of this article by the concerned institution. 	<ul style="list-style-type: none"> • Lack of Biosafety policy, Biosafety regulation/Bill that seeks appropriate information from the applicant. • Lack of Monitoring and enforcing procedures. • Lack of an established Administrative and decision-making process.

	<p>the name and address of the person to whom the LMOs are consigned; and</p> <ul style="list-style-type: none"> • Take measures to require the appropriate persons to clearly identify, in accompanying documentation, LMOs for intentional introduction into the environment and any other LMOs within the scope of the Protocol, as living modified organisms; to specify the identity and relevant trait and/or characteristics; to specify any safety requirements, contact point for further information, the name and address of the importer and exporter, as appropriate; and to declare that the movement is in conformity with the requirements of the Protocol. 		
Protecting confidential information	<ul style="list-style-type: none"> • Establish or maintain procedures to protect information submitted under the procedures of the Protocol or required by the Party of import as part of the advance informed agreement procedure of the Protocol that is to be treated as confidential information. 	<ul style="list-style-type: none"> • So far no procedures have being established to implement the procedure. 	<ul style="list-style-type: none"> • No system has being established since this forms part of the Administrative and Decision making process, which is expected to be established after the completion of the NBF project.

Promoting public awareness and participation	<ul style="list-style-type: none"> • Take appropriate measures that would allow or demand all relevant bodies to inform the public as regards the safe transfer, handling and use of living modified organisms that are of interest to the Protocol, including a means of public access to the Biosafety Clearing-House. 	<ul style="list-style-type: none"> • As part of the NBF project it is planned to produce Public awareness materials but so far no measures have been taken. After the establishment of the DOE's website it will be also used to increase public awareness. 	<ul style="list-style-type: none"> • Lack of public awareness manuals and lack of trained persons.
How transboundary movements of LMOs between Parties and non-Parties must be conducted	<ul style="list-style-type: none"> • Ensure that any transboundary movement of LMOs with non-Party, taking place either under domestic regulatory framework or bilateral, regional and multilateral agreements and arrangements, is consistent with the objective of the Protocol. 	<ul style="list-style-type: none"> • So far the transboundary movement has been done in a non-systematic way. 	<ul style="list-style-type: none"> • Status of transboundary movement of LMO is not known in Eritrea. • No system exists to monitor the transboundary movement of LMOs.
Assessment of capacity building needs	<ul style="list-style-type: none"> • Assess and communicate through the BCH broader capacity-building needs. 	<ul style="list-style-type: none"> • Capacity needs are not assessed but with the input from the NCSA process the capacity needs will be assessed. 	<ul style="list-style-type: none"> • No activity has being initiated to assess the capacity building needs
Developing or maintaining capacity to use the BCH	<ul style="list-style-type: none"> • Put in place some level of capacity at the national level that would allow access to and use of the BCH. 	<ul style="list-style-type: none"> • At present the staff of DOE are accessing the BCH but in the near future the DOE will have its own website that could help in communicating with the BCH. 	<ul style="list-style-type: none"> • Limited capacity at the national level to perform this task.

III. UN FRAMEWORK CONVENTION ON CLIMATE CHANGE.

3.1 Background

The UN Framework Convention on Climate Change (UNFCCC) is one of the three “Rio Conventions” which was opened for signature on June 5, 1992 at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil. The Convention entered into force in December 1993 and Eritrea acceded to the UNFCCC on April 24, 1996.

Eritrea has also ratified the Kyoto protocol to the UN Framework Convention on Climate Change.

Purpose of the Study

The objective of the National Capacity Self-Assessment is to review Eritrea’s implementation of the UNFCCC in Eritrea with a view to identifying priority areas for action to facilitate better implementation.

The Main objectives of the thematic profile are to:-

- To identify, confirm and review priority issues;
- Capacity constraints for these issues at various levels (systemic, institutional and individual); and
- Opportunities for capacity building to address the identified constraints.

This includes familiarization of the UNFCCC guidelines/decisions, evaluation of the previous projects and identification of on-going projects and measures currently being carried out by governmental and non-governmental institutions, if any, to implement the convention.

This is a good opportunity to assess the experience gained, lessons learned, gaps and constraints in the process of implementing this Convention and as an input to the on-going National Capacity Self-Assessment (NCSA) project in the country.

3.2 Obligations of Eritrea under UNFCCC

3.2.1 Introduction

The Government of Eritrea acceded to the UNFCCC on April 24, 1996. By becoming party to the convention, Eritrea accepted a number of commitments, such as Article 4 and Article 12, which have been summarized below:

Article 4, paragraph 1, and Article 12, paragraph 1, of the UNFCCC, provide for each Party to report to the Conference of the Parties (COP) information on its emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol (greenhouse gases inventories); national or, where appropriate, regional programmes containing measures to mitigate, and to facilitate adequate adaptation to climate change (general description of steps taken or envisaged by the Party to implement the

Convention); and any other information that the party considers relevant to the achievement of the objective of the Convention (Box 4, 5 and 6).

BOX 4

Under the UNFCCC Article 4 Paragraph 1, Eritrea has the commitment to conduct National inventory on GHGs and mitigate the effects of Climate change:

- (a) *“Develop, periodically update, publish and make available to the conference of the parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all Greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the conference of the parties”;*
- (b) *“Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;”*

BOX 5

Under Article 12 Paragraph 1, Eritrea should communicate information related to the implementation of the UNFCCC, which is known as the national communication:

“...each Party shall communicate to the Conference of the Parties, through the secretariat, the following elements of information:

- (a) *A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;*
- (b) *A general description of steps taken or envisaged by the Party to implement the Convention; and*
- (c) *Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.”*

BOX 6

Under Article 4 Paragraph 1 (e) and (f) of the provisions of the Convention, Eritrea is obliged to assess the vulnerability of the different socio-economic sectors to climate changes impacts and develop adaptation plan of actions.

(e) “Cooperate for preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and adaptation of areas affected by droughts and desertification, as well as floods;

(f) Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and the quality of the environment, of projects and measures undertaken by them to mitigate or adapt to climate change.”

It should be noted that Articles 4 (e) and 4 (f) are very relevant to Eritrea considering Eritrea’s major resource base in the coastal areas, the water shortages in Eritrea and vulnerability of the agricultural sector due to drought and land degradation and its impact to the economy and health of the people.

Detailed summary of the Articles and Obligations on the Convention of Climate Change are presented in Annex 1.

3.3 Status of UNFCCC Implementation in Eritrea

3.3.1 Introduction

In order to achieve the objective of the UNFCCC, Eritrea communicated information on its implementation efforts, as well as the constraints, problems and gaps, to the COP through its Initial National Communication (INC) in 2001 in complying with its obligations.

This national communication included information on the components of national communications in line with the old guidelines of COP, which is decision 10/CP.2.

A brief analysis of the previous work under each component of the INC, is presented below, which includes the evaluation of the previous work in terms of capacity needs, constraints, gaps and uncertainty based on decision 17//CP.8 guidelines as discussed in the previous section.

3.3.2 Initial National Communication (INC) Project

3.3.2.1 Inventory of Sources and Sinks of GHGs in Eritrea

The GHG inventory in the INC was conducted (Paragraph 6) strictly based on the IPCC revised 1996 guidelines for National GHG Inventories (Paragraph 8). Sectors Studied include Energy, Transport, Agriculture, Forestry and Land use, Commerce and Household and Solid waste.

The Ministry of Land, Water and Environment, Ministry of Energy and Mines, Ministry of Agriculture, Ministry of Industry and Trade and Ministry of Transport and Communication were involved in the data collection for GHG inventory (Paragraph 13).

Accordingly, an inventory of GHG emissions by sources and removals by sinks has been carried out for the base year 1994 (Paragraph 7). The main sources of GHG in the country are land use and forestry, energy and transport sectors. The major GHGs covered in this study are Carbon dioxide (CO₂), Methane (CH₄) and Nitrous oxide (N₂O) (Paragraph 14). Other GHGs, included are Carbon monoxide (CO), Nitrogen Oxides (NO_x), Non-Methane Volatile Compounds (NMVOCs) and Sulphur dioxide (SO₂) (Paragraph 16). The amount of CO₂ emissions amounted to 3083.5 Gg (NIC, 1994) and that the major contributors to GHG are LUCF and energy use from combustion of fuel. Hence Eritrea's contribution to global GHG concentrations is small and negligible as compared to other developed Parties and consequently there is a need for adaptation rather than mitigation measures in Eritrea.

3.3.2.2 Mitigation Policies and Measures

The first part of the INC study was identifying relatively high-level GHG emitting sectors in Eritrea and analysis of the existing social, economic and environmental circumstances in relation to these sectors. Relatively high-level GHG emissions were identified mainly from Land Use Change and Forestry (LUCF), and Energy and Transport sectors. Accordingly, mitigation policies, aimed at enhancing the adaptive capacity, were formulated for these sectors. The main mitigation measures that were mentioned in the INC report are the following:-

a). Mitigation options for the Forestry Sector

- Afforestation
- Expansion of closure systems
- Soil and water conservation.

b). Mitigation options in the Energy Sector

- Increasing energy efficiency
- Increasing efficiency of traditional stoves
- Introduce renewable energy sources (wind, solar).

c). Mitigation options in the Transport Sector

- Introduce efficient public transport

- Promulgation of regulatory frames.

Capacity building needs

There are capacity building needs in the following areas:

- Formulation of new energy laws, regulations and standards,
- Research and training on renewable energy resources and technologies, installation, repair and maintenance of Renewable Energy Technologies (RETs), training of RETs technicians and demonstration of the technology to the public; improvement of stoves, etc,
- Urban planning and distance shortening,
- Introduction and institutionalization of vehicle importation regulations based on the impact on environment and human health,
- Introduction of higher capacity and efficient public transport sector,
- Upgrade the level of understanding of policy makers in the transport sector so that research will be done continuously and measures that promote shift to environmentally friendly transportation be facilitated.

3.3.2.3 Climate change impact and vulnerability assessments

Eritrea is among the most vulnerable group of countries in the world, be it in the agricultural sector, the coastal areas, forestry sector, water resources, fisheries, rangeland, livestock, wildlife, infrastructure, human settlements, etc, because of its low adaptive capacity and also due to its fragile geo-ecological environment. Nonetheless, on a priority basis five sectors have been chosen for impact and vulnerability assessment. These are the Agricultural, Water Resources, Forestry, Coastal environment and Human health sectors. They have been prioritised due to the fact that a) agriculture is the mainstay of the majority of the Eritrean people, who depend on the limited water resources and the potential resources of the coastal areas, which could help in achieving food security.

In order to carry out these assessments, national scenario for the possible range of climate change was developed as a first step; then the vulnerability of these priority sectors to climate change assessed; and finally measures to adapt to climate change identified in the respective sectors. Please refer to the Initial National Communication (INC) of Eritrea for the full report.

3.3.2.3.1 Assessment of Vulnerability to Climate Change in Agriculture

Initially, scenario for the possible range of climate change was developed; then the vulnerability of agriculture to climate change assessed; and finally measures to adapt to climate change have being identified.

The results indicate that climate change may affect barley and sorghum production and the natural resources on which they depend differently.

Limitations of the study

Although the overview presented to describe the agricultural sector is not to the level required two widely growing crops such as sorghum and barley which grow in three selected sites where assessed in order to determine the potential sensitivity and vulnerability of agriculture to adverse climatic change and the results are provided in the INC report. Besides, adaptation options to mitigate the adverse effect of climate change to the aforementioned crops are stated. The limited availability of data is due to the increased frequency of drought events over the last decade or so, late arrival of rains, etc, and some explanations and analysis should be made to show how the Eritrean agriculture is being affected by these phenomenon. Hence further study has to be carried out to describe the general vulnerability issues or cumulative effects in the agricultural sector. The indirect and combined effects of climate change and socio-economic changes, as well as integrated effects, should be included (Paragraph 34).

3.3.2.3.2 Assessment of Vulnerability to Climate Change in Water Resources

Initially, scenario for the possible range of climate change was developed; then the vulnerability of water resources to climate change assessed; and finally measures to adapt to climate change identified.

Vulnerability assessment under global warming simulated by GCMs under doubling of CO₂ shows that the Mereb-Gash basin is susceptible to climate change. The simulated runoff decreased by 29.5 % without taking into account the effects on runoff due to different water demanding activities such as irrigation, urbanization etc. This decrease in runoff will adversely affect the different economic sectors in the study area. The Mereb-Gash basin is the most potential area for irrigation; hence climate change effect will have a significant influence on the agricultural activities of the country.

Limitations of the study

The data required are both hydro meteorological, meteorological and socio-economic data. In general, there are only few limited available data in Eritrea and putting limitations for the selected period.

The overview presented does not provide information about the vulnerability of the water resources sector to current climate variability (Paragraph 29). Apart from specific vulnerability assessment study in the water sector, we hardly find information that describes in general terms about the vulnerability of this sector. So, further study, including groundwater resources, has to be carried out to describe our general vulnerability issues.

3.3.2.3.3 Assessment of vulnerability of Climate Change in Forestry Sector

Initially, scenario for the possible range of climate change was developed; then the vulnerability of Forestry sector to climate change assessed; and finally measures to adapt to climate change identified.

The results indicate that across Eritrea the tropical thorn woodland and the tropical very dry forest will increase by 8 to 18%. A large portion of the subtropical thorn woodland is projected to shift to subtropical dry forest under the combined scenario. The projected shift in forest distribution is attributable to either a future increase or decrease in precipitation and an increase in ambient temperature. Adaptation strategies based on these results are discussed

Climate change, together with diseases and predation of seeds, will cause changes in species composition and structure in the study area, as some species will fail to establish themselves.

Limitation of the study

Eritrea contains significant portions of Riverine forest and mangroves, which are not defined by the Holdridge life zone classification model, some of these discrepancies between modelled and observed vegetation distribution should be resolved in the future by modifying the existing model or identifying new models to suit the Eritrean environment and by incorporating natural classification schemes.

3.3.2.3.4 Assessment of vulnerability to Climate Change in Coastal Resources

Since there is no baseline sea level and tidal data for the baseline period (1935-1964), nonetheless, current climate and socio-economic data is used in the analysis. The data used are salinity, precipitation, evaporation, nutrients, wind currents, sea surface temperature, humidity, biological resources and economic valuation of infrastructure.

The study has indicated that the main Port and Tewalet are vulnerable to a 1m sea level rise. Edaga and Gerar are vulnerable to sea level rise of 0.5 m. Taking the scenario of 0.5m on the average Edaga, Gerar and Green Island are more vulnerable than Tewalet and the Port (old city). Some 23 islands are also identified to be vulnerable by 1m and 4m sea level rise. In general, the Eritrean coastline is vulnerable to sea level rise between 0.3 m and 1m sea level rise.

Climate change will have critical impact on marine animals and plants. These include coral reefs, fish, seaweeds, sea grass and mangroves. Some small scale monitoring around Massawa and Dahlak during the months of July and August of 1999 indicated that high temperature is responsible for the bleaching of corals. Sea level rise will have an impact on settlement of the people on the coastline mainly due to its effect on fresh water availability and salt intrusion to fresh water resources. The increase in temperature according to UK89 model is on the average 4.1⁰C. Such an increase for the coastline of Eritrea is very high. Plants and animals will be affected by this temperature increase. Thus, ecologically there will be an adverse impact.

Limitation of the study

There is chronic data limitation for the Coastline of Eritrea. These data include aerial photo, hydrographic, topographic map, GIS maps, satellite imagery, and socio-economic data and baseline climate for the baseline period 1935-1964. There are also no socio-economic and environmental scenarios for the Eritrean coastline. The unavailability of these factors may entail uncertainties in the results of this

assessment. There is the need to improve these uncertainties in the subsequent national communications by filling all these gaps.

3.3.2.3.5 Assessment of vulnerability to Climate Change in the Health Sector

Baseline climate and socio-economic (including health) data, however due to data limitation for the baseline period 1935 – 1964, only climatic data for five-year period (1995-1999) was used.

13 study sites were identified in the lowland areas to study the impact of CC on the distribution of climate related diseases such as malaria, diarrhoea, acute respiratory infections (ARI), tuberculosis, eye infection, skin infection, etc.

GCM scenarios predict that there will most likely be an increase in the incidence of climate related diseases such as malaria, diarrhoea, ARI and malnutrition. The scenario events indicate that there will be more malaria cases due to CC. Especially temperature change will have serious effects on increasing malarious sites and malaria cases. It should be noted that the appearance of malaria at altitudes close to 2,000 metres is a new phenomenon.

Limitation of the study

Because of several problems related to unavailability of up to date data, complete and fairly accurate data and absence of developed models for climate related health risks, this assessment is far from complete. There is the need to improve this assessment in the subsequent national communications by filling all these gaps.

3.3.2.4 Climate Change Adaptation Measures

Eritrea needs adaptation strategy in all sectors affected by climate change, but these have being prioritized and only the adaptation measures of only five sectors are presented, which includes agriculture, water resources, forestry, coastal environments and human health sectors.

The qualitative adaptive options studied, include the following:

- Conservation and sustainable use of the natural resource base on which these crops in particular and agricultural in general depends;
- Improvement of existing crops, technologies and indigenous knowledge;
- A policy framework to combat CC-induced problems coupled with appropriate institutions to translate policy objectives into concrete action;
- Education and mobilization of public for effective participation in the fight against the potential negative impacts of CC;
- Construction of a comprehensive information system along with an early warning system;
- Indigenous farming systems should be studied and improved for tackling the impact of CC;
- Linking up with regional and international networks involved in CC studies; and

- Setting up a co-ordination mechanism to enable stakeholders i.e. policy makers, development planners, scientists, rural communities and farmers to participate constructively in efforts to adapt to CC.
- Research activities in climate related diseases/ vectors, health problems to enhance adaptive capabilities,
- Establish and strengthen national and meteorological and hydrological researches,
- Integrated watershed management that would include establishing wildlife reserves and national parks.

Weakness of the adaptation analysis

Rigorous adaptations options are not reflected as it was done for its related vulnerability assessment in the previous section, i.e. no quantitative options are reflected, for example, corresponding to the findings of the vulnerability studies on quantitative parameters such as Biomass yield and Grain yield.

The adaptation assessment does not include barriers analysis of adaptation options identified. However, from the given list of adaptation options provided, it is possible to deduce some barriers for the successful implementation of these adaptation options including:

- Inadequate technical capacities of relevant stakeholders to identify, formulate and implement policy frameworks and legal arrangements to combat the impacts of CC;
- Inadequate technical capacities in technology transfer and technology needs assessment;
- Inadequate technical capacity in institutional management.
- Inadequate financial resources to implement most of the adaptation options provided; and

Technical capacity constraints in adaptation assessments

The main technical capacity constraints of the adaptation assessment seem to be low-level familiarization of stakeholders with the various models and various vulnerability and adaptation frameworks. This knowledge enhances technical capacity to improve the adaptive options through linking of models for related sectors or applying models that integrate across sectors.

3.3.3 On-going Projects

Stakeholder consultations have been carried out in order to identify on-going projects that have direct or indirect relevance to climate change. The main projects that affect the UNFCCC are presented below.

3.3.3.1 Preparation of National Adaptation Plan for Action (NAPA) to the adverse effects of climate change by the DOE.

In response to the above mentioned obligations Article 4 Paragraph 1 (e) and (f) of the UNFCCC, Eritrea is undertaking a study on Vulnerability to climate change and identification of relevant adaptation options in areas of major socio-economic sectors i.e. Water, Forestry, Agriculture, Livestock, Marine and Coastal and Human health sectors of the country.

The main objective of this project is to assess vulnerability of climate change and develop national action plans containing adaptation measures recommended for the major socio-economic sectors in compliance with the national development policies and programmes. The National Adaptation Plan for Action of Eritrea is being designed to provide the national policy and decision makers with a comprehensive and integrated action plan for facilitating the implementation of response measures to climate change.

NAPA Experiences and Lessons Learned:

The whole process was done in consultation with decision makers, stakeholders from government and non-government organizations, and local community. Consultation process has been conducted at four levels i.e. at National, Zoba, Sub-zoba and community level.

Gaps and Limitations of NAPA:

- All possible adaptation options identified could not be implemented due to financial constraints and/or the lack of capacity to take on all the activities.
- Existing gap of knowledge and research on climate change impacts and adaptation measures.

3.3.3.2 Ministry of Land, Water and Environment

The Department of Environment is currently engaged in implementing several programs in the following areas:

- Dissemination of public awareness on environmental and climate change issues through public media,
- Implementing environmental education including climate change in collaboration with the Ministry of Education,
- Implementing Environmental Impact Assessment using National Environmental Assessment Procedures and Guidelines (NEAPG),
- Preparation of National Adaptation Program of Action Framework (NAPA) for urgent adaptation measures in the country.
- Assessment of Ozone Depleting Substances (ODS) and ODS based equipments has been carried out at national level.
- At present it is in the process of formulating training programs on Climate Change for stakeholders and assessing capacity needs in some enabling activities such as biodiversity and climate change enabling activities.

- Preparation of Project document for Second National Communication (SNC) of Eritrea to the COP of UNFCCC,
- The DoE has already drafted “Enabling Activities for the Preparation of Eritrea’s Second National Communication to the UNFCCC. The work done in INC has been reviewed and weaknesses and gaps have been identified. To oversee the overall activity and implementation process a high level Project Steering Committee has been set up.

3.3.3.3 Energy Efficiency and Conservation, Ministry of Energy and Mines

The government, despite Eritrea’s low contribution to global GHG, and although GHG emissions are the least of its priority compared to poverty reduction thus, adoption rather than mitigation to climate change effects are being undertaken, nevertheless it has already introduced and implemented certain policy measures and programmes to reduce GHG.

The Ministry of Energy and Mines has carried out a variety of projects related to energy-efficiency, by using wind energy, solar energy, geothermal and biogas development. There are also programs in the ministry to introduce efficient use of Mogogo (traditional stove), which is intended to the efficient use of biomass.

Increase of energy efficiency/conservation by:

- Introduction of the new Hirgigo Power Plant, which is more efficient in energy use, has minimized consumption of fossil fuel. The consumption of heavy fuel oil has being reduced from 220 grams to 170 grams to produce 1 kWh of electricity. This was estimated to reduce CO₂ emissions by around 45,000 tons during 2002, assuming that 300 GWh of electricity was generated.
- Technical loss in transmission and distribution system has also been reduced at least by 50% and CO₂ of 21,000 tones /year by rehabilitation and voltage conversion in Asmara and Massawa,

Increasing efficiency of traditional stoves:

- Efficiency of traditional stoves has increased from 10% to 21%.
- Initial calculations suggest that CO₂ reduction potential per improved stove is around 0.6 tons per year and each improved stove reduces fuel wood consumption by 50%,

Development and introduction of renewable energy:

- Wind Energy: study of the potential wind energy in southern coastal areas of Eritrea has being finalized,
- Solar PV: An aggregate capacity of over 500kW have been installed.
- Around 1.6 tons of CO₂ is abated for each Kw of renewable energy installed.

Expansion of LPG in rural areas.

Under mitigating CO₂ emissions from biomass or fuel wood, it has program to expand the use of LPG and kerosene in rural areas.

Rural electrification

Moreover, the Ministry has been making a study on rural electrification, and this has a lot of implication to mitigating GHG in Eritrea, including mitigating GHG from biomass. In other words, fuel wood consumption could be minimized, and hence deforestation will be reduced.

3.3.3.4 Pollution Mitigation Measures: Ministry of Transport and Communication

Since the transport sector constituted 41% of total CO₂ emissions in 1994, the Department of Land Transport has taken the following mitigation measures in the transport sector:

- Has banned the importation of old vehicles,
- Expansion of public transport by putting minimal tax for public buses
- Encouragement of non-motorized vehicles
- Developing regulatory instruments, etc as related to efficient use of vehicles and hence reducing CO₂ emissions.

3.3.3.5 Ministry of Agriculture

In order to reduce deforestation the Ministry of Agriculture and Environmental Degradation has taken the following measures:-

- Nationwide afforestation/reforestation programs
- Enhancement of natural vegetation (closures)
- Is in the process of implementing its own Environmental Assessment Procedures and Guidelines in the Agriculture Sector.

3.3.3.6 Ministry of Fisheries

The Ministry of Fisheries is currently engaged in the implementation of the Eritrean Coastal, Marine, and Island Biodiversity (ECMIB) project that has relevance to climate change.

3.3.3.7 Ministry of Education

The Ministry of Education is engaged in the summer student afforestation program for soil and water conservation.

3.3.3.8 Ministry of Health

The Ministry of Health is currently engaged in a big project called HAMSET, whose objective is to control or eradicate malaria, and others, which are related to climate, change induced diseases.

3.4 Constraints, Priorities and Capacity needs

There are uncertainties and gaps in the Energy, Agriculture, and Land use changes and waste sectors due to data limitations.

In the Energy sector, no attempt has been done to disaggregate oil products consumption and CO₂ emissions into mobile and stationary sources. In the Agriculture sector, estimates of CH₄ have not been made using direct relationship between the amount of volatile solids present in animal waste and the potential for methane generation. In order to come up with estimates of emission of GHG from Land-use changes, it is necessary to acquire data about land use changes during the past 20 – 100 years, which has not so far been done for Eritrea. However in the short term it is possible to extrapolate with limited data as a working document, which has to be improved in due course.

There is a lot of research that needs to be carried out in the waste sector. For example, the composition of municipal waste, waste generated in major towns, should be determined and estimated from the annual estimate of per capita waste generation. Emission of methane from wastewater and sanitary systems should also be estimated. There are also some GHGs not covered in the inventory. These include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) (Paragraph 15) and sulphur oxides (SO_x) (Paragraph 17). Hence, Paragraph 6 of decision 17/ CP.7 has not been fully implemented in Eritrea.

Common to all sectors, there are no country-specific emission factors and emission ratios. As a priority there is the need for capacity- building for specific research programmes for development of country-specific emission factors in key priority sectors including Energy, Agriculture, Land Use Change and Forestry and Waste sectors. . There is also a need to establish data base management system for handling the results of inventories including relevant capacity building for sustainability of the inventory processes. Trained manpower in this area is not available and there is clear shortage of skill in handling this issue.

3.5 SWOT Analysis - UNFCCC

Individual level

Strength: there are substantial numbers of graduates in many disciplines that can be effectively utilised in the country,

Weaknesses:

- Inadequate specialists in the sector
- Low motivation of staff due to low salary as well as ineffective allocation of the human resources.

Opportunities: The increase of institutions of higher learning and research stations such as the University of Asmara, Mai Nefhi Institute of Technology, Hamelmalo

Institute and Halhale Agricultural Research Station that are giving courses in agriculture, environmental science and land resources etc.

Threats: Brain drain

Institutional level

Strength:

- A commitment to institutionalise the work of the UNFCCC focal point
- Projects such as NAPA are being implemented by different stakeholders such as MoA, MoE, MoEM, MoLWE and others.

Weaknesses:

- The UNFCCC Unit is understaffed and hence cannot implement all the activities and obligations.
- The institutions mandate and responsibility are not clearly demarcated.
- Lack of skilled people, who can lead the project activities especially at Zoba and community level.
- Lack of communication, transportation facilities as well as lack of finance for research and monitoring activities hinders project activities.

Opportunities:

- The capacity of the existing graduates if effectively redeployed and re-trained could easily be able to fill the skills gap
- Several institutions are engaged in natural resources and environmental activities given proper coordination could share lessons learned and make effective contribution to implement the obligations.

Threats: lack of clearly defined responsibility and mandate among the institutions affects negatively environmental conservation.

Systemic level

Strength:

- The existence of the necessary structure and commitment to implement the UNFCCC.
- Institutional arrangements for UNFCCC are starting to develop at key stakeholder line ministries such as Ministry of Fisheries, Ministry of Agriculture and Ministry of Land and Water and Environment.

Weaknesses:

- Lack of approved policy, legislation and regulations.
- Weak coordination and information exchange among the stakeholders.
- Lack of budgets allocated for environmental related activities
- Lack of institutional capacity and the absence of institutional accountability could affect the implementation of the conventions.

Opportunities:

- Since there is great concern and awareness globally about environmental issues Environment Related Programs have better chance of getting funds from international donors. In particular GEF, UNDP, WB, ADB have promised to provide technical and financial support to the implementation of programs that are environmentally friendly provided there is the capacity to access it.
- Since Eritrea is a newly developing country there is the opportunity to introduce clean technology to reduce pollution as well as introduce recycling of effluents; expanding use of renewable energy etc.

Threats:

- Existing gap of knowledge and research on climate change impacts and adaptation measures.
- Lack of environmental laws and their enforcement can undermine the implementation of the conventions.

3.6 Concluding Remarks and Recommendations

3.6.1 Concluding Remarks

The results of this assessment, especially on the Vulnerability and Adaptation issues, suggest that the previous work reported under the Initial National Communication is far from complete, and a lot of work remains to be done in the subsequent national communications. The priority areas of work will be comprehensively identified during the preparation of the project proposal for producing the Second National Communication of Eritrea (SNC) to the COP of UNFCCC.

The main limitations during the study of INC are data and information gaps in the areas of Population: including growth rates, distribution, density and other vital statistics; Economy: including transport, tourism, fisheries, waste, health and service sector; Education: including scientific and technical research institutions, Institutional arrangements and some information relevant to Article 4.8, 4.9 and 4.10 of the Convention.

The existing institutional arrangement was also weak, since the work has been carried out intermittently, and there were also no clear identified mandates and responsibilities.

Nonetheless, it is hoped that the experience gained, lessons learned, gaps and constraints identified to date will unequivocally form the basis to enhance the Vulnerability study and start implementing adaptation measures in Eritrea.

3.6.2 Recommendations

The limitations mentioned above suggest that there is a need to establish and strengthen appropriate institutional arrangements involving strong participation of stakeholders for the effective updating of the national communication on a continuous basis.

The following structure is suggested (Figure 1) to enable the follow up of the UNFCCC in the Department of Environment.

The task force for mitigation of GHGs may be omitted based on national circumstances and priorities of Eritrea. The mandates and responsibilities of the respective task forces and NCCC may be developed and adopted.

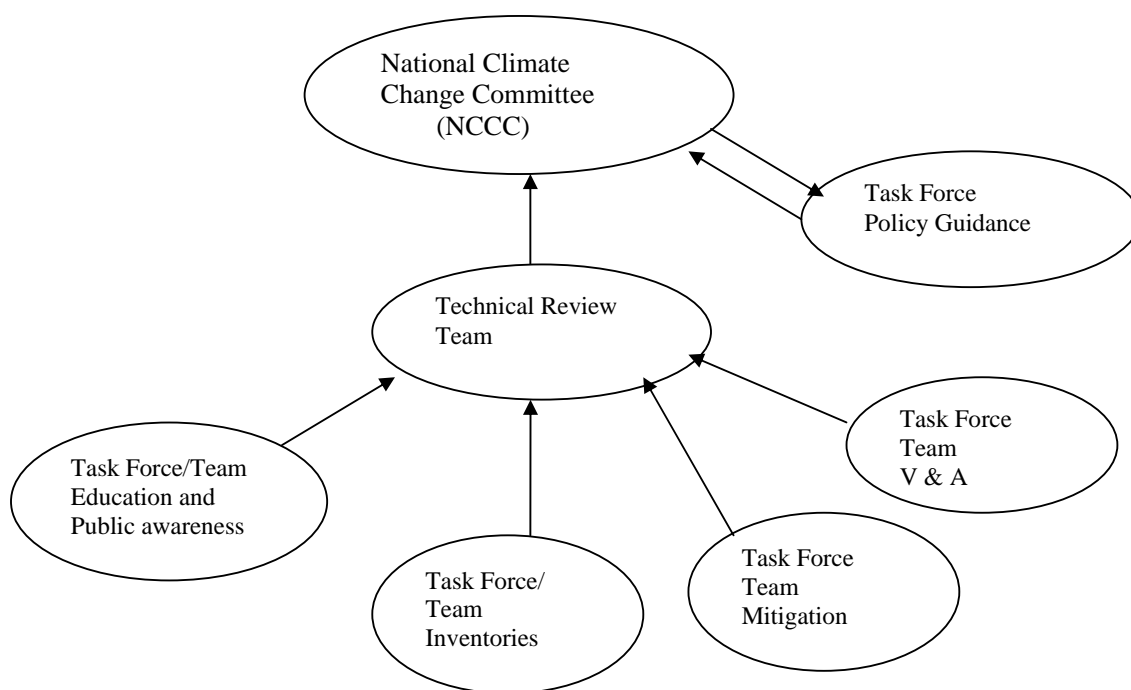


Figure 1. National Institutional Arrangement (NIA)

There is no doubt that the DOE is committed to implement the UNFCCC through its various divisions and branches and its strategic partners and the stakeholders. However, it faces potential constraints in finance, administration, and management and has inadequate technical capacity. Hence there is no doubt that the DOE must develop a mechanism to implement the UNFCCC by aggressively seeking funding and launch in-house and external training of its human resources to implement the Action Plan.

The financial and capacity needs of the project will help:

- Strengthen the National Focal Point,
- Strengthen early warning systems,
- Develop national climate and resource information systems of: climate and meteorology, water resources and hydrology, ecology and agriculture, energy resources, and marine resources,

- Develop research capacities to undertake adaptation work on agriculture, land management, water resources, coastal zone and fisheries, infrastructure development, human health, energy and transport,
- In the long-term high level research on climate change and the environment by building upon the capacity and capabilities of the stakeholders,
- There is also a need for capacity building in data base management, as it is vital to reduce bottlenecks during the conduct of research,
- Focus should also be made on decision 2 / CP.7 on a priority basis. In recognition of the needs of capacity building, the COP has provided a framework for capacity building in developing countries, as an annex to decision 2/CP.7. The framework provides the initial scope of capacity building needs relating to the implementation of the Convention as well as preparation for the effective participation in the Kyoto Protocol process.

IV. UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION (CCD)

4.1 Background

The Convention to Combat Desertification (CCD) is one of the three “Rio Conventions” which was opened for signature on June 5, 1992 at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil. The Convention entered into force in December 1993 and Eritrea signed the UNCCD in 1994, and ratified it in 1996.

Objective of the UNCCD Convention

The objective of this convention is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa. In addition to this objective the convention also includes:-

- Prevention and/or reduction of land degradation;
- Rehabilitation of partly degraded land; and
- Reclamation of desertified lands
- To mitigate the effects of drought.

Purpose of the Study

The CCD Thematic Self- assessment has the following specific objectives:

- Identification of priority issues under the CCD thematic area;
- Identification of capacity constraints, for these issues at various levels (systemic, institutional and individual); which are bottlenecks in the CCD thematic area;
- Evaluation of opportunities and prioritization for capacity building to address the identified constraints.

4.2 National Obligations of Eritrea under the CCD and Its Implementation

4.2.1 UNCCD National Obligations

As a signatory to the convention, Eritrea is expected to make appropriate legal and institutional adjustments to enable it implement and enforce the provisions of the conventions.

In accordance with **Article 20** of the UNCCD, Eritrea is also expected to mobilize substantial financial resources, including grants and concessional loans, to provide support for the implementation of programmes under the UNCCD with additional funding being provided from The Global Environment Facility (GEF) in conformity with the provisions of the instrument establishing the GEF.

The Convention to Combat Desertification provides a number of general obligations for member states. The detailed obligations are included in the convention, however **Articles 5** and **9** of the UNCCD are of greatest relevance to Eritrea because it is located in the semi-arid Sahelian Belt of Sub Saharan Africa, which is prone to

desertification. As described in Articles 9 and 10 of the CCD convention, the factors contributing to desertification, and finding practical measures to combat desertification and/or to mitigate the effects of drought has been identified in the NAP document however the underlying causes have not yet been addressed.

Box 7: Article 5 - Obligations of Affected Country Parties

- Give due priority to combating desertification and mitigating effects of drought and providing adequate resources in accordance with their circumstances and capabilities
- Establish strategies and priorities, within the framework of sustainable development programmes and policies, to combat desertification and mitigate the effects of drought
- Address the underlying causes of desertification and pay special attention to the social factors contributing to the desertification process
- Promote awareness and facilitate the participation of local populations, particularly women, youth, with the support of non-governmental organizations, in efforts to combat desertification and mitigate the effects of drought; and
- Provide an enabling environment by strengthening, as appropriate, relevant existing and, where they do not exist, enacting new laws and establishing long-term policies and programmes.

Box 8: Article 9 - Basic Approaches

- In carrying out their obligations pursuant to **Article 5**, an affected developing country Party or other affected country Party in the framework of its regional implementation Annex which has notified the Permanent Secretariat in writing of its intention to prepare a national action programme, shall, as appropriate, prepare, make public and implement national action programmes, utilizing and building, to the extent possible, on existing relevant successful plans and programmes and sub regional and regional action programmes, as the central element of the strategy to combat desertification and mitigate the effects of drought. Such programmes shall be updated through continuing participatory process on the basis of lessons learnt from field action, as well as the result of research. *The preparation of national action programmes shall be closely interlinked with other efforts to formulate national policies for sustainable development.*
- In the provision by developed country Parties of different forms of assistance under the obligations of **Article 6**, priority shall be given to supporting, as agreed, national, sub-regional and regional programmes of affected developing country Parties, particularly those in Africa, either directly, through relevant multilateral organizations or both.
- The parties shall encourage organs, funds and programmes of the United Nations system, other relevant intergovernmental organizations, academic institutions, the scientific community, non-governmental organizations in a position to cooperate, in accordance with their management capabilities, to support the elaboration, implementation and follow-up of action programmes.

4. 2.2 On-going Activities and Implementation Measures

4.2.2.1 Background

Since ratification Eritrea has been implementing the Convention albeit at low levels due to various constraints among them being inadequate resources and inadequate skill base in the country.

Land degradation is perhaps the most critical environmental problem facing Eritrea. Consequently a National Action Program (NAP) was prepared on January 2002 to address this problem. A new institutional set-up has been proposed in the NAP document, which clearly shows the role and responsibilities of all stakeholders including the local community in implementing the Convention.

Apart from ratification and being party to the Convention, several measures have been taken to implement the UNCCD by the government, non-governmental organizations and community-based organizations. Since land degradation and desertification is a cross-sectoral issue integrated and multidisciplinary approach is required by country members to address land degradation issues. Hence apart from their active involvement in preparation of the NAP document as members of the Technical Committee, they have done tremendous amount of work to combat desertification in various fields.

Summary of the several measures that have been taken to implement the UNCCD are presented below:-

4.2.2.2 Ministry of Land, Water and Environment

The Department of Environment is currently engaged in implementing several CCD related programs in the following areas:

- Dissemination of public awareness on environmental issues through public media,
- Implementing environmental education including land degradation in collaboration with the Ministry of Education,
- Implementing Environmental Impact Assessment using National Environmental Assessment Procedures and Guidelines (NEAPG),
- Preparation of National Adaptation Program of Action Framework (NAPA) for urgent adaptation measures in the country.
- At present it is in the process of formulating training programs on Climate Change for stakeholders and assessing capacity needs in some enabling activities such as biodiversity and climate change enabling activities.
- Assessment of the status of Mangrove trees in the coastal areas,
- Preparation of vegetation maps for environmental management.

4.2.2.3 Energy Efficiency and Conservation, Ministry of Energy and Mines

- The Government of Eritrea with assistance from its development partners has made substantial investment in the energy sector, the largest of which is the Hirgigo Power Plant and Transmission Expansion project commissioned in 2002. With the completion of the Hirgigo project, Eritrea's power generating capacity has more than doubled, increasing from 52 to 136 megawatts. Transmission and distribution lines are being extended beyond the major cities and towns into the rural communities based on the agreement with the European Union, which is funding a project to *rehabilitate the Massawa area power distribution*. An agreement has just been concluded between the GoE and the World Bank to finance the 'Asmara Power Distribution and Rural Electrification'.
- A *pilot wind energy applications project* has being launched with 50% contribution by the GoE and 50% by Global Environment Facility (GEF).
- SIDA has financed the *wind and solar resource assessment project*, preparation of Regulatory Framework for the energy sector and in the electrification of many rural and semi-urban villages.
- *Coastal area wind energy application project*: This is a project funded jointly by the government and GEF for introduction of wind energy in the coastal areas of Eritrea where it has being proved to be a potential area for wind energy application.
- The task of developing and designing an improved *mogogo* stove for baking *injera* (*local staple bread*) is one of the top priorities of the Ministry of Energy and Mines. A major programme is being undertaken to disseminate such stoves to the rural areas with over 12,000 so far installed. This will be of great benefit to women as they shoulder the responsibility of fuel wood collection and cooking. Moreover, the pressure on wood and by the same token, on trees and shrubs, will be considerably reduced because of the efficiency of the improved mogogo.

4.2.2.4 Afforestation and Natural Resources Management Programme, Ministry of Agriculture

In order to reduce deforestation and Environmental Degradation the Ministry of Agriculture (MoA) has taken the following measures:-

As the National Focal Point for UNCCD the MoA is engaged in implementing programs to reduce soil degradation and improve control over water in rain fed areas through the Integrated Watershed Development Program and the Land Productivity Management Initiative (FAO). The MoA, in collaboration with all concerned governmental and non-governmental organizations and assisted by the local communities, is undertaking an accelerated and sustainable afforestation programs. One element of the program is to encourage communities to establish woodlots on community lands. Residents actively participate in designing and managing the

community woodlots, and the Ministry of Agriculture provides seedlings and overall guidance. A second element is to involve young people, who are part of the Summer Youth Campaign Program in building terraces, planting trees and undertaking other soil and water conservation activities.

Since 1994, Eritrean students throughout the country have been participating in afforestation and soil-conservation campaigns during their summer vacations, (during *Kremti*, June-September), organized jointly by the MoE and the MoA. Every year about 18,000 students participate in the summer student campaign mainly on soil and water conservation and afforestation activities for which the government allocates about 17 million Nakfa (1.3 million US\$). The major achievements accomplished in the last 9 rounds of the student summer campaign are summarized in table 2:

Activities	Units	Total Achievement
1. Hillside terrace construction	Hectare	1,102.9
2. Hillside terrace maintenance	>>	1,509.7
3. Check dam construction	M ³	453,385
4. Check dam maintenance	M ³	53,049
5. Micro basin construction	No	148,603
6. Micro basin maintenance	No	93,266
7. Pitting for seedlings	No	11,713,617
8. Planting & Replanting	No	15,871,419

Table 2: Summary of major achievement of the summer student campaign - 1994-2004. (National Report on the Implementation of CCD, 2004).

As an integral part of the country development plan, the Ministry of Agriculture, in collaboration with all stakeholders and wide participation of the local community has accomplished impressive soil and water conservation works. Major activities that have been implemented by MoA/Stakeholders for the last decade are summarized in table 3:

Activities	Units	Total Achievement
1. Hillside terrace construction	Hectare	1,521.01
2. Hillside terrace maintenance	>>	1,605.5
3. Check dam construction	M ³	411,622
4. Check dam maintenance	M ³	47,750
5. Micro basin construction	No	107,881
6. Micro basin maintenance	No	93,266
7. Pitting for seedlings	No	106,461,121
8. Planting & Replanting	No	151,514,023

Table 3: Summary of major soil and water conservation activities implemented for the last 10 years. (National Report on the Implementation of CCD, 2004).

The MoA is going through a significant and important transformation process. This process is an outcome of the Government's strategy of establishing a lean, effective and efficient public service delivery system. Since there was a need to review the organizational structure of the ministry and the way in which it was doing its business, based on the core functions of the ministry, which were considered to be the following: policy, regulations, technical support, research and human resources development.

In 2003 the Government of Eritrea launched an operation for economic growth by launching '*Warsay-Yikalo Development Campaign*' with massive local community participation and a new Ministry of National Development was established to coordinate all sectoral development activities in the country. Most of the work of the '*Warsay-Yikalo Development Campaign*' focuses on combating desertification through participation in environmental conservation and development activities. The Ministry of Health and Information also continues to play a key role in creating awareness among the community that conservation of environment is the responsibility of every citizen in the nation.

Agriculture, Forestry, Rangeland and Livestock

- *Eastern Lowlands Wadi Development Project*: main activities promote a major expansion of smallholder production in Sheib and Labka, through raised efficiency of water control, better agricultural service and input supply, road improvement and better domestic water supply and strengthen the capacity of MoA..
- *Central Highland Horticultural Development Project*: This project is involved in the construction of micro-dams, well digging and provision of motor pumps, input supply such as pesticides and training as well as fruit seedling production and distribution.
- *Shebah - Demas Integrated Development Project*: Shebah-Demas project is involved in construction of embankment, gabions and gully treatment, establishment of a tree nursery site, input supply, construction of water troughs for animals at water points.
- *Toker Land Husbandry Project*: The project is involved in integrated soil and water conservation activities since 1995. Its main activities are construction of terraces, tree planting, training of farmers in basic agriculture, area closure, and provision of farm tools. The project is progressing well.
- *National Seed Development Project*: Its main activity is to establish seed act and national quality seed standard systems, establish seed production farms, and train farmers on seed handling.
- *Special Program on Food Production*: Its main activity is demonstration of improved varieties and multiplication of improved seeds on farmers' plots to increase food security, and input supply.

- *Rangeland Development Project*: This is a project working in two sites (Gahro, Southern Red Sea Zone & Duluk, in Gash-Barka Zone) for rehabilitating and developing rangelands.
- Integrated Watershed Development Project, Phase I (1996-2001).

4.2.2.5 Afforestation and Soil and Water Conservation Program, Ministry of Education

The Ministry of Education (MoE) is engaged in the summer student afforestation program for soil and water conservation but is also working hard to incorporate environmental education in the school curriculum. Parallel to the existing environmental awareness-raising programmes and activities in the schools and through adult radio programs on environmental conservations, efforts are being made by MoE to introduce environmental clubs and school afforestation programmes in schools in order to engage students in extra-curricular activities. Some schools have already established these clubs. To support the Government of Eritrea for the establishment of the Environment Youth Program in the context of implementing the National Action Program to combat desertification, the Grants Committee of the UNCCD Secretariat has approved USD 50,000 for a pilot project. However, the implementation phase has not yet started due to the delay of the transfer of the funds to the CCD Account in Eritrea.

The MoE has opened a new Institute of Science and Technology that train young students, who have completed their secondary school in environmental science and technologies starting from 2003/2004 academic years. The University of Asmara also continues to train students in environmental sciences under its Department of Land Resource and Environmental studies starting since 2001/2002 academic year.

4.2.2.6 Water Resources Development by the Water Resources Department.

- The water resources potential study of the Central eastern escarpment,
- Establishment of National groundwater monitoring network project by the WRD,
- Establishment of National Hydro-meteorological station network project by the WRD,
- Gash-Barka region four towns water supply project, which is being implemented by GTZ and the WRD,
- Agricultural and domestic water point inventory project by the WRD,
- Alla Valley ground water study project by the WRD.

4.2.2.7 Land Classification

- Land classification of Zoba Maekel (central zoba): Use for further planning activities and resources assessment.

4.3 Policies and Strategic Measures Related to CCD

4.3.1 Policy Issues

Given that Eritrea is only fourteen years old after independence in 1991, national policies and institutional frameworks, relating to environmental management, both at the macro- and micro levels are still evolving and being shaped up. Over the last few years the government has taken considerable efforts to formulate the necessary environmental policies and strategies. Moreover, all of them reflect national priorities, which will help Eritrea in poverty alleviation, economic growth and in protection of its environment.

It is clear that Eritrean people and their natural resources are closely linked, as it plays an important role in rural livelihoods, and especially to mitigate risk and contribute to resilience. It is for that reason that the Government of Eritrea places strong emphasis on environmental issues and participatory processes. In spite of these policies and positive commitments, there has been much natural resource and environmental degradation.

4.3.1.1 Land Tenure Systems

Traditional tenure patterns particularly the *Diessa* (village ownership) and *Resti* (kinship ownership) have not been conducive to good land husbandry, even though these tenure systems produced a uniquely egalitarian society with a deep spirit of community. Both these systems have prevented landlessness and thus were economically and socially valuable in the context of subsistence agriculture.

The positive aspect of traditional tenure has been undermined by population pressure. Both the *Diessa* and *Resti* ownership patterns have, in the circumstance, generated fragmentation of holdings.

Whatever traditional conservation measures existed (e.g. prohibition of tree cutting, reducing overgrazing by preventing cattle-except milk cows and plough-oxen, from grazing in village lands during certain periods of the year, use of fallow system to restore the lands vegetation and fertility) was rendered ineffective as dramatic political, social and economic changes occurred around the turn of the twentieth century.

To reverse past land ownership system the Government of Eritrea issued, in 1994, a new land proclamation, Land Law No.58/1994. This Law provides that all land is owned by the State and citizens have use right only. Under this Proclamation peasant farmers have the right to use land for a lifetime and if significant investment has been made on the land then priority is given for closer relatives to inherit the property and

to continue farming the land. Considering past experiences with the Diessa system of land ownership, this Proclamation appears to create conducive environment for better management of the land.

Article 46 states that the Government shall have the "supreme authority" to formulate the country's land use policy, and to determine the classification of land and land use planning. This essentially mandates the Government to develop the principles and criteria for classifying land and planning for the various competing uses, such as use for agriculture, tourism, wildlife conservation, housing, public amenities and so on. Nonetheless, the Proclamation has not been implemented, at least with land distribution to peasant farmers, because its implementation process requires well-established institutional and technical capacities, which at the moment is lacking, and the communal ownership of land is still being practiced.

As can be seen these sectoral land use policies are simultaneously development and conservation oriented. Examples include the policies, which seek to promote irrigated agriculture, while at the same time seeking to conserve catchments. This can lead to a lack of internal consistency, potential for conflict, and a waste of resources.

4.3.2 The National Action Programme (NAP)

The NAP was discussed at a National Forum in August 2001 and its draft conclusions and recommendations were published in January 2002. The report outlines the causes of desertification and prioritises proposed actions. Henceforth, a National Forum will be held every three years to review and assess progress achieved in implementing the recommendations.

The 'five pillars' of the NAP are;

- Improving knowledge,
- Empowering people and institutions,
- Addressing the concerns of vulnerable groups (women & pastorals),
- Reducing poverty through income generation,
- Arresting land degradation and controlling desertification.

At a more concrete level, the NAP puts forward the following priorities for action:-

- Exercising caution in expanding agriculture into dry woodlands and pasturelands,
- Encouraging social forestry and fuel wood and fodder plantations,
- Adopting moisture retention, groundwater conservation and water recycling measures,
- Expanding fuel substitution programmes,
- Creating a national database to monitor, assess and evaluate land degradation and to use this as input to an early warning system,
- Mobilising civil society through participatory processes to increase awareness and shape policy.

4.3.3 NAP Roadmap

To realize and promote the objectives of NAP, various measures have been undertaken, including public awareness, mainstreaming of gender in the NAP, establishment of NGOs/ CBOs, Network for Combating Desertification and Mitigating the Effects of Drought, and formulation of the RAPs. A Road Map (Naizghi, 2001) for NAP implementation has also been formulated by 2001.

Eritrea elaborated and validated its NAP in 2002. It also participated in the Kampala workshop on mainstreaming and drew up a roadmap for the NAP thereafter. The National Action Programme places significant emphasis on project profiles, which represent the practical actions required in implementing it. NAP has elaborated 23 project profiles and 20 full-fledged project proposals have been prepared with a total funding requirement of about 38 million US dollars and are waiting for potential donors.

4.3.4 NAP Mainstreaming

The Committee for the Review of the Implementation of the Convention (CRIC) to Combat Desertification has carried out three reviews since the convention came into force in 1997. The reviews cited availability of adequate and reliable resources as a crucial constraint among other factors. This has been attributed to lack of capacity and inadequate/ineffective existing partnership arrangement for resource mobilization at all levels. Thus the Global mechanism (GM) of the UNCCD was mandated to support affected country parties to strategize and mobilize resources for the implementation of the Convention. It is in this respect that the GM, the IGAD secretariat and other stakeholders have cooperated in a number of efforts since 2000 in search of solutions.

Hence the mainstreaming of NAPs was considered as a major tool for achieving effective partnerships for resource mobilization. This was recommended in the IGAD/GM workshop in December 2001 in Kampala.

For IGAD two main outcomes may be cited:

Acceptance of mainstreaming NAP into major national and donors' country support frameworks as the new rationalization paradigm. It is increasingly becoming a precondition of the donors to support UNCCD/NAP activities.

Creation of the IGAD Sub-regional Support Facility (SSF) – a platform for supporting/catalyzing synergistic programming and resource mobilization at both national and sub regional levels.

However, there has been very slow progress in the mainstreaming in the Member States. Despite the slow pace, the GM continues to support IGAD Secretariat and member states address the two areas of mainstreaming and resource mobilization to implement action plans.

For mainstreaming to become effective, there are other interventions that are equally necessary for the implementation of the NAPs. They include development of national trust funds; capacity building needs; policy harmonization/reviews; role of NGOs and

private sector; and modalities for stronger linkages with SRAPs trans-boundary programme issues. The status of these issues is not clear in most member states. There is therefore need for this information to enable specific and coordinated intervention approaches for any support required by the MSs.

The overall aim is to support MSs mainstream their NAPs into their national development frameworks with a regionally harmonized approach. In the long run this should lead to increased flow of resources into the sub-region for the UNCCD.

Specific objectives of the mission were to:

- Assess status of mainstreaming activities/ approaches and constraints;
- Review partnership building processes for implementing NAPs;
- Assess capacity of national coordination bodies;
- Discuss roles and responsibilities of various actors including the NGOs;
- Exchange ideas on possible common approaches to mainstreaming of NAPs

Considering that a number of studies such as the Interim Poverty Reduction Strategy Paper (I-PRSP) and the Household Living Standard Measurement Survey (LSMS) – qualitative survey, and sectoral studies have been carried out since the Road Map was finalized during 2001 it was found necessary to update the Road Map Document of 2001. The main areas that needed to be updated were the database and other recent developments based on new strategic plans that have been carried out as well as the issue of prioritisation and modifying implementation plans based on the wide consultation that has been carried out (NAP Road Map Document, 2005).

Expected Output

The main expected output would be a concise factual report with recommendations on a common strategy for NAPs implementation including resource mobilization. The report would be discussed at a sub-regional workshop. It is expected to contribute to the furtherance of MSs' efforts in building partnerships with donors.

Constraints

The major constraints identified for the projects that have been undertaken previously, those under preparation and for mainstreaming are:

- Acute lack of capacity in both qualified and numbers of staff: There are few staff doing everything in the NCB; and there is no person that follows up desertification issues on a day-to-day basis.
- Financial resources are extremely scarce,
- Inadequate coordination of Government Programmes and Institutions
- Inadequate strategic programming and projects preparation of the NAPs to bankable levels. Capacity to prepare them has been inadequate.

4.4 Institutional Arrangements

The organizational structure in CCD thematic area is presented in Figure 2 (based on , NAP Road Map Document, 2005), while the key mechanism for implementing NAP at the *Zoba* level is the Sub-committee on Land Degradation of the Zoba Baito (Local Assembly). This body is formed in accordance with the proclamation for the Establishment of Regional Administration (No. 86/1996), via which the Baito has the power to 'form various committees comprising members and non-members' of the Baito (Article 13.3).

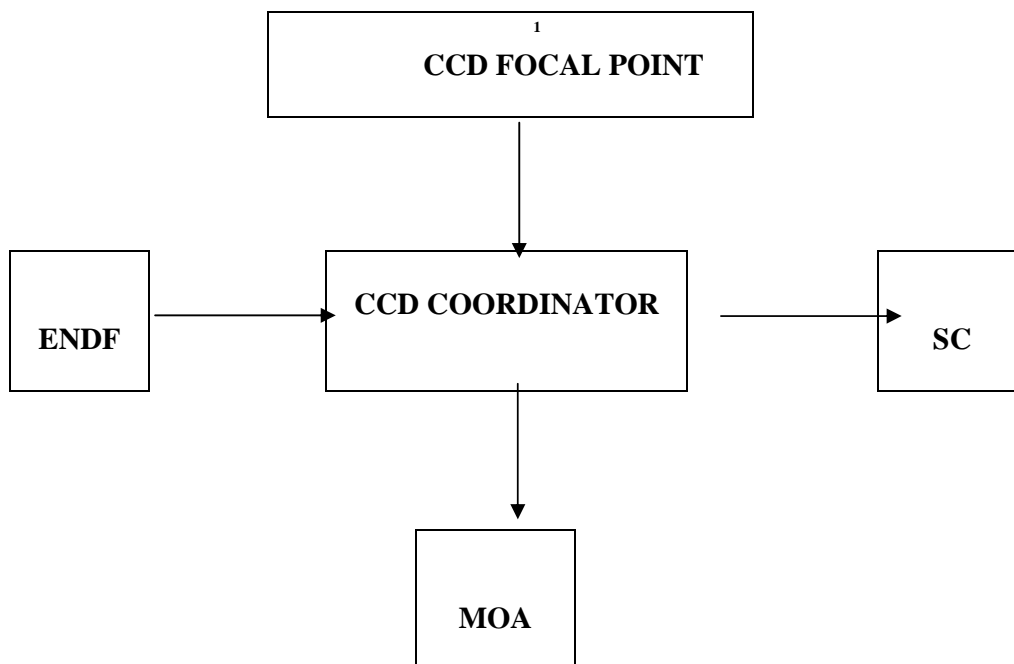
The Sub-Committee on land degradation of the Regional Baito shall have broad powers to deal with land degradation issues, *inter-alia*...

The principal actors in implementing the NAP at the grass-roots level are the village/area administrator and the Executive Director.

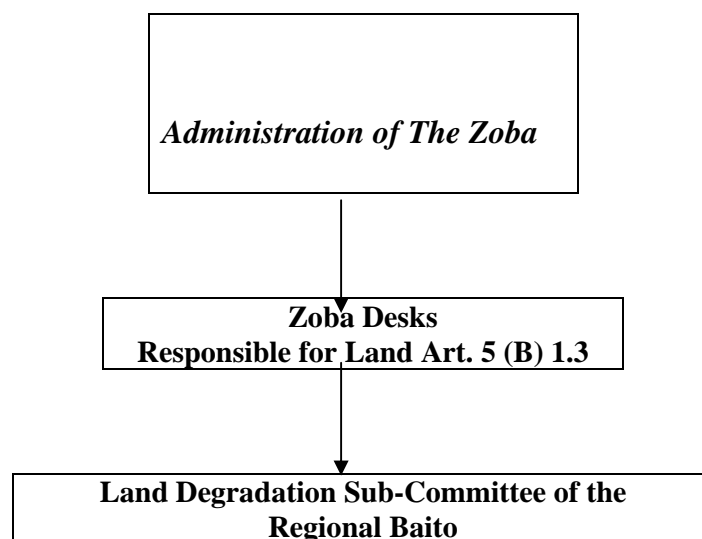
The powers and duties of the village/area level committee are defined in Art. 30 (D), of the proclamation for the Establishment of Regional Administration. However, none of these committees have being established and implemented effectively at regional level due to the slow implementation of NAP.

NAP at the National Level

The lead institution responsible for implementing the NAP is the Ministry of Agriculture. Because land degradation is a cross cutting issue many other institutions, particularly the Land, Water and Environment, Ministry of National Development, Ministry of Energy and Mines and Regional Administrations must be actively involved in the process of implementing NAP. The structure proposed for overseeing the implementation of NAP at the National level is as follows:



NAP at the Zoba Level

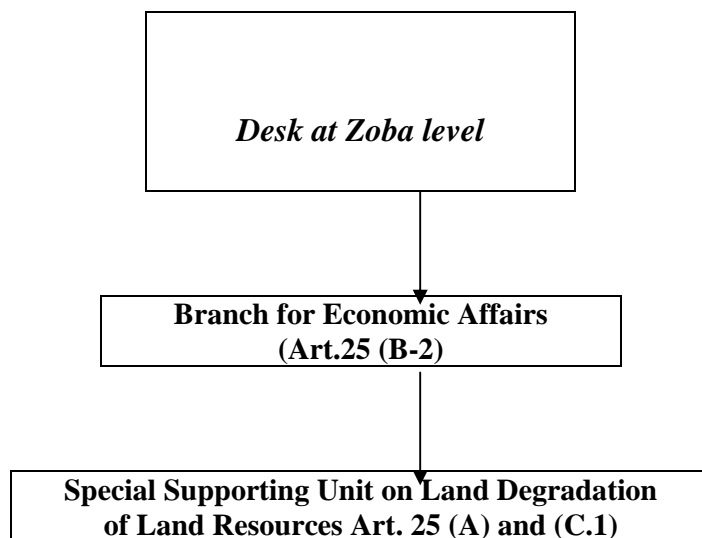


As regards the composition of the sub-committee Art. 10(3) A of the Proclamation on Regional Administration, shall apply i.e. 30% of the membership shall be reserved for women and they shall have equal opportunity for the remaining 70% of the seats.

¹ MOA = Ministry of Agriculture
 CCD = Convention to Combat Desertification
 SC = Steering Committee
 ENDF = Eritrean National Desertification Fund

The Sub-Committee on land degradation of the Regional Baito shall have broad powers to deal with land degradation issues, *enter-alia*.

NAP AT the Sub-Zoba Level



NAP at the Village/Area Level

A key mechanism for implementing the NAP at the "grass-root" level is the "Megabaaya".

The proposed structure for implementing the NAP at the village/area level is as follows:

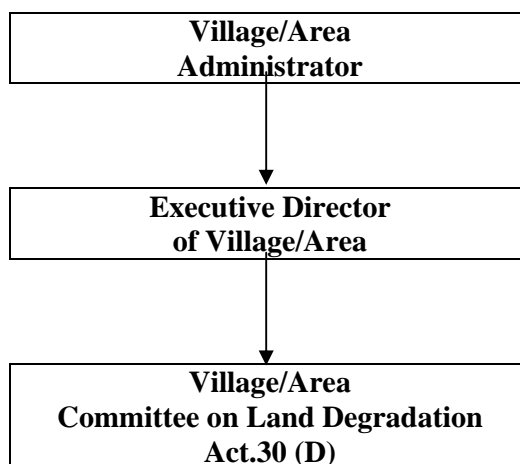


Figure 2. The organizational structure in CCD thematic area.

The principle actors in implementing the NAP at the grass-roots level are the village/area administrator and the Executive Director. The powers and duties of the village/area level committee are defined in Art 30 (D).

Since then three major developments have been taking place:

- Formulation and implementation of the PRSP,
- Restructuring and rationalizing functions of the MoA into 3 main Departments: Promotion and Development (Extension); Regulatory; and Research,
- Current process of elaborating the MoA's Policy and Strategy, which is expected to be ready by September 2006. This is focusing on development, environment, natural resources and food security.

In the latter two processes various stakeholders have been participating together with the Government including the NGOs and the Farmers Advisory Services (FAS). They all came to a consensus that:

- All over Eritrea there are ample natural resources base but very little capacity exists to manage them;
- These resources must be sustainably managed. For example fuelwood is the main source of energy and energy saving stoves must be encouraged;
- The villagers can manage these if given knowledge and credit;
- Extension services are therefore necessary – through collaborative efforts.
- Discussions with several staff of the MoA revealed that many saw little difference between programmes in water and soil conservation in the Ministry and the requirements of the UNCCD. In their opinion priority programmes should be:
 - Awareness creation for effective participation of the land users;
 - Organizing land care groups in communities - leading to proper land utilization;
 - Land use planning for grazing, cropping, conservation and urbanization;
 - Development of the Desertification Trust Fund - in the long-term – in ~10years will be useful when the land care groups become well informed
 - Transfer and exchange of local technology
 - Development of appropriate policies eg in science and technology and land;
 - Information and increased knowledge base on courses, process and effects of desertification.

4.5 Resource Mobilization

4.5.1 Implementation of Funding Requirements

The government allocates significant funds every year for anti-desertification measures carried out by different sectors. In addition to the budget allocated by the government for the implementation of conservation activities, international non-governmental organizations and bilateral donors also fund several projects. The existing funding sources include: GM/UNCCD, UNDP, IGAD, World Bank, ADB, GEF and KR2 (Japan Counterpart Fund for Community Forestry Development & Food Security), the government of Saudi Arabia, Kuwait Fund, Arab Development

Bank, Abu Dhabi Fund, OPEC and the Government of Italy. The European Union is funding a project to rehabilitate the Massawa area power distribution. An agreement has just been concluded between the GoE and the World Bank to finance the 'Asmara Power Distribution and Rural Electrification'. The GoE and the Global Environment Facility (GEF) are also launching a pilot wind energy applications project with each party contributing 50% each. SIDA has financed the wind and solar resource assessment project, preparation of Regulatory Framework for the energy sector and in the electrification of many rural and semi-urban villages.

By allocating large amount of money and expertise, Danida through the Agricultural Sector Support Programme and other NGO's assist the government programme in implementing community based soil and water conservation, afforestation and enclosure through out the entire country.

4.5.2 Eritrean National Desertification Fund

The MoA as the National Focal Point for CCD matters is interested to arrange for the creation of the Eritrean National Desertification Fund (ENDF). The ENDF is the principle mechanism, which will be used to channel financial resources rapidly and efficiently to the local level. As a national focal point for CCD matters, MoA has set in motion for development of the modalities for establishing the ENDF. The process for the consultancy work for establishing ENDF has already started.

4.5.3 Agriculture Funding Strategy

This is being spearheaded by the Department of Planning and Statistics of the MoA, which has been running regular monthly meetings that brought together many stakeholders including among others the MoA, and other relevant Government Departments, as well as UN agencies such as FAO, WFP, OCHA, UNDP, EEC, and NGOs.

The main areas which are currently being considered include (i) water and soil conservation, (ii) agricultural inputs, (iii) capacity building and (iv) contribution of stakeholders and collaborative strategies etc.

4.5.4 UNDP's CCA and UNDAF

The next 5-year Common Country Assessment (CCA) and UN Development Assistance Framework (UNDAF) elaborations are underway. Implementation of the UNDAF will start in 2006. UNDP values and ensures the participation of the government in the elaboration of the CCA and UNDAF.

Based on the elaboration of the previous studies by CCA and UNDAF land degradation is considered a priority issue under environment and therefore many priority areas of the NAP are also of priority concern to the UNDAF, including:

- Energy and alternative energy sources
- Resource assessments and mapping
- Land use planning, reclamation and land policy
- Soil and water conservation
- Nature conservation including wildlife conservation and biodiversity

- Development of resource mobilization

Although the UNDP fund for the 5-year is limited, however possibility of increasing or reducing the allocations from UNDAF headquarters always exists depending on a country's fund utilization and needs. Furthermore there is always flexibility within the country programmes if there are changes in policy and priority needs, funds can be reallocated from one area to another.

UNDP estimated that about 90% of NAP concerns are contained in the CCA/UNDAF and in the Government plans (PRSP and MOA policy and strategy). Therefore the greatest challenge is that of coordination and resource mobilization for implementation of the programmes. Unfortunately environmental concerns are not presently the top priorities of many donors in the country.

Although the UNDP does not coordinate donors, its UNDAF provides entry points to all UN agencies to support the country in various areas. The UNDAF can and is often used by other donors to identify areas to support Eritrea. Overall coordination of international economic cooperation is under the Ministry of National Development and through it the Government prioritises national development needs. Close contact is therefore needed with the Ministry of National Development for UNCCD programmes in order to take firm roots in Eritrea.

Noting that the government is doing a lot in combating land degradation and that there will always be gaps in funding programmes, the UNDP recommended three main issues that need to be prioritised:

- Land policy review should be undertaken;
- Priority areas be clearly identified and implementation phased out
- Priority programmes/projects be fully elaborated for donor consultative forums

The mainstreaming of NAP fortunately coincides with UNDP's CCA/UNDAF for the next 5 years, and the development of a new policy and strategy for agriculture in the country. Review of the PRSP is also likely in the near future. Hence the mainstreaming activity should effectively utilize these opportunities.

4.5.5 Linkage achieved with sub-regional and regional action programs (SRAP & RAP)

Eritrea as a member of Intergovernmental Authority for Drought and Development (IGAD), works with the IGAD secretariat in all phases of preparation of the sub-regional programme (SRAP), which mainly focuses on transboundary natural resource management issues. It has actively participated in the development of IGAD sub-region environmental education and training programme aimed at incorporating environmental education in the government education system and development of appropriate school curricula in environment. Areas of co-operation under IGAD-SRAP are the following:

1. Arrangements for the development and management of transboundary natural resources:-

- Formulation of an IGAD Hydrological Cycles Observation System (IGAD-HYCOS),
- A Pilot Project on Water Harvesting in Dry lands of the IGAD region has being formulated and is being implemented,
- Capacity Building in Integrated Water Resources Management and Household Energy.

2 Provision of an enabling environment for the implementation of the Convention; particularly in legal, institutional, economic and policy matters

- IGAD SRAP Business Plan has being developed
- IGAD Sub-regional Support Facility (SSF) has being created
- Conflict Early Warning and Response Mechanism Network (CEWARN) developed and is being implemented with the support of Germany and USAID
- A Gender Desk created at IGAD Secretariat with the support of UNIFEM.

3. Information collection, analysis and exchange in accordance with the SRAP

4. Research and Development (R&D)

5 Educations and Public Awareness Campaign,

6. Co-ordination of programmes to develop alternative energy sources

7. Co-operation in the management and control of pests, weeds, human and animal disease vectors, plant and animal diseases

8. Early warning systems and joint planning for mitigating the effects of drought

9. Capacity building

4.5.6 Role of Stakeholders: Particularly NGOs

The State of Eritrea has a unique arrangement for partnership with the NGOs. The NGOs work at various levels from community level, Zoba and at national level. They are registered with Eritrea Relief and Rehabilitation Commission (ERREC). They then choose ministries and departments to work with.

The MoA like other sectors, has a dedicated NGO Liaison Office with a fulltime officer. This office is equipped and facilitated by NGOs themselves. Currently 24 NGOs are registered as partners in this arrangement with the MoA.

Every one of these NGOs presents an annual budget and work plan to the Ministry's planning committee for vetting and approval. The same happens, when an NGO wishes to implement a project, alone or in collaboration with the Government. Presentation is made to the liaison office to ensure project registration, facilitation and coordination.

In carrying out this, the NGOs and the MoA Panning Committee ensure that their programmes and projects are in line with government/ MoA strategies and programmes. And these are the entry points for NGOs into the UNCCD/NAP activities. The NGO proposal should be complimentary and synergistic to the government's efforts.

The NGOs then implement their projects and programmes at the Zobas and villages.

However it is important to note is that the NGOs participate in the regular monthly planning meetings of the MoA and receives minutes of the meetings. They have been involved in the elaboration of the Ministry's policy and strategy. The committee has already agreed on the vision and mission of the ministry.

Further, 10 NGOs in the area of land degradation have formed the Eritrea Sustainable Land Use Forum (ERSLUF) to enhance capacity building activities in this area with land care groups and in the government. They are part of the umbrella Horn Sustainable Land Use Forum in which members include Eritrea, Ethiopia, Djibouti, Somalia and Sudan. .

A similar Water Forum has been formed in the region in which Eritrea NGOs are members. Membership includes Eritrea, Kenya, Uganda and Ethiopia; with its headquarters based in Kampala, Uganda.

Toker Integrated Community Development, a local NGO is chair of both forums in Eritrea.

Currently the NGOs have no effective forum for contributing towards the implementation of the UNCCD. The forums are therefore taking initiatives to merge the two forums in the Horn to form a "Sustainable Environment Forum", which will cover interest of UNCCD. This is after realizing that the land use and water forums have similar visions and missions. The NGOs requested IGAD to take leadership and initiative to bring together the NGOs so that they contribute to combating desertification in the sub-region since the current network of NGOs for the UNCCD is not functional/ effective in the sub-region.

4.6 Capacity Building

Several measures have been taken to improve the knowledge and skill of staff of MoA and other concerned ministries through experience exchange, visits to other countries and through short-term training programmes locally and in countries with similar agro-ecological, social and economic conditions.

In addition, the national research institutes specially the Research Department of the MoA and the Training and Research Department of Ministry of Energy and Mines put a lot of effort in developing and disseminating improved production techniques and improved energy saving stoves.

Human resource deficiency has been the greatest bottleneck in Eritrea's development efforts. The Government is taking the problem by importing foreign experts on

temporary basis but the long-term solution lies in a concerted national effort aimed at increasing educational and skill development opportunities. Accordingly, the government through the World Bank funded Human Resource Development (HRD) project and is executing short term and long-term undergraduate and postgraduate training programmes since 1998. By next academic year, University of Asmara will start giving post-graduate courses in the field of environmental science and agriculture. This may eventually reduce the human capacity deficit in the country.

4.6.1 Partnership Building Efforts

Partnership building efforts are ongoing with various donors but not necessarily in the context of the NAP. The most direct partnerships building efforts are with the UNDP as above and the NGOs as described below.

Although all stakeholders need capacity building of different types and to different extent centred on the NFP. More in-depth overall analysis of this is awaited through the capacity self-assessment project.

To put the capacity needs in better perspective the duties and responsibilities of the NFP were reviewed. In general the NFP coordinates, facilitates and administers the UNCCD/NAP processes. Specifically, NFP duties and responsibilities include:

- Ensuring implementation and coordination of NAP and UNCCD in general;
- Formulating, preparing, and submitting different project proposals for different potential partners some of which are complicated and therefore need competency, time, facilities, motivation and commitment;
- Preparing different reports for different partners including UNCCD Secretariat;
- Raising education and awareness for targeted actors including local communities through various means / strategies eg articles written to various media (radio, newsletters) and where capacity exists, the preparation of audiovisuals and documentaries;
- Coordinating and organizing the functions of the NSC and TC – preparing and taking minutes of their meetings, and making follow-ups;
- Monitoring and evaluation of the implementation of the NAP - including field programmes, policy matters, implementing agencies' issues etc;
- Drafting various ToRs for any consultancy based on project documents – then arrange for adverts and initiate evaluation;
- Attending various local meetings and workshops related to the UNCCD implementation for all sorts of initiatives, pilot projects etc with implementing agencies and make appropriate follow-ups;
- Attending regional and international meetings and make follow-ups.

To enable them to undertake the above duties effectively the UNCCD NFP and the coordinator recognized and enumerated their human resources capacity building needs as follows:

- Minimum needs at the secretariat should be:
- Focal point
- Coordinator

- Assistant coordinator
- Secretary/ office assistant

However at present none of these resources are available.

At present, the focal point is head of a department, a policy maker, concerned with overall strategy and direction of the ministry and government. He is not involved in the technical daily activities of the UNCCD.

It is only the Coordinator, who is responsible for the daily administration of UNCCD/NAP processes. He also has other responsibilities in the department that are the main part of his job description.

An assistant coordinator would assist the coordinator in most of the activities of the UNCCD and also ensure continuity in the absence of the coordinator. This position has not been filled since the end of the NAP elaboration project.

Just as the assistant coordinator, the position of a secretary/ office assistant has never been filled since the end of the elaboration of NAP.

Evidently only the coordinator from the NFP is partially devoted to the UNCCD activities, whose duties and responsibilities as shown above are many, wide and demanding. There is therefore a need to build the capacity of the NFP in order to effectively implement the UNCCD.

4.6.2. Institutional Capacity, Strengths and Weaknesses

The NCB, which was established after ratification of the convention, is still operational and the Ministry of Agriculture through its Agricultural Promotion and Development Department spearheads the activities of NCB. However so far no detailed assessment of its capacity and its limitations has been carried out so far. In this section an attempt is made to evaluate the strength and the weakness of the National Coordination Body.

Strengths:

- The composition of the NCB includes all relevant government institutions, which are actively participating in combat desertification.
- A national forum for synergizing the three UN conventions on environment was held in 2003.

Weaknesses:

- The NCB feel that the CCD is the responsibility of the Ministry of Agriculture.
- Participation in regular meeting is not as it is supposed to be.

Following this assessment there is no doubt that the capacity of the National Coordinating Body (NCB) has to be strengthened by:

- Awareness raising programmes, especially for decision makers through regular meeting, workshop, seminars, mass media...etc).
- Training of the Technical Committees.

4.6.3 SWOT Analysis On CCD

Individual level:

- ✓ ***Strength:*** There are graduates of soil and water conservation, plant science, geography and extension agents who work with the community.
- ✓ ***Weakness:*** Inadequate specialists in the area of CCD as well as ineffective allocation of the area of interests.
 - At the beginning there were representatives in each zoba and Danida was paying their salary, however, the Danida project has been terminated
- ✓ ***Opportunities:*** University of Asmara started post-graduate courses in the field of Environmental Science and Land Resources during 2005.
- ✓ ***Threats:*** There is low motivation of staff due to low salary and lack of program for upgrading the skills of the staff.

Institutional level:

- ✓ ***Strength:*** CCD is set-up as an institution. There are many projects related to CCD programmes that are being implemented by different stakeholders like MoA, MoE, MoEM, MoLWE and others.
- ✓ ***Weakness:***
 - The CCD Unit is understaffed and hence cannot implement all the activities and obligations. In addition there is lack of skilled people, who can lead the project activities especially at community level.
 - Lack of communication, transportation and other facilities hinders project activities.
- ✓ ***Opportunities:*** Several institutions are engaged in different environmental activities hence if there was coordination and proper and well-established linkages, there could have been sharing of experiences and knowledge.
- ✓ ***Threat:*** Lack of awareness about CCD. For example some people consider it as the only responsibility of the Ministry of Agriculture.

Systemic level:

- ✓ ***Strength:*** The existence of the necessary structure to implement the UNCCD

- ✓ **Weakness:**
 - Lack of approved policy and legislation in relation to CCD.
 - There is lack of coordination among the potential stakeholders and hence sometimes overlap of activities is being observed.
 - There is no budget allocated for environmental related activities as well as there is shortage of funds
- ✓ **Opportunities:** Funds are available for the implementation of the conservation activities from international non-governmental organizations and bilateral donors provided there is the capacity to access it.
- ✓ **Threats:** The lack of institutional support due to capacity constraints and the absence of institutional accountability could affect the implementation of the convention.

4.6.4 Opportunities For Capacity Building

1. There are many projects related to CCD programmes that are being implemented by different stakeholders like MoE, MoEM, MoLWE and others.
2. Institute of Science and Technology trains high school graduates in environmental science and technologies starting from 2004.
3. University of Asmara has started post-graduate courses in the field of Environmental Science and Land Resources during 2005
4. HRD project is executing short and long-term under graduate and post-graduate training programmes since 1998, which may alleviate the human resources capacity constraints in the country.

4.6.5 Capacity Building Requirements

1. Plan to ensure a board participation of stakeholders in the process of drafting & submission of national report:

- Regional and national workshops
- Consultation with stakeholders
- Creating national network system on information exchange
- Field survey to assesses the impact of implementation and
- Three days national report validation workshop (possibly to be organized in one of the affected regions of the country).

2. Levels and actors that should be involved in the process this year, in order to ensure a better quality of the report are:-

- Full participation of implementing government institutions,
- NGO's and Community Based Organizations (CBO),
- Government officials (decision makers).

3 Technical and financial support to implement the activities:-

3a Resources Available:

- National Co-ordinating body (NCB),
- Technical committee of NAP,

- National Focal point
- National coordinator
- Regional CCD facilitator
- General project account
- Infrastructure (office, old computer, photocopier, binder, scanner..)

3b. Resources Required:

- Creating of effective network,
- Mainstreaming NAP,
- Empower NGO's involvement in data dissemination and processing, as well as in implementation of the NAP.
- Address the concern of vulnerable women and other civil society
- National Consensus Building Workshop: it is intended that the process should mobilise individual agreements and capacity strengthening measures between the Eritrean institutions and appropriate donors or international agencies, each of which will have their own formats and proposal requirements.
- Personal and financial support to the CCD coordinating body.
- A minimum of 3 consultants including a team leader,
- Maps and statistical data and packaging of country profile maps (CD ROM....etc),
- Hiring of workshop facilitator and rapporteur for three days for the national report validation workshops,
- Transport and DSA for participants,
- Workshop logistics (including rental of venue, stationary, personnel, reproduction of proceedings etc),
- Final report typing and reproduction,
- Report dissemination,
- Report publication through local media (radio/press/TV),
- Laptop computer,
- Digital camera,
- Financial support required for the elaboration of the national report.

4. Activities that to be conducted in order to elaborate the report along the questions listed in the Help Guide:

- Assessing the capacities needed across all stakeholders
- Stakeholder analysis, determining the role of stakeholders in report writing process,
- Training workshop for all stockholders, on the format and reporting system of the implementation of the UNCCD,
- Strengthening existing institutional mechanisms and developing networks,
- Creating a national database to monitor, assess and evaluate land degradation and use this as input to an early warning system,
- Construct comprehensive information and monitoring system, which is integrated with early warning,
- Integrate with regional and international networks,
- Include timeframe for consultation, formulation and acquisition of data and maps.

Since the Thematic assessment was conducted within the context of the commonly accepted definition of capacity building as the actions needed to enhance the ability of individuals, institutions and systems to make and implement decisions and perform functions in an effective, efficient and sustainable manner. The capacity requirements are presented at three levels: the Individual, Institutional and Systemic levels:

Individual level

- Training in data processing.
- Employ a person who knows CCD indicators like aridity index, so that monitoring and evaluation of activities can take place.

Institutional level

- Hiring or training of CCD facilitators at zoba level.

Systemic level

- Desertification fund has to be started,
- Coordination between stakeholders is needed,
- Public awareness campaign must be intensified, through production of documentary film on land degradation, preparation of posters/leaflets and distribution of these audio-visual aids to all CCD facilitators at regional level,
- Establish a donor consultation forum.

4.7 Summary of Key Findings and Recommendations

4.7.1 Key Findings

During the study, various stakeholders were consulted including the UNCCD Focal Point, various departments in Ministry of Agriculture, Ministry of Land, Water and Environment, UNDP and NGOs.

In general the stakeholders expressed their continued hope that it will be through the Convention that the country will be able to effectively address the scourge of desertification and poverty. This is clearly expressed in Eritrea's NAP and 3rd National Report to the UNCCD.

There have also been concerted efforts to implement the NAP in Eritrea since the inception of the project. The awareness level of the desertification issues in the Government is of high and the priority areas are well known.

Mainstreaming of NAP has started. This is an opportune time in view of the fact that three important frameworks are presenting entry points. The next UNDP's CCA/UNDAF have just commenced; the MoA's Policy and Strategy is ongoing; and the PRSP review is likely in the near future. The mainstreaming therefore needs concerted support and should be focused to be successful:-

- There is an intention to form the NDF but the status is not clear currently;

- Partnership building opportunities are currently being consolidated between the Government and NGOs and UNDP because of the unique arrangements the two sides have evolved;
- There are clear capacity building needs of the NCB. Specifically, there is need for the coordinator to focus more on the UNCCD and needs an assistant; there is also a need for material support; and resources for implementation, coordination and M&E;
- Role and collaborative procedures for NGOs is very well defined and fairly strict compared to the other MSs. There is an NGO liaison office in MoA to which the NGOs are currently registered partners;
- The proposal for IGAD to take some role for the formation of an IGAD NGO Network for combating desertification has being received.

Little emphasis has being placed by the general public on controlling land degradation because of general lack of awareness about desertification issues. In response to the chaos of the last few decades, people tend to exhibit habits they inherited from the anarchic situation of the past and this is especially true for the exploitation of natural resources. In order to transform these attitudes into reasonable and sustainable use of resources, workshops and seminars have been conducted at all levels and regions of the country over the past few years, however more needs to be done.

4.7.2 Recommendations

A review of the implementation of activities, which would fulfill the country's obligations under the UNCCD, suggests that there are limited funds available to enable the successful implementation and mainstreaming of NAP activities.

There is no doubt that the DOE must develop a mechanism to implement the CCD by aggressively seeking funding and launch in-house and external training of its human resources to implement the Action Plan. This would suggest the need for a coordinating mechanism based on the synergy of the conventions, and working with the various Governmental institutions, partner agencies and non-governmental organizations.

Although it appears that there is adequate policy and legal framework guidelines to support the implementation of programme/projects, which support the aims of the UNCCD and are in keeping with national priorities, the fact that the various legislations, which are in draft form, have not been promulgated has constrained the drive for efficient implementation of the CCD.

While the lack of institutional support may be partially due to capacity constraints (human and financial) a total understanding of the issues goes beyond that to the key matters of the absence of institutional accountability for the implementation and the absence of any mechanism for monitoring progress. Hence rigorous monitoring of progress should be accomplished regularly.

Having realized the difficulties of building partnerships for the implementation of the Conventions for resource mobilization, it has been proposed that country Parties to the UNCCD should identify willing development partners active in their respective countries to play the role of “Chef de File” with the view to assist with the coordination of other development partners to enable them to meet their obligations towards the implementation of the UNCCD and it is suggested that Eritrea has to take on board this type of opportunity.

V. CAPACITY NEEDS ASSESSMENT

5.1 Background

The NBSAP, NAP and NIC set out priority actions and requirements to implement the respective conventions. Many of the action plans on climate change interlock with those proposed for land degradation. Despite the goodwill the capacity to execute long-term monitoring procedures remains extremely weak. One of the main contributing factors to this failure is the lack of finance in addition to lack of integration into national development and environment mechanisms and processes.

5.2 Identification of Capacity Needs

The technical complexity inherent in issues relating to biodiversity, climate change and desertification and the need for a more integrated approach, requires strengthened national expertise, for effective protection and conservation measures and for Eritrea to meet its obligations under international conventions.

A capacity and Organisational Capacity Needs Assessment of the Department of Environment has been carried out (DOE, 2001). Existing capacity, including institutional, financial, technical and human resources of relevant institutions involved in natural resource management and also in the provision of training for natural resource management remain weak. The following major constraints have been observed:

- No detailed capacity needs assessment has been undertaken;
- An absence of effective local networking has meant that information-sharing both nationally and regionally remains weak;
- No process exists to set prioritisation targets in the area of environment.

An institutional structure has not been established to maintain progress and to upgrade levels of scientific knowledge among experts in different relevant institutions. Consequently there are serious limitations in adaptive planning capacities, infrastructure development, information gathering and management, analysis and information dissemination.

Priorities for Staff Training

The action plans that have been enumerated above can only be undertaken if some of the skill gaps are addressed. Since many of the points for action plans about climate interlock with those proposed for land degradation, the type of capacity needs are similar. Review of the NBSAP, NAP and First Communication Report and the capacity needs assessment has shown that the following skills are required across the board in the three conventions:

- Training in database management, computer operation, planning methods and monitoring and evaluation.

- To strengthen skills and knowledge of Environmental Managers in team-building, effective leadership, participatory decision-making strategies, time management, performance evaluation, and project management.
- Training in environmental management and environmental science among all staff.
- Industrial pollution,
- In-service training in the application of the NEAPG, technical writing, and effective time-management practices,
- Environmental impact assessment, environmental information and database management,
- Awareness Campaigns
- Environmental policy and legislation

5.3 Capacity building - Biodiversity

Environmental capacity needs in general and biodiversity in particular is limited in Eritrea. There is shortage of qualified biologists, ecologists and environment scientists within all of these institutions. The shift towards decentralisation of the government to the regional administrations has made this shortage of expertise more serious. Decentralisation means that more and more decisions, which affect biodiversity, will be taken at regional and sub-regional level but environmental staff in the regional administrations are either lacking or are recently employed graduates with limited knowledge about biodiversity and no practical experience. They will need strong institutional support from the line ministries if they are to fulfil their duties effectively.

The recently promulgated Fisheries Legislation provides a strong foundation for legal protection of CMI biodiversity. However, any legislation is only as effective as the system for its implementation. Currently, both MoFish and the Regional Administration lack expertise and experience in the use of legislation to protect CMI environments.

Capacity requirements in Biodiversity are the following:

- Terrestrial ecology and ecosystem management.
- Taxonomy
- Land use and conservation farming
- Alternate energy
- Agriculture
- Plant genetics
- Training on *ex-situ* conservation

Whilst there is a need for additional legislation and regulations to ensure conservation and sustainable resources for CMI biodiversity, there is an equally important need for the development of human resource for the efficient and effective use of legislation.

5.4 Capacity building – National Action to Combat Desertification and Mitigate of Drought (NAP).

In order to implement the recommendations of the ‘five pillars’ of NAP 23 projects have been proposed (MOA, 2002). It is clear from an examination of the five pillars of NAP that major emphasis is placed in arresting land degradation and controlling desertification (the fifth pillar) as 12 of the 23 proposed projects and 40% of the proposed budget address that pillar. In second place are improving knowledge (the first pillar) and empowering people and institutions (the second pillar), each with 8 projects and 21 % of the funding. By contrast, addressing the concerns of vulnerable groups of women and pastoralists (the third pillar) is hardly being addressed at the outset, with only 1 project and a mere 1% of the funding. Reducing poverty through income-generation has only 3 projects and 16% of the funding.

The emphasis of NAP in terms of priority reveals a major initial emphasis on forestry issues, which is being allocated 52% of the proposed budget, while in second place is agricultural issues, with 18% of the proposed budget. No direct financial support is being initially planned for awareness, education, and training issues and very little to human-settlement issues.

Capacity requirements in land degradation are the following:

- Land use and conservation farming
- Alternate energy
- Soil and water conservation
- Re-afforestation.
- Groundwater conservation

5.5 Capacity building – Climate Change

In order to achieve a satisfactory level of food security and poverty reduction the adaptation strategies for climate change should address these objectives. However the financial, institutional, technical and human resource capacities are lacking and hence the Initial Communication has identified some capacity gaps which need to be addressed. The aim is to strengthen the National Climate Secretariat, support preventive measures, which includes the setting of preparedness for disaster relating to climate change as well as develop a national climate and resource information systems. In addition acquire financial and technical support to undertake research on alternate sustainable energy systems and on short term and long-term adaptation measures mainly in natural resources.

Capacity needs on climate change

Develop national climate and resource information systems, which include:

- Climate and meteorology, water resources and hydrology
- Ecology and agriculture: monitoring vegetation and land use changes

- Energy resources (estimation of and monitoring of solar energy, resources, wind and biomass resources).
- Marine resources (monitoring and estimating Red Sea winds, currents, sea surface temperatures and sea level rise).

VI. CAPACITY CONSTRAINTS, GAPS AND OPPORTUNITIES OF THE STAKEHOLDERS

6.1 Introduction

The institutional and technical capacity in planning and implementation of environmental projects of most of the stakeholders has still a long way to go before it achieves its objectives. Based on the stakeholder analysis and environmental capacity needs the findings can be grouped into three namely individual, institutional and systemic levels.

The institutions approached have several constraints such as shortage of skilled manpower of various specialties, and technical know on specific skills related to the three thematic areas.

Moreover, institutions have shortage of institutional facilities such as monitoring and/or inspection equipment, library, equipment to measure air and water quality, research materials, chemicals and facility in the laboratory as well as information or database. This is in one way or another attributed to (but not necessarily) the availability of funds. Many of the institutions have suggested lack of funds as their main constraint. Lack of communication and co-ordination of the line ministries, and inadequate awareness among employees and the public at large is also among other factors that can be considered as constraints. Inadequate institutional arrangement and capacity as well as lack of follow up and evaluation of activities are other constraints prevalent in the main stakeholders.

Further more the legal and regulatory issues are the other areas of concern that impact on the environment for example lack of land use policy, has resulted in extending of farming activities by the army in marginal areas and there is a possibility that this areas will degrade very fast.

Lack of clear mandate in enforcing and developing regulations or environmental laws as well as lack of legislation on wildlife and forestry, and having outdated Maritime Code, and delay of ratification of conventions has serious implications for environmental degradation. Eritrea as a strategic place has to ratify and implement international conventions such as Jeddah Convention or Nairobi the Convention.

6.2 Prioritisation Issues in Capacity Building

A National Issue Prioritisation Matrix has been prepared for the Respective Thematic Areas (Table 4). Prioritisation Matrix of the thematic areas was carried out taking into consideration the scale of the problem, level of concern, ability to adequately address issues. The level of concern of the problem was classified into three levels that are at community, zoba/subzoba and national.

From the Prioritisation Matrix it is clear that the scale of the problems are high, while the level of concern is relatively low across the spectrum. Although there is sufficient

capacity albeit at lower level to accomplish the tasks if proper allocation of human resources is made.

Ranking of the issues suggests that strengthening capacity and awareness raising are the most important issues for all parties and across the thematic areas.

Table 4: National Issue Prioritisation Matrix

UNCBD Issue Prioritisation Matrix

Issue	Scale of problem ¹	Level of Concern ²			
		At community level	At zoba/sub zoba level	At National level	
Development of appropriate legislation, measures, strategies and relevant institutions for in-situ conservation of species, restoration of degraded ecosystems and recovery of threatened species.	National	High	Medium	Medium	
Integration of the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.	National	Medium	Low	Low	
Identification and monitoring of components of biological diversity important for its conservation and sustainable use.	National	Low	Low	Medium	
Access the financial resources provided through the financial mechanism of the Convention and exploit the financial resources both national and international.	National	Medium	Medium	Medium	
Respect for and preservation of knowledge, innovations and practices of indigenous and local communities.	National	High	Low	Low	

Issue	Scale of problem ¹	Level of Concern ²			
		At community level	At zoba/sub zoba level	At National level	
Strengthening the capacities of the national and local agencies responsible for management, conservation and sustainable use of biodiversity.	National	High	High	Medium	
Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes;	National	Low	Medium	High	
Introduce appropriate procedures requiring environmental impact assessment of projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.	National	Low	Low	Low	
Creation of ex-situ conservation institutions (Botanic Gardens, Zoo with conservation facilities, Herbarium, Natural History Museum, Aquarium).	National	Low	Low	Medium	
Establishment of continuously operating clearing house mechanism.	National	Medium	Medium	Medium	
Survey and gazettement of a network of Marine Protected Areas, while developing conservation strategies for ex-MPA sites.	National	Medium	Medium	Medium	

Issue	Scale of problem ¹	Level of Concern ²			
		At community level	At zoba/sub zoba level	At National level	
Development and maintenance of Coastal, Marine and Island (CMI) biodiversity database.	National	Medium	Medium	Medium	
Introduction of appropriate measures for waste management and treatment.	National	Low	Low	Low	
Conduct an inventory of traditional crop and livestock varieties, assessing their geographic range and potential, with a view to extending the accessions in the Plant Gene Bank.	National	Low	Low	Medium	
Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology, which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;	National	Low	Low	Low	
Surveys of trade in prohibited animals and plants and development of effective control measures	National	Low	Low	Medium	

UNCCD Issue Prioritisation Matrix

Issue	Scale of problem ¹	Level of Concern ²			
		At community level	At zoba/sub zoba level	At National level	
Mainstreaming of the issue of land degradation/desertification into the national policies, projects and programmes.	National	Low	Low	Low	
Strengthening of soil and water conservation activities nation wide.	National	High	High	High	
Expanding fuel substitution programmes.	National	Low	Low	Medium	
Exercising caution in expanding agriculture into dry woodlands and pasture lands.	National	High	Low	Low	
Encourage social forestry and fuel-wood and fodder plantations.	National	High	Low	Medium	
Creating a national database and indicators to monitor, assess and evaluate land degradation and use this as input to an early warning system.	National	Low	Low	Low	
Identification and mapping of the areas affected and/or vulnerable to land degradation.	National	Low	Low	Medium	
Promote awareness both at governmental, non-governmental institutions and community level.	National	Low	Low	Low	
Promotion of participation of local populations, particularly Women and youth.	National	High	Low	Medium	
Identification and use of traditional knowledge and practices in preventing land degradation.	National	High	Low	Low	

UNFCCC Issue Prioritisation Matrix

Issue	Scale of problem ¹	Level of Concern ²			
		At community level	At zoba/sub zoba level	At National level	
Development of National Action Plan on emission abatement of UNFCCC.	National	Low	Low	Medium	
Integration of Climate Change Concerns into National Policy.	National	Low	Low	Low	
Public Awareness & Public Education	National	Low	Low	Medium	
Assessment of Vulnerability of Sectors	National and local	Low	Low	Medium	
Formulation of Adaptation Measures	Local and National	Low	Low	Low	
Introduce proper waste management and treatment measures	National	Low	Low	Low	
Development of Clean Development Mechanism	National	Low	Low	Low	

6.3 Constraints at Systemic Level

According to the GEF guide for self-assessment of country capacity needs for global environmental management (2001)² capacity constraint at systemic level includes the overall policy, economic, regulatory and accountability frameworks within which institutions and individuals operate.

From the survey it was found that 50% of the total interviewee's in Zoba Maekel, 33% in Debub, 22% in Debubawi Keyh Bahri and 12% in Semienawi Keyh Bahri (Stakeholder Analyses, 2005; Annexes 4, 5, 6 and 9; Table 4) mentioned shortage of budget or lack of funds as a major constraint. This shows that large number of the interviewee's in Zoba Maekel stated lack of budget compared to the other three Zobas.

66% of the total interviewee's in Zoba Debub, 33% in Zoba Maekel, 25% in Semienawi Keyh Bahri and 11% in Debubawi Keyh Bahri mentioned lack of approval of environmental laws as a constraint. This means that in Debubawi Keyh Bahri lack of laws or regulations has been given less priority.

In addition the following were also mentioned as constraints at systemic level:

- Lack of coordination and communication between stakeholders and with the Department of Environment, the Ministry of Foreign Affairs for example stated that most of Government officials that travel on foreign missions do not report to the Embassies, hence there is lack of information.
- Lack of awareness of the public,
- Overlap of activities and lack of clear mandate of each organisation,
- Lack of implementation of projects or programmes,
- Lack of evaluation and monitoring,
- Lack of continuity or follow up of started programmes,
- Delay of signing international conventions,
- Lack of baseline information (for example the master plan of Zoba Maekel is not finished),
- Lack of long term planning,
- Lack of decentralization of DoE.

Table 5 shows the constraints ranked by Zobas. The ranking was carried out based on the number of interviewees, who mentioned an issue as a constraint. The response per issue was tallied to give the percentage of ranking. For example in Zoba Maekel 19 institutions out of the 27 interviewed institutions mentioned that shortage of skilled manpower was a major constraint.

Financial constraint is ranked as of second level importance in Zoba Maekel and third level in Zoba's Debub and Debubawi Keyh Bahri, whereas in Semienawi Keyh Bahri it is ranked as fifth. This shows that in Semienawi Keyh Bahri there may either be less financial problem or the interviewee's gave more priority to other issues.

The private sectors mentioned the following constraints at systemic level:

⁴ GEF (2001), A Guide for self-assessment of country capacity needs for global environmental management, Washington DC.

- Market constraint like the Eritrea Textile factory,
- Foreign exchange restriction
- Permit restriction
- Shortage of fuel and raw materials
- Alteration of Regulations now and then

International NGOs pointed out the restriction on work permit of foreigners, deficiency in allowing community ownership of projects were mentioned as constraints at the systemic level.

Table 5. Ranking of Capacity Constraints by Zobas

Ranking	Zoba Maekel	Zoba Anseba	Zoba Gash Barka	Zoba Debub	Zoba Semien Bahri
1 st	➤ Shortage of experts	➤ Inadequate awareness of institutions of environmental challenges	➤ Absence of professional and supporting staff of the DOE	➤ Shortage of experts	➤ Shortage of experts
2 nd	➤ Financial constraint	➤ Cutting of trees for proposes of irrigation, road construction, firewood, and timber	➤ Cutting of trees for proposes of irrigation, road construction, firewood, and timber	<ul style="list-style-type: none"> ➤ Lack of transport ➤ Lack of ratification of environmental laws. ➤ Lack of institutional linkages 	➤ Lack of environmental awareness
3 rd	<ul style="list-style-type: none"> ➤ Poor coordination and communication ➤ Lack of environmental law 	➤ Expansion of commercial farms	➤ Lack of waste management systems	<ul style="list-style-type: none"> ➤ Lack of training on environmental issues, ➤ Financial constraints ➤ Lack of representation of DoE ➤ Lack of awareness ➤ Shortage of transport 	<ul style="list-style-type: none"> ➤ Lack of transportation ➤ Lack of institution linkages
4 th	<ul style="list-style-type: none"> ➤ Lack of monitoring equipments ➤ Lack of facilities such as computers, transportation and communication facilities ➤ Lack of awareness about environmental issues 	➤ Weak institutional linkages, team working and follow-up	➤ Increased new population settlements		<ul style="list-style-type: none"> ➤ Lack of ratification of laws ➤ Lack of communication
5 th	<ul style="list-style-type: none"> ➤ Lack of long term planning ➤ Lack of follow up and evaluation ➤ Lack of ratification of international conventions 	➤ Shortage of professionals, supporting staff and budgets	➤ Weak institutional linkages, and team working		<ul style="list-style-type: none"> ➤ Financial constraint ➤ Lack of law ➤ Lack of support

	➤ Lack of baseline information				
6 th	➤ Lack of DoE representation in Zobas ➤ Lack of training	➤ Absence of Environmental law for enforcement	➤ Absence of environmental law for enforcement		
7 th		➤ Absence of land use classification policy.	➤ Absence of land use classification policy		

6.4 Constraints at Institutional Level

The majority of the interviewee's mentioned that the main constraints at institutional level are lack of office facilities (like computers, offices, plotter etc) or environmental kits or laboratory facilities for analysis. The remaining interviewee's stated the following constraints:

- Lack of a unit/person responsible for environmental issues,
- Lack of representatives of the institutions in zobas,
- Lack of funds. For example the environmental health unit within the Ministry of Health doesn't have a budget,
- Lack of strategic long-term planning,
- Lack of monitoring and evaluation,
- Lack of transportation facilities.

The survey shows that 37% of the interviewees in Zoba Maekel didn't mention institutional issues as a serious problem. These are: Department of Energy, Department of Public Works, NUEYS, Ministry of Agriculture in Zoba Maekel, Chamber of Commerce, Department of Marine Transport, Eritrean Employers' Federation, Department of Industrial Development, Oxfam and LWF. The main reason could be because they rank institutional problems as minor or some of them may not be aware about the scale of the problem.

6.5 Constraints at Individual Level

The survey result shows that the main constraint at individual level is lack of experts and lack of awareness in different environmental issues and this problem varies from zoba to zoba. For example in Zoba Maekel above 50% of the interviewed institutions mentioned that they have serious shortage of skilled manpower, whereas 19% (Oxfam, LWF, Ministry of Agriculture Zoba Maekel, Chamber of Commerce and University of Asmara; Stakeholder Analyses, Annexe 3, 2005) don't have shortage at individual level. The rest either don't give priority to environmental issues or are not aware like Eritrean Employers' Federation. The UN agencies and some international NGOs don't have shortage of manpower at their institution but their partners have serious shortages. The interviewed private sectors also are suffering from the shortage of skilled manpower. On the other hand above 85% of the interviewed institutions in Zoba Debub, Semienawi Keyh Bahri and Debubawi Keyh Bahri (Stakeholder Analyses, 2005; Annexe 4, 5, 6 and 9 and Table 4) stated that they have serious constraint of experts.

The Ministries of Health and Trade and National Union of Eritrean Women mentioned that if the shortage of skilled manpower is solved then the institutional and systemic level constraints could easily be solved. However it should be noted that skilled human resources on their own would not be able to resolve the institutional and systemic constraints.

Some institutions mentioned that the national service staff are not motivated enough to work since they are not paid adequate salary.

6.6 Gaps and Opportunities

6.6.1 Gaps

The main gaps/capacity needs of the various stakeholders are skilled human resources (Table 6). Potential candidates for training in environmental conservation related sciences, as well as in project design implementation and evaluation should be hired and pertinent training in specialised areas should be given. Most of the gaps could be bridged with short-term training, which ranges from few weeks to six months, while other capacity needs could be addressed with long term educational programs.

The other capacity gaps are the legal and regulatory environment. There are legislations, environmental laws, policies, regulations and standards that need to be drafted, approved and implemented. Promulgation of such regulatory framework would open opportunities to ratify, sign and undertake several relevant regional and international conventions and agreements.

The conventions and international agreements would enable the key stakeholders to acquire funds and international assistance in initiating designing and implementing environmental programs and projects.

Moreover there are office and information and communication facilities, laboratories, research materials, and books for libraries and other resources that are required to make best use of available resources.

6.6.2 Opportunities

There are several opportunities for every institution involved in environmental activities related to each thematic area. One of the main opportunities is that many stakeholders are already engaged in different environmental activities and have significant experience in planning, implementing and evaluation of various environmental conservation activities ((Table 6). For instance, the Ministry of Education jointly with the Ministry of Agriculture and Zonal administrations have been conducting excellent work in soil and water conservation by mobilizing students during the summer work program.

The other opportunity is that although further awareness raising campaigns are needed nevertheless there is well-founded awareness, indigenous wisdom and traditional practices among the different Eritrean communities on environmental conservation. Thus new practices and knowledge could be applied on top of these traditional practices.

The third type of opportunity is that many of the staff and experts of the stakeholders have some basic knowledge and skill about the thematic areas and hence their skill could easily be enhanced with some short training. For example the small pool of knowledge and experience in the DoE could be effectively utilised if short term specialised training is given to the staff.

Table 6. Constraints, Gaps and Opportunities

Organisation	Constraints	Gaps	Opportunities
1. Ministry of Public Works	<ul style="list-style-type: none"> • Skilled manpower 	<p>Experts on:-</p> <ul style="list-style-type: none"> • Biodiversity • Archaeology and • Resettlement Issues 	<ul style="list-style-type: none"> • An environmental unit has been set up. • Training young graduate in relevant areas is been carried out.
2. Ministry of Fisheries	<ul style="list-style-type: none"> • Lack of specialists. • Lack of technical know how of fishing. • Lack of monitoring equipment. • Lack of clear mandate to conserve marine and coastal area. • Lack of budget/finance. 	<ul style="list-style-type: none"> • Skilled manpower on fishing technology, pollution control and monitoring. • Electronic monitoring equipments • Patrol control • Lack of mandate of the Fishery Department to conserve biodiversity (must be authorised by the Department of Environment). 	<ul style="list-style-type: none"> • Working with GEF projects, on conserving biodiversity • Proposed protected areas. • Environmental management could easily be harmonized with the Department of Environment. • Rules and regulations could easily be approved and will improve the capacity of the MoFish.
3. NUEYS	<p>The NUEYS has constraints at all levels, however, the interviewees said that environmental issues are not the priority.</p>	<p>Limited involvement of the NUEYS in Environmental projects. So far they don't have a programme except the cleaning day.</p>	<ul style="list-style-type: none"> • Awareness raising and training of NUEYS staff on environmental issues by DOE can enhance sustainability of the environment. • DOE has good relations with all stakeholders and could easily involve them in its activities. • • DOE could fund some environmental projects of other stakeholders as it has the capacity and access to raise funds.

4. Transport and Communication	<ul style="list-style-type: none"> • There is shortage of skilled manpower. • Lack of inspection equipment and laboratory. • Lack of a person responsible for environmental issues. • Lack of regulations and standards. • Lack of awareness of the public. He gave an example that in environmental workshops/seminars nothing is said concerning pollution from vehicles. • Shortage of funds 	<ul style="list-style-type: none"> • The capacity needs in progress • The inspection sector needs a fully equipped mini-laboratory. • Awareness has to be created in all levels. • Department of Environment has to give funds. • DOE did not give emission standards • No future programmes organised. 	<p>Introduction of catalyst and establishing inspection centres could enable the</p> <ul style="list-style-type: none"> • Establishment of emission standards. • There is a plan that new bus terminals be built in the outskirts of the cities, in order to reduce air pollution in the centre of the cities. • DOE has relatively more experts and could easily be strengthened. • DOE could easily give short-term training courses with its available staff. • Considering the DoE's good linkages with the line ministries, the DOE can easily enhance its relationship. • DOE can easily get sponsorship for carrying out environment related studies.
5. Ministry of Health	<ul style="list-style-type: none"> • There is serious human resource constraint. • Shortage of funds. • Lack of equipment to measure air and water quality. • Lack of coordination between of ministries. • DOE is not giving attention to sectors, which are involved in environmental issues. 	<ul style="list-style-type: none"> • Shortage of specialisation on environmental issues. 	<ul style="list-style-type: none"> • Department of Environment could play a leading role in environmental issues. • The DoE can focus its attention for the sectors, which are active in different environmental issues. • The DoE could play a great role in creating awareness (behavioural change). • The DoE has the mandate to take strong preventive measures, • Initiated the establishment of committee's composed of all

			<p>stakeholders to solve environmental problems.</p> <ul style="list-style-type: none"> • There is improved commitment of all stakeholders and the government about the environment.
6. Biology and Geography Departments of the University of Asmara	<ul style="list-style-type: none"> • Lack of funds and research materials. 	<ul style="list-style-type: none"> • Lack of capacity or mandate to access available funds to conduct research. • Human resource development at undergraduate level, short-term training and post-graduate studies. • Lack of participation in alleviating environmental problems. 	<ul style="list-style-type: none"> • The relationship among stakeholders and within stakeholders can easily be strengthened. • DOE as a focal point can strengthen its coordination with other stakeholders such as the University of Asmara.. • DOE can easily play an active and leading role.
7. College of Agriculture Department of Land Resource and Environment	<ul style="list-style-type: none"> • Human resource constraint, which is causing overwork of staff. • Lack of chemicals and facility in the laboratory. • The College does not have land for experiment. • Lack of research funds 	<ul style="list-style-type: none"> • Staff in environmental protection and soil and water conservation. • Delay of chemicals for laboratory • No field experiment. • Lack of funds for research 	<ul style="list-style-type: none"> • There is increasing staff in environmental protection and soil and water conservation. • There is a plan to carry out research on:- <ul style="list-style-type: none"> • Soil resource evaluation • Environmental protection and rehabilitation. • Forest and wildlife resource. • Land degradation
8. Department of Marine Transport Regulation and Standards Unit MOTC	<ul style="list-style-type: none"> • Shortage of skilled man power • Protection of the Red Sea • Lack of communication and coordination between concerned bodies. • Lack of environmental law, hence there is unclear 	<ul style="list-style-type: none"> • Environmental equipment operators • Ratify and implement international maritime conventions such as the Jeddah and Nairobi Conventions. • Lack of approved environmental law. • Lack of training and awareness campaign at the grass root level. 	<ul style="list-style-type: none"> • By ratifying and implementing international conventions such as Jeddah Convention or Nairobi convention, Eritrea can benefit greatly since Eritrea is located in a strategic place. • There are plans to implement a waste

	<p>mandate about the protection of the Red Sea.</p> <ul style="list-style-type: none"> • Shortage of funds. • Lack of awareness about environment at all levels. • Outdated Maritime Code 	<ul style="list-style-type: none"> • Focusing on Legal issues, • Marine Technology • Social issues • Operational issues 	<p>reception facility</p> <p>Department of Marine Transport is in the process of finalizing Port regulation as well as translating the maritime code and enforcing it.</p> <ul style="list-style-type: none"> • Department of Marine Transport can easily enhance the environmental awareness of port communities and identify leading agency for coastal zone management. • Approval of environmental law can enhance the work of the Department of Marine Transport.
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9. Industrial development Ministry of Trade and Industry	<ul style="list-style-type: none"> • Lack of environmental law • Lack of follow up and evaluation of any action plan. 	<ul style="list-style-type: none"> • Experts in policy development and implementation • No Researchers • Experts in industrial projects • Computer scientist • Lack of Monitoring and evaluation 	<ul style="list-style-type: none"> • Sustainable economic development can happen easily by encouraging environs friendly industries to expand to zoba's and locating & specifying industrial zones and parks. • Designing integrated long-term strategy for industrial, mining and agricultural development activities. • Ensuring continuity and sustainability of activities. • The approval of the Environmental law can accelerate its implementation..
10. Ministry of Education	<ul style="list-style-type: none"> • Shortage of geography staff in the panel, (at present there is only one staff member). • Office facilities like computer, internet access • Books available in the library are outdated • Lack of water and toilet s • Lack of awareness • Lack of communication with concerned ministries. 	<ul style="list-style-type: none"> • Increase the staff in the geography panel. • Offices & ICT facilities • Latest books • No improved water supply and sanitation of the office. • Awareness has to be created in all levels. • Working hand in hand with the concerned bodies. 	<ul style="list-style-type: none"> • The MoE is interested to work with the Department of Environment. • MoE has increased the level of staff participation in workshops.
11. Department of Energy, MoEM	<ul style="list-style-type: none"> • The department is understaffed due to low remuneration and low motivation. • Lack of information or database. 	<ul style="list-style-type: none"> • Lack of training priorities, • Hire and train employees on short and long term basis on energy demand side management, Energy utility side management (efficiency), Energy information system 	<ul style="list-style-type: none"> • Expanding electrification to 90 villages during 2005/6. • Studying and piloting wind energy in Asseb. • Replacing old transformers • Assessing environmental impact of

		<ul style="list-style-type: none"> • Employ one energy economist and one planner 	<ul style="list-style-type: none"> • electrification. • Training on environmental management, planning and other regulatory roles. • .
12. Department of Regulatory Services Environmental Quality Division, Forestry and Wildlife unit of MoA	<ul style="list-style-type: none"> • Lack of manpower in different specialization. • Lack of ICT and transportation facilities. • Lack of office facility like computers. • The structure of the department is not filled with human resource. • Lack of legislation on wildlife and forestry. • Lack of land use policy, as a result extended farming is taking place by the army and there is a possibility that this land will degrade. • Lack of ratification of conventions. 	<ul style="list-style-type: none"> • Lack of specialists in land use planning, EIA expert, Irrigation Engineer, Geologies (hydro-geologist), Forestry and Wildlife unit, Forest inventory specialist, Silvi-culturalist, Wildlife expert, Cartographer and ornithologist, environmental law specialist is needed in the division. • Office and ICT facilities • The legislation on wildlife and forestry must be approved. • Other rules and regulations must be approved and implemented. • International conventions must be signed implemented. 	<ul style="list-style-type: none"> • Protecting elephant area is in progress. • Inventorying of tree species in Semienawi Bahri • Training of forest guards and wildlife scout at diploma level will start in Hamelmalo. • Collaborating and working together with Department of Environment will enhance the work of the Department of Regulatory Services.

VII. IDENTIFIED CAPACITY NEEDS

The survey result shows that some institutions articulated their capacity needs, while some didn't know about their specific needs. Some of the capacity needs mentioned by the stakeholders in the Zoba's are as follows:

7.1 Zoba Maekel

Individual level

The stakeholders mentioned the type of experts that need to be employed in their respective organizations. The management based at headquarter offices enumerated the skilled human resources required, however the Zobas have limited themselves to demanding that environmental experts be represented at Zoba level. Some of the stated specializations are as follows:

- Industrial hygiene specialist
- Occupational Hygiene expert
- Biochemist
- Analytical chemist
- Environmental Chemist
- Industrial engineer
- Experts in industrial projects
- Pre-mining specialist
- Mining engineer
- Environmentalist
- Economist
- Biodiversity expert
- Archaeologist
- Resettlement expert
- Data processor (a person who knows CCD indicators like aridity index, so that monitoring and evaluation can take place).
- Experts in policy development and implementation
- Researchers
- Computer /IT specialist

Institutional level

The capacity needs at the institutional level includes:

- Buying office facilities and environmental equipments,
- Establishing environmental units.

Systemic level

The capacity needs mentioned at the systemic level are ranked from more frequently mentioned to less frequently mentioned as follows:

- Communication and coordination between stakeholders,
- Approval of laws and standards,
- DoE has to be autonomous and strong,
- Campaign on raising public awareness,

- DoE has to fund environmental projects of other stakeholders,
- Ratification of international conventions is very important.
- Conduct research before implementation,
- Budget for environment has to be increased.

7.2 Zoba Debub

Individual level

- Training the staff on computer use,
- Training for land unit staff on environmental issues,
- Increase environmental awareness of the staff of the institutions,
- Employ experts of Environmental Science, Plant Science and a Biologist.

Institutional level

- DoE at Zoba level needs to be strengthened

Systemic level

- Enforcement mechanism to be strengthened.
- Early warning of environmental problems and disasters has to be created,
- Ratification of environmental regulations.

7.3 Zoba Semienawi Keyh Bahri

Individual level

- To fulfil the shortage of manpower training of high school graduates should take place,
- Urgent need of EIA training for the staff of the Ministry of Fisheries,
- Train the staff of the Port in ‘good house keeping’ especially related to environmental safety and protection,
- Training of staff about environmental issues and topics concerning industrial pollution since the number of industries is increasing in the Zoba.

Institutional level

- A laboratory for fulfilling EIA requirements specially for terrestrial and marine biodiversity,
- Establishment of an environmental unit.

Systemic level

- Developing a guideline to facilitate daily activities,
- Ratification and enforcement of environmental laws, standards and regulations,
- Prepare guidelines for Environmental Assessment of Coastal Aquaculture, which should be developed by experts,

- Prepare the sectoral Marine and Coastal Environmental Assessment Guidelines and procedures by experts and professionals,
- Determine the national standards of effluents to the sea (nitrate, phosphate...etc).

7.4 Zoba Debubawi Keih Bahri

Individual level

- Training on environmental issues,
- Develop expertise in marine environment,
- CCD expert,
- Soil and water conservation experts,
- Forestry experts,
- Environmental experts,
- Creating awareness in youth (since it is easy to transfer information to the community through Youth).

Institutional level

- Laboratory facilities for the identification of marine pollution caused from ships like ballast water, oil spills and other waste,
- Reception, segregation and recycling facilities for waste and ballast water from ships,
- Books and journals on environmental issues are needed to increase awareness,
- Raising environmental awareness in schools and high school teachers,
- Assigning environmental experts at zoba level, to work with the community as well as governmental institutions.

Systemic level

- There is a need for an institutionalised linkage, especially between the MOF, Assab Port Administration, the Refinery, Eritrean Navy and the town administration, which are closely related to the marine environment. The Assab Port also needs to work in close cooperation with such institutions on marine security and safety,
- Further training on the importance of forestry, wildlife and soil and water conservation for the staff of the institutions, the army and even the community,
- DoE has to give training to the staff of the municipality on environmental issues,
- Develop internal environmental guidelines,
- Allocate enough funds for environmental health committee's by the concerned stakeholders,
- Create linkages with the DoE and empowering the MoLWE by employing professionals,
- Upgrade the knowledge of environmental health policy guideline.

It is believed that capacity building at the individual level will take time although it is the key to solve constraints at systemic level as well as at institutional level. Meanwhile, short-term training has to take place.

7.5 Zoba Gash Barka

Individual level

- Awareness creation at all levels

Institutional level

- Recruit and orient adequate number of staff at the regional level
- Assign a head of the Environmental Unit
- Equip the institution with facilities and provide sufficient resources for field trips, photographing and other services.
- Conduct surveys and disseminate periodic results on environmental issues in the region.
- Zoba administrations to be given full mandate and adequate resources to manage their respective environments.
- Assignment of adequate sanitary experts,
- Equip the town with truck and containers for waste disposal,
- Acquisition of a meat delivery van.

Systemic level

- Resources needed for public awareness campaigns on environmental management.
- Awareness and incentives needed to convince communities that all areas need to be protected by every community in each village.

7.6 Zoba Anseba

Individual level:

- Training to up grade knowledge/ skills of staff as well training in management skills.
- In-house training of national service staff and create incentives to motivate them.

Institutional level:

- Recruit more staff to fulfil shortage of skilled people at sub-zoba level, where the main work exists.
- Increase the number of staff for DoE Unit at Zoba level to cover all environment work in the zoba.
- Create incentive scheme for staff (especially for MOA) in the form of promotion, transfers and skills upgrading.
- Look for funds to acquire transport facilities, which is acute, for the summer soil and water conservation campaign.

- Look for funds to acquire computing, transport, and telecommunication facilities.
- Enhance the skill of the professionals, who can train low-level skilled persons.

Systemic level:

- Ratification and enforcement of environmental laws, standards and regulations for effective protection of the natural resources.
- Enhance effective linkage with relevant government agencies – since there are no meetings or coordinated working relationships at Zoba level.

VIII. WORKSHOP FINDINGS

A workshop was held on Thematic Assessment Study (UNCBD, UNCCD and UNFCCC) National Capacity Needs Self-assessment (NCSA) for Global Environmental Management in Eritrea held at CTTC, University of Asmara, Eritrea on 13-14 February 2006. The main of the workshop was to introduce the project objectives and to get guidance and feedback from the participants as well as to promote a sense of national ownership over the NCSA process.

A separate report has been prepared of the workshop findings. Only a brief synopsis of the findings is reported here.

The contributions, were presented, were grouped into three:-

- Thematic Assessment
- Capacity Building
- Role of Stakeholders

Eight papers were presented, which are listed below:

- | | |
|---|----------------------|
| 1. Aims and Objectives of Workshop | Kidanemariam Hagos |
| 2. Overview of the State of the Environment in Eritrea | Mussie Tesfahiwet |
| 3. CBD Thematic Assessment | Yirgalem Solomon |
| 4. UNFCCC Thematic Assessment | Dr Seife Berhe |
| 5. UNCCD Thematic Assessment | Teodros Habtegiorgis |
| 6. Capacity Needs Assessment on Environmental Issues | Lea Gebreab |
| 7. Development & Management of Human Resources
Capacity on Environmental Issues | Dr Seife Berhe |
| 8. Critical Assessment of the Role of the DOE:
Structure, Human Resource Capacity and Action Plans | Mogos W/Yohannes |

These were followed by extensive input by local communities, the private sector and NGO's based on their perspective on existing environmental issues, realities and challenges.

All the presentations made were presented with the aid of PowerPoint, which was followed by brainstorming discussions. All stakeholders, viewing the subject matter from different angles, have raised questions and comments after each presentation, which were duly answered by the presenters. Summary of the papers presented and details of the questions raised are presented in a separate report.

Two discussion sessions were organised mainly dealing with:-

- **Identifying the issues:-** What are the Constraints, Gaps and Lessons Learned for Achieving Environmental Capacity Building in CBD, CCD & UNFCCC in Eritrea?
- **Identifying Actions** for Improvement of Capacity Building.

During both sessions all the participants have been divided into five groups. During the first session all groups have been asked to assess the constraints, gaps and opportunities to improve the implementation of the Rio Conventions. Each group had elected their own chairperson, who made the plenary presentation, which was followed by discussion.

During the second session the discussion focussed on the possible measures needed to resolve the problems. The different working groups tried to figure out possible action programmes for improving the implementation of the 3 conventions. Findings of each group were summarized and presented for discussion by their representatives. Input of the different stakeholders, which were invited from all stakeholders were highly appreciated. Summary of the findings and the suggested measures as well as Action plans by the different groups are discussed in the enclosed report.

It is important to note that the findings of the nationwide survey, which was carried for the NCSA and had included the Line Ministries, stakeholders at Zoba's level as well as the local communities and private sector were confirmed in the Workshop. However prioritisation of environmental issues was defined in greater detail and depth of feeling for environmental degradation and commitment of the communities to do their part for sustainable development of their areas was emphasised.

IX. CONCLUSIONS

Although a lot of groundwork has already been done towards planning of environmental management, the institutional and technical capacity in planning and implementation of the program has still a long way to go before it achieves its objectives.

Based on the stakeholder analysis and environmental capacity needs the findings can be grouped into three namely individual, institutional and systemic levels:

Individual level

The survey result shows that the main constraint at individual level is lack of experts and lack of awareness about different environmental issues and this problem varies from zoba to zoba. The Zoba's whose capital or main centres of activity are close to Zoba Maekel seem to have fared well. For example over 85% of the interviewed institutions in Semienawi Keyh Bahri and Debubawi Keyh Bahri stated that they have far more serious constraint of experts compared to the other Zoba's.

Institutional level

There is lack of co-ordination of the focal points of all the three conventions. Except for CCD, which has a separate office and staff at the Ministry of Agriculture, neither the CBD nor UNFCCC have a well-established institutional setup. Hence there are capacity limitations in implementing the National Strategy and Action Plans that have been adopted.

There is serious constraint of skilled manpower at all levels especially in the regional offices. For example there is:

- Lack of a unit/person responsible for environmental issues,
- Lack of representatives of the institutions at zoba level.

There is poor coordination and linkages between stakeholders not only at Headquarters level (Zoba Maekel) but also at Zoba and Neus-Zoba level. What is amazing is the fact that even though the expertise at Zoba level is limited they hardly meet or have effective co-ordination among the stakeholders.

Most of the organizations visited do not have funds allocated for environmental work hence they lack basic equipments such as office facilities (computers, offices, plotter etc) or environmental kits or laboratory facilities for analysis as well as transportation facilities to carry out fieldwork.

The fact that there is inadequate strategic long-term planning affects the overall performance of the stakeholders.

Systemic level

Overall the findings have established that there is inadequate policy, regulatory, economic and accountability frameworks within which institutions and individuals operate.

From the survey it was found that shortage or lack of budget is a major constraint that affects institutional development. Even if funds are available there is not the capacity to undertake the projects, and no effective monitoring and evaluation system has been put in place. Consequently all these issues cause lack of continuity or follow up of started programmes.

There is no doubt that lack of approval of environmental laws or regulations has meant that environmental abusers could not be punished or laws could not be enforced across the board. It seems that this issue has been given less priority.

Lack of coordination and communication between stakeholders and with the Department of Environment and overlap of activities and lack of clear mandate of each organisation, has meant that environmental protection cannot continue at the pace required.

There is also lack of awareness of the public across all levels and even the traditional mitigation mechanisms that have been established for generations are also in danger of disappearing completely. The war without doubt has also caused very disturbing levels of environmental degradation all over Eritrea.

Lack of long term strategic planning was also an issue that was widely discussed and interventions seem to be ad-hoc when the problems arise.

Most of the branch offices at Zoba's expect the head office to plan for the regional activities and hence do not at present request a separate budget for regional activities. There is a need to reverse the planning process to come from bottom up.

Opportunities and Prioritisation

There are several opportunities for every institution involved in environmental activities related to each thematic area. One of the main opportunities is that many stakeholders are already engaged in different environmental activities and have significant experience in planning, implementing and evaluation of various environmental conservation activities. For instance, the Ministry of Education jointly with the Ministry of Agriculture and Zonal administrations have been conducting excellent work in soil and water conservation by mobilizing students during the summer work program.

From the Prioritisation Matrix it is clear that the scale of the problems are high, while the level of concern is relatively low across the spectrum. Although there is sufficient capacity albeit at lower level to accomplish the tasks if proper allocation of human resources is made.

Ranking of the issues suggests that strengthening capacity and awareness raising are the most important issues for all parties and across the thematic areas.

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