GLOBAL ENVIRONMENT FACILITY

UNITED NATIONS DEVELOPMENT PROGRAMME

MALAWI
National Capacity Self-Assessment (NCSA)

CAPACITY ASSESSMENT REPORT AND ACTION PLAN FOR ENVIRONMENTAL CAPACITY DEVELOPMENT

September 2007
Final draft report

FOREWORD

In the 1990s, the international community reached unprecedented agreements on the need to protect the global environment. The United Nations (UN) Framework Convention on Climate Change (UNFCCC), the Convention on Biodiversity (UNCBD), and the Convention to Combat Desertification (UNCCD), were negotiated by world leaders and most countries signed these multilateral environmental agreements (MEAs). Malawi signed and became party to all the three MEAs. If implemented effectively, these will contribute significantly to achieving the goals of sustainable development and conservation of natural resources. It has, however, been realized that developing countries need to increase their capacity in order to participate effectively in the global environmental management through the implementation of the MEAs.

In this context, the Government of Malawi, through the Environmental Affairs Department (EAD), received financial support from the Global Environment Facility (GEF) through the United Nations Development Program (UNDP) for implementation of a National Capacity Self Assessment (NCSA) for the Global Environmental Management Project, with the general aim of assessing the national capacity building needs and consolidating initiatives to address the needs for effective and efficient implementation of the three MEAs. The project has facilitated production of three reports on NCSA in the biodiversity, climate change and desertification/land degradation thematic areas.

The three reports were integrated into one report that highlighted thematic and crosscutting priority issues, ongoing and new initiatives and recommended strategies for national capacity development. Specifically, the NCSA focused on identifying synergies among the three Rio Conventions, and suggested strategies for achieving these. Assessment of our capacity needs was carried out at the systemic, national and individual levels. This document is a report on the NCSA, encompassing a synthesis of the three thematic reports and the crosscutting report, culminating in the formulation of an Action Plan for Environmental Capacity Development in Malawi. It is my hope that adequate resources will be made available for the further development and implementation of the Action Plan that has been advanced herein.

Principal Secretary

Ministry of Lands and Natural Resources

ACKNOWLEDGEMENTS

The primary goal of the National Capacity Self-Assessment (NCSA) is to determine national priorities for capacity development to better address global environmental issues. Malawi has undertaken this exercise to analyse the country's strengths, constraints and needs through the completion of three studies that have been done by teams of experts to address each Convention at systemic, institutional and individual levels, as follows: the NCSA on Desertification/Land Degradation thematic area by R.W.S. Nyirenda and L. C. Nkosi; the NCSA on Biological Diversity thematic area by Water Waste and Environment Consultants; and the NCSA on Climate Change thematic area by the Research and Consultancy Unit, Department of Physics and Biochemical Sciences, Malawi Polytechnic. A synthesis of the above three studies to highlight, in particular, thematic and crosscutting priority issues across the Conventions was done by Dr E.Y. Sambo and Mr R.W.S. Nyirenda.

Finally, a team from the Environmental Affairs Department prepared the Action Plan presented in this document. The team comprised Messrs M.K.M. Mwanyongo, B.B. Yassin, E.D. Njewa, C. Tikiwa, S.L. Kamtsitsi, J.M.N. Mkandawire and J.J. Sibale (Mrs). This document also contains the final NCSA report which was synthesized by Dr E.Y. Sambo.

The studies and Action Plan in this document make up part of the Global Environment Management Project funded by the Global Environment Facility (GEF), through the United Nations Development Programme (UNDP). We are very grateful for this support. All the teams that have worked tirelessly on this project are gratefully acknowledged. I also wish to thank the support staff who offered the secretarial and logistical services to the drafting teams.

Director
Environmental Affairs Department

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ACRONYMS AND ABBREVIATIONS

ABS	Access and Benefit Sharing
ADB	African Development Bank
ADB	African Development Bank
ADDs	Agricultural Development Divisions
AEZ	Agro-Ecological Zone
AU	African Union
BARREM	Barrier Removal to Renewable Energy in Malawi
BOC	
BVCs	Beach Village Committees
CAJEA	Coalition of Journalists on Environment and Agriculture
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resources Management
CBOs	Community Based Organisations
CCD	Convention to Combat Desertification
CDM	Clean Development Mechanism
CHM	Clearing House Mechanism
CITES	Convention on International Trade on Endangered Species
COJEA	Coalition of Journalists on Environment and Agriculture
COP	Conference of the Parties
CURE	Coordination Unit for the Rehabilitation of the Environment
DA	District Assembly
DANIDA	Danish International Development Assistance
DDCs	District Development Committees
DESC	District Environment Sub-Committee
DFID	Department for International Development (UK)
DFOs	District Forestry Officers
DHA	Danish Hunters Association
DHRMD	Department of Human Resources Development
DISTMIS	Department of Information, Management and Technology Services
DNPW	Department of National Parks and Wildlife
DoF	Director of Forestry
DoFiCOMPASS	
EAD	Environmental Affairs Department
EDOs	Environmental District Officers
EIA	Environmental Impact Assessment
EMP	Environmental Monitoring Programme
ENRM	Environment and Natural Resources Management
EPAs	Extension Planning Areas
FAO	Food and Agriculture Organization
FD	Forestry Department
FD	Forestry Department
FECO	Forum for Environmental Communicators

FINIDA	Finnish International Development Agency
GEF	Global Environment Facility
GEMP	Global Environmental Management Project
GHG	Greenhouse Gas
GIS	Geographical Information System
GoM	Government of Malawi
GTZ	German Agency for Technical Cooperation
GWAN	
HIPC	Highly Indebted Poor Countries
HIV/AIDS	Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome
HYCOS	
IAS	Invasive Alien Species
IEC	Information, Education and Communication
IGAs	Income Generating Activities
IKS	Indigenous Knowledge System
IPCC	Intergovernmental Panel on Climate Change
JICA	Japanese International Cooperation Agency
LA	Local Assembly
LAN	Local Area Network
LEAD	Leadership for the Environment and Development
LUCF	
M&E	Monitoring and Evaluation
MARDEF	Malawi Rural Development Fund
MASAF	Malawi Social Action Fund
MCCCI	Malawi Chamber of Commerce
MEAs	Multilateral Environmental Agreements
MEET	Malawi Environmental Endowment Trust
MGDS	Malawi Growth and Development Strategy
MERA	Malawi Energy Regulatory Authority
MET	Meteorology Department
MIE	Malawi Institute of Education
MIJ	Malawi Institute of Journalism
MMCT	Mulanje Mountain Conservation Trust
MNSSD	Malawi National Strategy for Sustainable Development
MoA	Ministry of Agriculture
MoEVT	Ministry of Education and Vocational Training
MoUs	Memorandum of Understandings
MOV	Means of Verification
MPRSP	Malawi Poverty Reduction Strategy Paper
MRA	Malawi Revenue Authority
MZUNI	Mzuzu University
NAC	National AIDS Commission
NAP	National Action Plan
NATURE	Natural Resources Conservation Management and Support Programme

NBSAP	National Biodiversity Strategy and Action Plan
NCB	National Coordinating Body
NCCC	National Committee on Climate Change
NCE	National Council on the Environment
NCSA	National Capacity Self-Assessment
NEAP	National Environmental Action Plan
NEFP	
NEP	National Environmental Policy
NEPAD	New Partnership for Africa's Development
NFP	UNCCD National Focal Point
NGOs	Non-Governmental Organisations
NHBG	National Herbarium and Botanic Gardens
NICE	National Initiative for Civic Education
NORAD	Norwegian Agency for Development
NR	Natural Resources
NRA	National Roads Authority
NRCM	National Research Council of Malawi
NSC	National Steering Committee
NSREP	National Sustainable and Renewable Energy Programme
PADELLA	Partnership for the Development of Environmental law and Institutions in Africa
PDFA	Project Development Facility-A
PIU	Project Implementation Unit
PMT	Project Management Team
PMUs	Project Management Units
PROBEC	Programme for Biomass Energy Conservation
PV	Photovoltaic
RAMSAR	Convention for the protection of Wetlands of International Significance
REPN	Regional Energy Planning Network
RETs	Renewable Energy Technologies
SADC	Southern African Development Community
SDNP	Sustainable Development Network Programme
TCE	Technical Committee on the Environment
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VNRCMs	Village Natural Resources Committees
VNRMC	Village Natural Resources Management Committee
VSAT	
WESM	Wildlife and Environment Society of Malawi
WICO	Wood Industries Cooperation Limited

WMO	World Meteorological Organisation
WSSD	World Summit on Sustainable Development

EXECUTIVE SUMMARY

Introduction

The overall aim of this report is to determine priority needs and establish a plan of action in order to develop capacity to meet binding commitments contained in the three Rio Conventions: the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biodiversity (UNCBD) commonly known as CBD, and the Convention on Desertification and Land Degradation (UNCCD) commonly known as CCD. This study was done under the overall framework of the National Capacity Self Assessment (NCSA) whose objectives are as follows:

- To define Malawi's priority issues and capacity constraints;
- To determine what the capacity needs are in order to address those constraints, in the Malawian Context, in the Climate Change, Biodiversity and Desertification/ Land Degradation thematic areas;
- To identify what capacities exist, are in short supply or ill-deployed; and
- To determine where capacity may be lacking within the country and how it may be developed.

Methodology

An approach used in this study for the synergistic assessment across the three conventions was to examine the identified national priority issues in the three thematic areas with regard to MEA obligations, country priorities, and intersections between the two. Thematic areas in each Convention are covered in specific articles. Some of these areas are as follows: National inventories; Examination of obligations and assessment of implementation; Reporting by Parties to COP; National and regional action programs/plans; Identification and monitoring; Protected areas; Legislation; Financial mechanisms; Public education; Public participation; Research; Information exchange; Data collection; Scientific studies; Technology transfer and cooperation; Training; Environmental assessment; and Personnel training and retraining. A number of these areas overlap across Conventions, thus enabling an analysis to identify priority crosscutting capacity strengths, constraints and needs, as well as priority opportunities for linkages and synergies.

Issues and strategies for addressing them

The prioritisation exercise produced sixteen issues that were crosscutting and weighted strongly as of national concern. Of the sixteen issues, deforestation was recognized as the most serious crosscutting issue and therefore dealt with separately.

Using the matrix method, the remaining fifteen issues were categorized at systemic level (2 issues), institutional level (11) and individual level (2). Based on these crosscutting issues, a number of strategies have been proposed to address synergistic initiatives. These strategies fall under the following objectives:

Summary of Issues, Objectives and Strategies to address them

Issue	Objective	Strategy	Level
1. Inadequate public awareness	1. Promote public awareness to implement the three conventions	1.1 Strengthen the communication unit of institutions such as EAD, FD, MoA 1.2. Develop and improve the capacity of media houses and relevant programmes 1.3. Strengthen and expand the environmental curricula at the school system at all level	Institutional
2. Inadequate skilled or trained manpower	2. Strengthen the individuals and institutional capacity in the implementation of the conventions	2.1. Build relevant skills of individuals in areas such as inventory management, monitoring and integrated assessment 2.2. Build capacity of all relevant institutions at all various levels on the three thematic areas:	Individual
3. Weak community participation in the conservation and sustainable management of ENRM	3. Promote community participation in ENRM	3.1 Strengthen multisectoral forums to address the three conventions 3.2 Strengthen Local Govern. Institutions at DA level	Institutional
4. Inadequate Availability and poor accessibility to data and information	4. Promote availability and accessibility to data and information on the three thematic areas	4.1 Develop and promote Environmental Information Management Systems	Institutional
5. Lack and or Weak enforcement of relevant laws and	5. Develop and strengthen enforcement of	5.1 Formulate/develop some ENRM legislation	Systemic

Issue	Objective	Strategy	Level
legislation	relevant environment law and legislation		
6. Inadequate access to relevant technologies	6. Improve access to appropriate technologies	6.1 Strengthen extension services of the public and NGO agencies 6.2 Strengthen the adoptive research capacity or research institutions	Institutional
7. Inadequate mechanisms to regulate benefit sharing	7. Promote/strengthen regulatory mechanisms to ABS	7.1 Increase capacity to implement co-management arrangements	Institutional
8. Inadequate awareness and utilization of indigenous knowledge systems	8. Promote integration of awareness and utilization of IKS into convention programmes	8.1 Strengthen linkages with government, NGOs, academic, CBOs	Institutional
9. Conflicting policies and Legislation	9. Harmonise ENRM polices and legislation	9.1 Strengthen collaboration and coordination among ENRM sectors	Systemic
10. Limited incentives for public sector staff coordinating/implementing the Rio conventions	10. Enhance the morale of public sector staff	10.1 Introduce incentives scheme for public sector staff	Individual
11. Lack of synergies in research activities (lack of coordination of research related to articles of the three conventions)	11. Improve synergies in research activities between research and policy	11.1 Promote collaborative research	Institutional
12. Inadequate and or unsustainable financing mechanism	12. Improve financial resource base to implement the conventions	12.1 Expand financing sources for the existing funding framework	Institutional
13. Weak	13. Improve	13.1 Promote joint	Institutional

Issue	Objective	Strategy	Level
institutional linkages amongst focal points and between focal points and executing agencies	institutional collaboration among focal points and executing agencies	programmes amongst the conventions	
14. Inadequate or lack of infrastructure	14. Improve access to appropriate infrastructure for implementation of the conventions	14.1 Determine specific infrastructure requirements	Institutional
15. Inadequate capacity to generate appropriate alternative livelihoods to ENRM	15. Promote access and utilize appropriate alternative livelihoods	15.1 Promote the integration of alternative livelihoods in programs of the conventions	Institutional
16. Excessive deforestation	16. Reduce deforestation and rehabilitate graded lands	16.1 Devise mechanisms that will allow for the use of product prices that give a true reflection of resource scarcity 16.2 Introduce or revise management plans to truly address current situation requirements 16.3 Increase budgetary allocations to all sectors dealing with deforestation related programs 16.4 Promote intra and inter sectoral collaboration in forest management	Institutional

The Action Plan for Environmental Capacity Development detailed in this report was based on the above strategies.

Deforestation as a major crosscutting issue

Malawi has the highest rate of loss of tree cover in the SADC region, running at 2.8% per annum. The analysis has revealed that deforestation is one of the major causes of priority issues identified within a thematic area. Such effects of deforestation are in two stages; primary and secondary. Within the primary stage are issues such as: degradation or loss of ecosystems; water resource depletion or degradation through siltation or chemical

pollution; threat to, degradation and/or loss of biodiversity; climate change and variability; and soil erosion and soil fertility decline. Within the secondary stage, a number of priority issues at primary level have affected a number of priority issues at secondary stage. For example, the degradation or loss of ecosystems has a negative effect in encouraging the introduction of invasive alien species; an increase of threatened species and populations; and a threat to biosafety. On the other hand, climate change and variability has a negative influence through precipitation change and temperature rise, as well as leading to an increase in wind speed and wind violence with its devastating effects on the environment.

The unique problems posed by deforestation have necessitated specific strategies whose actions are meant to arrest the excessive rate of deforestation in Malawi.

Implementing the Action Plan

In summary, it is recommended as follows:

- Seek and obtain high-level political support and managerial endorsement;
- Seek funding to finance an implementation structure;
- Joint work programmes at the national level should be formulated between the conventions;
- A Joint liaison group of the three Rio conventions and potential additional members from other MEAs should be formed with an open and flexible coordination framework.
- Joint activities should be planned taking into account the following elements:
    - Integration of activities related to national biodiversity strategies and action plans with national action programmes for the Convention to Combat Desertification, national adaptation programmes of action under the United Nations Framework Convention on Climate Change, Ramsar wetland policies, CITES programmes and other relevant programmes, including national strategies for sustainable development and poverty reduction;
    - Capacity-building (including MEAs negotiations), information systems (harmonize information mechanisms into one common mechanism), institutional arrangements and joint planning activities between the coordinating bodies and focal points of the conventions;
    - Development of criteria for synergy projects and development and application of "good practice" synergy projects at the national level. Identify and implement pilot projects taking into account the three conventions' objectives and perpetuate synergetic actions through the diffusion of successful initiatives;
    - Extend biodiversity Clearing-House Mechanism to other conventions which will allow integrated management of development initiatives;
    - Sound preparation, formulation of objectives, organization and follow-up of national synergy workshops;
    - Training courses and awareness-raising among relevant stakeholders, focusing on policy makers in order to favour the integration of the conventions' objectives in the national socio-economic development plans. These training sessions and workshops should address funding procedures;

- Consultation, decision-making and implementation processes with the full participation of relevant stakeholders, including local communities, non-governmental organizations and the private sector.

CHAPTER 1. INTRODUCTION

1.1 Background

1.1.1 Context

Human interference in the natural environment has increasingly been recognised to have the potential to undermine the sustainability and development of system processes that support livelihoods and the global diversity upon which they rely. The United Nations Conference on Environment and Development (UNCED) (also called Earth Summit), held in Rio de Janeiro, Brazil, in June 1992, offered an opportunity for world leaders to consider international laws for managing natural resources and their processes, in a new, integrated approach to the problem, emphasizing action to promote sustainable development at the community level.

The three multi-lateral environmental conventions agreed at the summit were the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (the UNCBD or the CBD), and the United Nations Convention to Combat Desertification (UNCCD). In addition, there are many other regional and international agreements and conventions have come into force. Malawi is signatory to all these.

It has, however, been commonly recognised that each one of the conventions makes additional demands on the capacity of participating countries, thus in order to implement the conventions, there is need for capacity development. In this context, in May 1999, the GEF Council approved a strategic partnership between the GEF Secretariat and UNDP to formulate a comprehensive, strategic approach to developing capacities to meet the global environmental challenges. In September 2001, the Global Environment Facility established a new source of funds to support this partnership, the National Capacity Self-Assessment (NCSA), to assist developing countries and economies in transition to assess capacity to meet requirements under the three conventions.

Malawi has carried out the NCSA. This report summarises the findings and presents the Action Plan for capacity development.

1.1.2 What was done?

Implementation process of the NCSA Project was guided by a set of key principles drawn by GEF from experiences of various countries. The principles are:

- Ensuring national ownership, leadership and policy commitment;
- Utilising existing co-ordinating mechanisms and structures where appropriate;
- Making use of provisions and obligations of the conventions;
- Promoting comprehensive participation;
- Adopting a holistic approach to capacity building; and,
- Adopting a long-term approach to capacity building within the broader sustainable development context.

The NCSA Project was implemented over a period of about 24 months after the effective start date of 1st October 2004 but nearly 36 months after the signing of the PDFA (Project Development Facility-A) in October 2003. Three strategies were used to facilitate execution of the NCSA Project. These included:

- establishment and operationalisation of project implementation structures and mechanisms;
- stakeholders' meetings and workshops; and,
- engagement of consultants.

Project structures and mechanisms were instituted to facilitate its implementation. These included a Project Implementation Unit (PIU), National Steering Committee (NSC) and Project Management Team (PMT).

The PIU was established to facilitate project implementation by carrying out day to day and periodic activities. The activities involved preparing annual and quarterly work plans and budgets, facilitating meetings of National Steering Committee to review and approve the work plans and budgets before submission to UNDP for funding and providing guidance to the PIU through review of progress reports. PMT meetings were held when need arose for technical advice.

National and international consultants were engaged to provide technical expertise for the NCSA processes in accordance with the Public Procurement Act 2003 and UNDP guidelines. National consultants were engaged to facilitate consultations and preparation of three thematic and one cross-cutting NCSA reports. The consultations facilitated participation of governmental and non-governmental organisations, the private sector and communities in the preparation of NCSA reports. An international consultant was engaged to independently review the NCSA process and reports.

Several meetings and workshops were conducted to sensitise stakeholders on the NCSA process, solicit their active participation in the process and review thematic and cross-cutting reports as well as action plan resulting from the NCSA process. These processes resulted in the realisation of outputs/outcomes that are presented in the following sub-section.

1.1.3 Objectives of Malawi's NCSA

The NCSA is concerned with a country's capacity – the abilities of individuals, groups, organisations and institutions to address the priority environmental issues as part of efforts to achieve sustainable development. The NCSA is an opportunity to systematically assess priority needs and prepare a national **capacity development** plan – the objectives and actions required to improve the ability of individuals, institutions and systems to make and implement decisions, and to perform functions in an effective, efficient and sustainable manner.

The main objective of the project was, therefore, to assess national capacity building needs in order to consolidate initiatives to address the needs for effective and efficient

implementation of the three environmental conventions. From the main objective three specific objectives were framed. These were to:

- Strengthen institutional framework and mechanisms for national capacity self-assessment of priority issues within and across the thematic areas of biodiversity, climate change and desertification/land degradation to protect the national and global environment;
- Conduct national capacity self-assessment of capacity needs for addressing priority issues within and across the thematic areas of biodiversity, climate change and desertification/land degradation to protect the national and global environment; and,
- Formulate a national capacity development plan/programme for addressing priority issues within and across the thematic areas of biodiversity, climate change and desertification/land degradation to protect the national and global environment.

1.1.4 Report structure

The report is divided into three chapters including this introduction which presents the rationale to the exercise, and the context with reference to the obligations and commitments of the three conventions. Chapter 2 deals with the NCSA process while Chapter 3 presents the Action Plan for environmental capacity development. A number of Annexes are appended to the report to provide various peaces of information.

1.2 Obligations and commitments of the three Rio Conventions

The articles of the three Rio conventions set out the legal and operational framework of these multi-lateral environmental agreements. Looking at synergy opportunities for their implementation, a number of commonalities in the commitments made by parties to the Rio conventions are apparent (Table 1). For example, all three agreements contain provisions on research, exchange of information, training, public education, capacity building, participation and awareness. Other requirements shared by the three conventions include national and regional plans and action programmes, legislation and reporting. Although theme-specific inputs will be required under each convention, certain similarities of structural, institutional and supportive nature are evident. To implement these provisions, parties have established specific mechanisms for each of the conventions. It is now widely recognized that identifying and developing opportunities for synergy among the various instruments, and finding ways to coordinate and harmonize complementary or overlapping activities can ensure success in the implementation of the agreements and maximize outcomes, especially at the national level.

(Source: UNEP. (2004). Regional workshop for Africa on synergy among the Rio conventions and other biodiversity-related conventions in implementing the programmes of work on dry and sub-humid lands and agricultural biodiversity (Gaborone, 13-17 September 2004)

Table 1. Indicative list of complementary provisions in the Rio Agreements.

	UNFCCC	CBD	UNCCD
National Inventories/Identification and Monitoring	Article 4.1(a)	Article 7	Article 16
National & Regional Plans	Article 4.1(b)	Article 6(a)(b)	Article 9,10

Legislation	Preamble	Article 8(k)	Article 5(e)
Research	Article 5	Article 12(b)	Article 17,19 (b)
Public Education	Article 6	Article 13	Article 5(d),19,6
Environmental Impact Assessment	Article 4.2(d)	Article 14	
Clearinghouse for exchange of technical information	Article 7	Article 17, 18	Article 16
Public Participation	Article 6 (a)(iii)	Article 14.1 (a)	Article 19(3)
COP/ assess implementation	Article 7	Article 23	Article 22
Training	Article 6	Article 12(a)	Article 19
Reporting	Article 12	Article 26	Article 26
Examine obligations-assess implementation	Article 7 (e)	Article 23	
Financial resources and financial mechanism	Article 11	Article 20, 21	Article 20
Technology transfer and cooperation	Article 4	Article 16, 18	Article 12, 18

Source: UNDP, 1997. Synergies in national implementation - the Rio Agreements. Based on the outcomes of an expert meeting on synergies among the Conventions on Climate Change, Biological Diversity, Desertification and Forest Principles, Sede Boqer, Israel, 17-20 March 1997

1.2.1 Obligations and commitments of the UNFCCC

The ultimate objective of the United Nations Framework Convention on Climate change (UNFCCC) and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Malawi signed the UNFCCC at the Rio summit in June, 1992 and ratified it in 1994. Under the UNFCCC falls the Kyoto Protocol, an important subsidiary legal instrument which makes major demands on capacity. The Kyoto Protocol was opened for signature on 16 March 1998 and entered into force on 16 February 2005. Malawi ratified the Kyoto Protocol in 2002. The main focus of the Kyoto Protocol is the establishment of legally binding emission limitations or reduction commitments for the six main greenhouse gases (CO_2, CH_4, N_2O, HFC_2, PFCs, SF_6,) for developed country Parties under the UNFCCC.

As a signatory to the UNFCC, there are specific commitments and obligations pertaining to global environmental management which Malawi has assumed and for which capacity needs must be fulfilled: These can be considered in the following areas:

- Develop, periodically update, publish and make available to the Conference of the Parties 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 (Article 12);

- 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;
- Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;
- Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all 11 greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;
- Cooperate in 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 rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods;
- 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 on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change;
- Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;
- Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;
- Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations; and
- Communicate to the Conference of the Parties information related to implementation, in accordance with Article 12.

As a signatory to the Kyoto protocol, Malawi has these commitment as per article 10 of the protocol: All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in

order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7, of the Convention, shall:

- Formulate, where relevant and to the extent possible, cost-effective national and, where appropriate, regional programmes to improve the quality of local emission factors, activity data and/or models which reflect the socio-economic conditions of each Party for the preparation and periodic updating of 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, and consistent with the guidelines for the preparation of national communications adopted by the Conference of the Parties;
- Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change:

Such programmes would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change; and Parties included in Annex I shall submit information on action under this Protocol, including national programmes, in accordance with Article 7; and other Parties shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emissions, and enhancement of and removals by sinks, capacity building and adaptation measures;

- Cooperate in the promotion of effective modalities for the development, application and diffusion of, and take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries, including the formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain and the creation of an enabling environment for the private sector, to promote and enhance the transfer of, and access to, environmentally sound technologies;
- Cooperate in scientific and technical research and promote the maintenance and the development of systematic observation systems and development of data archives to reduce uncertainties related to the climate system, the adverse impacts of climate change and the economic and social consequences of various response strategies, and promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation, taking into account Article 5 of the Convention;
- Cooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programmes, including the strengthening of national capacity building, in particular human and institutional capacities and the exchange or secondment of

personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change. Suitable modalities should be developed to implement these activities through the relevant bodies of the Convention, taking into account Article 6 of the Convention;

- Include in the national communications information on programmes and activities undertaken pursuant to this Article in accordance with relevant decisions of the Conference of the Parties; and
- Give full consideration, in implementing the commitments under this Article, to Article 4, paragraph 8, of the Convention.

1.2.1.1 *Overview of Status of implementation of UNFCCC*

The following are the main programmes, plans, policies/legislatin and studies that have been put in place to address these obligations in Malawi:

- National Energy Policy (2003)
- Energy Regulation Act (2004)
- Rural Electrification Act (2004)
- National Environmental Action Plan (1994)
- Liquid Fuels and Gas Supply Act (2004)
- Malawi's new Constitution (May 1995) addresses environmental management
- Environment Management Act (1996)
- Forestry Act (1997)
- Malawi's Inventory of Greenhouse Gas Emissions and Sinks (for 1990) 1997
- Systematic Reporting and Observations
- UNFCCC Initial National Communication
- National Adaptation Plan of Action
- Climate Change Mitigation/Abatement Analysis for the Energy, Agriculture and Land Use Change and Forestry Sectors
- Vulnerability and Adaptation Assessment Report, 2001
- Barrier Removal to Renewable Energy in Malawi (BARREM) Project,
- Programme for Biomass Energy Conservation (PROBEC),
- National Sustainable and Renewable Energy Programme (NSREP),
- Malawi Rural Electrification Programme (MAREP),
- SADC Regional Energy Planning Network (REPN) project,
- SADC Industrial Energy Management project,
- Study on Assessment of Alternative Energy Sources in Malawi.
- Electricity Act

1.2.1.2 *Overview of issues/constraints in the implementation of UNFCCC*

Table 2 presents an overview of the issues/constraints. These have not been categorized into systemic, institutional and individual levels. A more detailed discussion is given in Chapter __ with regard to capacity issues.

Table 2: Prioritised issues/constraints and relevant UNFCCC provisions

No.	Issue/Constraint	Relevant article in UNFCCC and Kyoto Protocol
1	Inadequate water availability during droughts and dry spell periods	UNFCCC article 4e
2	Inability of the agricultural sector to cope during droughts	UNFCCC article 4e
3	Poor funding for institutions	UNFCCC article 3 (5)
4	Lack of capacity of rural communities to cope with floods and mudslides	UNFCCC article 4e
5	Inadequate hydroelectric power generation during droughts	UNFCCC article 4e
6	Lack of research and systematic observation	UNFCCC article 5a,b
6	Inability of government to respond to floods	UNFCCC article 4e
7	Inability of government to access Clean Development Mechanism funds and assistance from developed country parties to the UNFCCC	Kyoto protocol article 10c, article 12
8	Inability of communities to assimilate new technologies aimed at mitigating climate change	UNFCCC article 4e
9	Poor enforcement of laws pertaining to forestry and energy	UNFCCC article 4c, Kyoto protocol article 2 (1a)
10	Inadequate training in climate change related areas in tertiary education	UNFCCC article 6
11	Poor collaboration among NGOs that deal with climate change related issues	UNFCCC article 4i
12	Inability of communities to assimilate new technologies aimed at mitigating climate change	Article 4c
13	Increased occurrence of waterborne diseases during floods	Article 4e
14	Lack of capacity of the fisheries sector to cope with droughts	UNFCCC Article 4e
15	Inability of the agricultural sector to cope with variations in rain seasons	UNFCCC article 4e, f
16	Inability of wildlife to cope with droughts	UNFCCC article 4e, f
17	Increased risk of forest fires during droughts	UNFCCC article 4e, f
18	Inability of some wildlife species such as **Nyala**	UNFCCC article 4e, f

	to cope with heat stress	
19	Increased heat stress related diseases	UNFCCC article 4e, f
20	Lack of critical appraisal of projects in NGOs	UNFCCC article 4i
21	Inability of the electric generation sector to cope with increased siltation that arises from floods	UNFCCC article 4e

1.2.2 Obligations and commitments of the UNCBD

The United Nations Convention on Biological Diversity (the UNCBD or the CBD) provides a framework for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding".

The Convention has adopted a detailed inclusive definition to cover all aspects – from genetic resources to species and ecosystems, with the overarching aim of ensuring conservation and sustainable use of natural resources. The CBD is the first Convention to recognize that conserving biological diversity is "a common concern of humankind" and fundamental to sustainable development.

The CBD was one of the two original agreements opened for signature at the Rio summit in June 1992. It entered into force on 29 December 1993. Malawi signed the CBD at the Rio summit in June, 1992 and ratified it in 1994. Therefore, Malawi has both national and international obligations to implement the CBD.

In particular, the convention calls on countries to integrate the objectives into national and regional development plans, policies, programmes, and strategies. The CBD calls for specific policies, strategies, and solutions to mitigate the loss of biological diversity and encourages countries to act in the following areas that reflect commitments and obligations:

- Conservation of ecosystems and natural habitats and the protection and restoration of populations of species in and outside their natural habitats;
- Sustainable use of biological resources;
- Identification and monitoring of biodiversity;
- Exchange of information relevant to the conservation and sustainable use of biological diversity;
- Technical and scientific cooperation for meeting the objectives of the Convention;
- Incentives for economically and socially sound conservation and sustainable use of biological diversity;
- Research and training on the identification, conservation and sustainable use of biodiversity;
- Public education to raise awareness about the importance of biodiversity;

- Impact assessments of proposed projects that are likely to have significant adverse effects on biodiversity;
- Access to genetic resources and fair and equitable sharing of the benefits of their utilization;
- Transfer of technology among parties to the Convention to promote the conservation and sustainable use of biodiversity;
- Handling of biotechnology to ensure the safe transfer, handling and use of genetically modified organisms;
- National reporting to the Conference of the Parties on the effectiveness of measures taken to implement the Convention.

1.2.2.1 *Overview of Status of implementation of UNCBD*

The following are the main programmes, plans and studies that have been put in place to address these obligations in Malawi:

The Consultants identified national biological diversity issues through review of existing policy/ legislation and the draft NBSAP 2005. The policies/ legislation reviewed included the following:

- Agricultural and Livestock Development Strategy and Action Plan (SAP) 1995
- Mulanje Mountain Biodiversity Conservation Trust 1995
- Malawi Poverty Reduction Strategy Paper (MPRSP) 2003
- Malawi Growth and Development Strategy (MGDS)
- The Constitution of the Republic of Malawi, 1995
- National Forestry Programme 2000
- National Environmental Policy (NEP), 2004
- The Environment Management Act, 1996
- Biosafety Act, 2002
- Malawi National Strategy for Sustainable Development, 2004
- National Biodiversity Strategy and Action Plan, 2005
- Sectoral policies//legislation including the National Forestry Policy 1996, the Forestry Act 1997, The Land Act 1965, The Water Resources Act 1969, The Fisheries Conservation and Management Act 1997, Wildlife Policy 2000, National Fisheries and Aquaculture Policy 2001.
- First National Report to the Convention on Biological Diversity

1.2.2.2 *Overview of issues/constraints in the implementation of UNCBD*

Table 3 presents an overview of the issues/constraints. These have not been categorized into systemic, institutional and individual levels. A more detailed discussion is given in Chapter 2 with regard to capacity issues.

Table 3: Priority Issues/constraints and relevant CBD Provisions

No.	**Issue/Constraint**	**Relevant Article in CBD**
1.	Inadequate appropriate measures for *in situ* and *ex situ*	Article 6, 8a,

	conservation of biodiversity	8b, 8d, Article 9a – e,
2.	Increasing numbers of threatened species and populations	Article 3, 6b, 8k, 10a
3	Increasing spread of invasive species	Article 7a, 7b, 7c, 8h
4	Inadequate capacity to conduct research in biodiversity	Article 12b
5	Inadequate capacity to deal with issues relating to biotechnology such as safe use, monitoring, evaluation and research	Article 8g, 17, 19
6	Inadequate legislation to deal with issues relating to access to biological resources and fair and equitable sharing of benefits arising from the use of the biological resources	Article 10a, 10b, 15
7	Poor exchange of information and knowledge on biological diversity	Article 17, 8j, 12b,18
8	Inadequate integration of biological diversity issues within the national priority development programmes	Article 14
9	Inadequate enforcement of legislation on implementation of programmes and projects leading to adverse impacts on biodiversity	Article 14a-e
10	Poor community participation in the conservation and sustainable utilisation of biological diversity	Article 6 and 8j
11	Inadequate capacity to identify, monitor, evaluate and manage biodiversity	Article 12a
12	Inadequate funding for biodiversity related activities/projects/programmes	Article 20
13	Low capacity to access financial resources provided via the financial mechanism of the Convention	Article 21
14	Lack of innovation to translate research results into tools for managing biodiversity	Article 12b
15	Weak linkage between research results and policy formulation	Article 12b
16	Unsustainable implementation of programmes	Article 12a

1.2.3 Obligations and commitments of the UNCCD

Desertification is defined as land degradation in arid, semi-arid and dry-sub-humid areas resulting from adverse natural and/or human activities. One of the most significant agreements reached at the Rio Summit in June 1992 was the decision to elaborate an international Convention to Combat Desertification (UNCCD or CCD). The CCD was adopted in Paris on 17 June 1994. The convention entered into force on 26th December 1996. The objective of CCD is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.

Malawi ratified the CCD on 13th June 1996 in recognition of almost 3 million hectares of semi-arid and dry sub-humid lands stretching the Rift Valley Floor from Karonga to Nsanje and some parts of Mzimba, Chiradzulu, Mwanza and the Phalombe Plain. The convention specifies the following as some of the obligations and commitments:

- Design and implementation of programmes to combat desertification and/or mitigate the effects of drought are taken with the participation of populations and local communities and that an enabling environment is created at higher levels to facilitate action at national and local levels; improve cooperation and coordination at sub-regional, regional and international levels, and better focus financial, human, organizational and technical resources where they are needed; develop, in a spirit of partnership, cooperation among all levels of government, communities, non-governmental organizations and landholders to establish a better understanding of the nature and value of land and scarce water resources in affected areas and to work towards their sustainable use (Art.3);
- Provide an enabling environment by strengthening, as appropriate, relevant existing legislation and, where they do not exist, enacting new laws and establishing long-term policies and action programmes (Art. 4);
- Establishment and/or strengthening, as appropriate, of early warning systems, including local and national facilities and joint systems at the sub-regional and regional levels, and mechanisms for assisting environmentally displaced persons; strengthening of drought preparedness and management, including drought contingency plans at the local, national, sub-regional and regional levels, which take into consideration seasonal to inter-annual climate predictions; establishment and/or strengthening, as appropriate, of food security systems, including storage and marketing facilities, particularly in rural areas; establishment of alternative livelihood projects that could provide incomes in drought prone areas; and development of sustainable irrigation programmes for both crops and livestock (Art 10);
- Enhance national climatological, meteorological and hydrological capabilities and the means to provide for drought early warning; promote policies and strengthen institutional frameworks which develop cooperation and coordination, in a spirit of partnership, between the donor community, governments at all levels, local populations and community groups, and facilitate access by local populations to appropriate information and technology; provide for effective participation at the local, national and regional levels of nongovernmental organizations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organizations, in policy planning, decision-making, and implementation and review of national action programmes (Art. 10);
- Strengthening training and research capacity in the field of desertification and drought by establishing and/or strengthening support and extension services to disseminate relevant technology methods and techniques more effectively (Art. 19);
- Effective operation of existing national institutions and legal frameworks and, where necessary, creation of new ones, along with strengthening of strategic

planning and management; and by means of exchange visitor programmes to enhance capacity building in affected country; through a long-term, interactive process of learning and study conduct, and competent intergovernmental and non-governmental organizations, for an interdisciplinary review of available capacity and facilities at the local and national levels, and the potential for strengthening them (Art 19);

- Full participation at all levels of local people, especially women and youth, by training field agents and members of rural organizations in participatory approaches for the conservation and sustainable use of natural resources; by fostering the use and dissemination of the knowledge, know-how and practices of local people in technical cooperation programmes, by adapting relevant environmentally sound technology and traditional methods of agriculture and pastoralism to modern socio-economic conditions (Art. 19);
- Strengthen the capacity of affected developing country by providing appropriate training and technology in the use of alternative energy sources, particularly renewable energy resources, aimed particularly at reducing dependence on wood for fuel (Art. 19); and
- Develop and implement programmes in the field of collection, analysis and exchange of information through innovative ways of promoting alternative livelihoods, including training in new skills; by training of decision makers, managers, and personnel who are responsible for the collection and analysis of data for the dissemination and use of early warning information on drought conditions and for food production (Art. 19).
- Make appropriate financial allocations from national budgets consistent with national conditions.
- Identify and mobilize new and additional national financial resources and expand as a matter of priorities, existing national capabilities and facilities to mobilize domestic financial resources.
- Continually provide the UNCCD Secretariat with an update of progress made in the implementation of the Convention at the country level.

1.2.3.1 *Overview of Status of implementation of UNCCD*

To facilitate CCD implementation in the country, more than 15 Acts and laws have been passed that relate to the Convention. The following are the main programmes, plans, policies/legislation and studies that have been put in place to address these obligations in Malawi:

- National Environmental Policy 1996 (revised 2004)
- The Environment Management Act 1996;
- Forestry Act 1997;
- National Water Policy 1999;
- National Action Programme (NAP) for CCD 2000
- The four Acts in the Energy Sector i.e. the Energy Regulation Act, the Rural Electrification Act, the Electricity Act, and the Liquid Fuels and Gas Production and Supply Act, all approved in 2004; and
- The Agriculture and Natural Resources Master Plan of 1999, especially as this relates to land resource conservation.

- Partnership agreements are yet to be concluded or initiated within the CCD framework to enhance the implementation of the NAP. Though not specific to the NAP process, there are some partnerships dealing with issues of concern to NAP.

At sub-regional level, Malawi is a member of the Southern African Development Community (SADC). Within this regional framework, there are a number of initiatives relating to the implementation of the convention, the major one being cooperation in areas such as integrated river basin management, trans-boundary natural resource management and regional environmental programmes. At the regional level, there is anticipated cooperation during the operationalization of the environmental strategies under the New Partnership for Africa's Development (NEPAD) initiative of the African Union (AU) to which Malawi is a member.

Various organizations and donor agencies are directly or indirectly involved in the CCD initiative in the country. Donor agencies include: JICA, NORAD, DFID, EU, FINIDA, DANIDA, USAID, GTZ, the World Bank and the African Development Bank (ADB). Other support organizations include NGOs such as the Wildlife and Environmental Society of Malawi (WESM), the Malawi Environment Endowment Trust (MEET), the Mulanje Mountain Conservation Trust (MMCT), and the Government.

In Malawi, the CCD is coordinated by the National Coordinating Body (NCB) represented by fifteen stakeholders from Government, NGOs, CBOs and the Private sector. The National Focal Point (NFP) is the Director of Forestry with the mandate to operate as the NCB's secretariat. Since Malawi ratified the Convention to Combat Desertification (CCD) in 1994, she became party to all its obligations. Therefore, Malawi has both national and international obligations to implement the Convention.

In line with the demands and specifications of Articles 9 and 10 of the Convention, Malawi elaborated and adopted a National Action Plan (NAP) in 2000. The elaboration was steered by a National Steering Committee (NSC) which, at that time comprised of Public Sectors of Environment; Forestry; Agriculture and Livestock; Water; Energy; Meteorology; Gender, Youth and Community Services; Information; Non Governmental Organizations (NGOs); Coordinating Unit for the Rehabilitation of the Environment; Private Sector and the United Nations Development Program (UNDP). Consultative meetings were conducted in all the 27 District Assemblies involving various stakeholders such as District Development Committees (DDCs). DDC membership comprises Line Ministries, Members of Parliament, Chiefs, and NGOs, under the Chairmanship of the District Commissioner. Following the consultations, findings were presented to the NAP Steering Committee, which shaped the findings into issues that formed the basis for defining programme areas as follows:

- Food insecurity,
- Problems in water resources management,
- Problems in renewable energy,
- Poor forest resource management,
- Problems of environmental management,
- Underutilization of indigenous knowledge systems and technologies,

- Weak institutional arrangements, and
- Funding arrangements.

The National Environmental Action Plan (NEAP), the World Summit on Sustainable Development (WSSD), the Millennium Development Goals (MDG), the Malawi Poverty Reduction Strategy Paper (MPRSP), the Malawi Growth and Development Strategy (MGDS), the Malawi National Strategy for Sustainable Development (MNSSD), as well as the national decentralization process and the privatization frameworks have played a key role in redirecting the NAP. At international level, conventions such as the CCD, RAMSAR, CITES, and strategies such as the MDG and the WSSD, have also contributed to the development of the NAP. A number of lessons have been learnt in the implementation of NAP. To date, the NAP has undergone two reviews. New national policies in the areas of Decentralization, Privatization and HIV/AIDS are being examined in the review of the NAP. The NAP was integrated into the poverty reduction strategy paper (PRSP) in 2002 and into the National Strategy for Sustainable Development in 2003.

The 2002 NAP review has shown that various sectors and stakeholders have undertaken initiatives to address the problem of desertification/land degradation such as working more closely with the affected communities in the country. A number of projects directly or indirectly related to the CCD and supported by various international donor agencies are currently being implemented. These include the following projects: Sustainable Management of Indigenous Forests; Community Vitalization and Afforestation in the middle Shire area; Better Land Husbandry Project; Smallholder Flat Plains Development Program; Partnership for the Development of Environmental Law and Institutions in Africa; National Capacity Self-Assessment for Global Environmental Management; Persistent Organic Pollutants Enabling Activities for Malawi; Southern Africa Biodiversity Support Program; Biodiversity Project; and the Sustainable Management of Natural Resources in Neno District project. It is felt that NAP implementation is in line with new developments both at national and international levels and that it may currently be the most valuable tool in implementing the CCD obligations in the country.

1.2.3.2 *Overview of issues/constraints in the implementation of UNCCD*

Various constraints have been encountered in the implementation of NAP. Key ones include:

- A limited and unclearly defined CCD national budget;
- The absence of clear communication system between NCB members;
- The inadequate information and data on land degradation in various parts of the country that make it difficult to analyze the country's environmental status and come up with realistic NAP strategies and activities; and
- Limited resources mainly financial, human and technical.

In general, the implementation of NAP in Malawi is in line with new developments both at local and international levels. However, there is a need to critically look into the strategies outlined by various documents produced after the NAP was developed. For

example, the Malawi Poverty Reduction Strategy Paper (MPRSP), the Malawi National Strategy for Sustainable Development (MNSSD), and the Millennium Development Goals (MDG). It is recognized that some of the shortfalls identified in the implementation of NAP in Malawi are limiting the achievement of desired outputs especially the foreign debt servicing. At the same time, it is appreciated that programs such as HIPC are providing valuable assistance in some sectors in the implementation of NAP related activities.

Table 4 presents an overview of the issues/constraints. These have not been categorized into systemic, institutional and individual levels. A more detailed discussion is given in Chapter __ with regard to capacity issues.

Table 4: Priority Issues/constraints and relevant Desertification/Land Degradation provisions

No.	Issue/Constraint	Relevant Article in CCD
1	Increased levels of soil erosion and soil fertility decline	
2	Inappropriate farming practices	
3	Chronic poverty	
4	High population growth and declining land holding sizes	
5	Inadequate access to information	
6	Adverse weather conditions	
7	Deforestation	
8	Chemical contamination	
9	Unaffordable alternative sources of energy other than wood	
10	Poor technology to utilize alternative materials such as biomass and agricultural wastes	
11	Low efficiency of woodfuel end-use devices	
12	Agricultural expansion into marginal areas	
13	Unsustainable use of forest resources for domestic and commercial use	
14	Threats to biodiversity	
15	Poor natural resource management	
16	Lack of recognition and awareness of IKS Inadequate knowledge about IKS	
17	Poor horizontal and vertical institutional linkages	
18	Unharmonized extension system	
19	Inappropriate or unharmonized policies	
20	Ineffective implementation of policies	
21	Inappropriate or unharmonized legislation	
22	Weak enforcement of legislation	
23	Gender inequalities	
24	Poor institutional capacity at most levels	

25	Inadequate local financial resource	
26	Limited and/or declining donor support	
27	The debt burden	
28	Fiscal discipline	
29	Unsustainable funding mechanisms	

CHAPTER 2. THE NATIONAL CAPACITY SELF ASSESSMENT PROCESS

2.1 Introduction

The study was based on the progressive movement of the NCSA process which is aimed at systematically assessing Malawi's capacity needs in the areas of biodiversity conservation, climate change and desertification/land degradation and formulate a strategy for capacity building in these three areas, taking into consideration the national environment and development framework. In accordance with the GEF NCSA guidelines, Malawi NCSA is being implemented as a country-driven process undertaken in six stages as follows:

i. Establish appropriate co-ordination mechanisms for implementing the project.
ii. Conduct a stocktaking exercise to identify, review and confirm the priority issues within each thematic area.
iii. Carry out capacity assessment within the three thematic areas of the three Rio conventions, identifying the capacity constraints at the individual, institutional and systemic levels.
iv. Identify crosscutting capacity needs across the three thematic areas and identify any potential synergies.
v. Develop an NCSA Strategy and Action Plan.
vi. Implement and monitor the Action Plan.

To-date, the first four steps have been achieved. Step (iii) has produced three thematic reports (available as separate documents). This has mainly been achieved through the review of relevant literature and by engaging stakeholders in the elaboration of development strategies and action plans. Stakeholders were consulted at central government, parastatal, academic, private, research, non-governmental organization (NGO), local community, trust, donor and lending agency levels. This report focuses on Step (v) - assessment of how capacity can be developed in order for Malawi to meet her obligations toward the management of the global environment through the collective implementation of the three Rio Conventions. Capacity was assessed at three levels, that is, systemic, institutional and individual.

At the **systemic** level, capacity was taken to include:

- "enabling environments" i.e., societal support;
- Overall political, economic, legislative, policy, regulatory, incentive and accountability frameworks within which organizations and individuals operate;
- Informal and informal communication and collaboration among organizations and individuals; and
- Participation of all sectors of society in reaching environmental goals, through improved awareness, education and involvement and increased government transparency and accountability .

At the **institutional** level, capacity was taken to include:

- Organizational structures and processes, such as mandate, mission, responsibilities, accountabilities, communications, and deployment of human resources;
- Organisation's performance and functioning which include effectiveness, efficiency and responsiveness to change, management, strategic planning, and implementation of programmes and projects;
- Coordination and collaboration among groups or departments within the organization;
- Relationships with the ˜outside environment˜ (other organizations within or outside the country); and
- Information systems, infrastructure and equipment to support the organisation's work.

At the **individual** level, capacity was taken to include:

- The ability of individuals to manage and protect the environment, working as individuals, within organizations and within the larger society;
- Individual attitudes, knowledge, behavior and actions, awareness, understanding and skills on relevant topics;
- Individual performance including greater participation, ownership, motivation, incentives and morale.

In assessing capacity the following points were sought:

- Capacity constraints for the priority issues and analyzing root causes;
- Constraints at the individual, institutional and systemic levels;
- The respective roles and contribution of industry, public interest groups and bodies in the research sector;
- The existence of relevant information and databases, where they are located and who has access to them, the relevance of data, existence of gaps;
- The relevant projects that have been implemented and the impacts of these projects, as well as lessons learned;
- The kinds of capacity development projects and activities that have been undertaken;
- The short-term and long-term impacts of those projects and activities;
- The relevant technical capacity that exists, the infrastructure available to address the objectives of the respective area;
- The level of awareness and understanding within government and the public concerning climate change, biodiversity and desertification;
- The human resources available and the organizations that deal with climate change, biodiversity and desertification issues;
- The training and human resource programmes that exist and the courses offered;
- The financial resources available at the national level for action plans concerning climate change, biodiversity and desertification issues;
- Monitoring and evaluation of capacity development projects and activities during or after their execution; effectiveness of the projects and activities.

- Individual incentive to acquire new skills and technical capacity related to climate change, biodiversity and desertification. Do they have sufficiency of opportunities to do acquire new skills?
- Contact and exchanging knowledge and experiences among peers; barriers to communication within and across relevant institutions focused on climate change, biodiversity and desertification.
- Existence of untapped capacity or existence of capacity that could be redeployed to better effect;
- The linkages of capacity development efforts to existing or future legal, regulatory, or institutional requirements and responsibilities; the sustainability of capacity built in the past over the medium- and long-term.

2.2 Linkages Between NCSA, MGDS, MNSSD and MDGs

In 2000 all the member states of the United Nations, including Malawi, committed themselves to achieving the Millennium Developments Goals (MDGs) by 2015 (Table 5). In April 2002, Malawi launched the Malawi Poverty Reduction Strategy Paper (MPRSP) that aims at meaningfully reducing poverty by empowering the poor. The MPRSP is built around four strategic pillars. The first pillar emphasises the promotion of sustainable pro-poor growth. However, it was observed that policies to fulfill this strategic objective were insufficient to achieve a sustained annual economic growth of at least 6 per cent required to reduce poverty by half by the year 2015. The Malawi Growth and Development Strategy (MGDS) was, therefore, launched in July 2007 to operationalise the MPRSP. Following the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2004, and in response to the Johannesburg Plan of Implementation arising thereof, Malawi developed a National Strategy for Sustainable Development (MNSSD). The NCSA process aims to enhance sustainable environmental management as an integral part of sustainable development. The above shows that there is a clear linkage between the NCSA, MGDS, MNSSD and MDGs and that a systematic implementation of the plan of action arising from the NCSA process will be critical to achieving sustainable development.

Table 5. The Millennium Development Goals

By the year 2015, all 191 United Nations Member States have pledged to meet these goals	
Goal 1. Eradicate extreme poverty and hunger	Target for 2015: Halve the proportion of people living on less than a dollar a day and those who suffer from hunger.
Goal 2. Achieve universal primary education	Target for 2015: Ensure that all boys and girls complete primary school.
Goal 3. Promote gender equality and empower women	Targets for 2005 and 2015: Eliminate gender disparities in primary and secondary education preferably by 2005, and at all levels by 2015.
Goal 4. Reduce child mortality	Target for 2015: Reduce by two thirds the

	mortality rate among children under five.
Goal 5. Improve maternal health	Target for 2015: Reduce by three-quarters the ratio of women dying in childbirth.
Goal 6. Combat HIV/AIDS, malaria and other diseases	Target for 2015: Halt and begin to reverse the spread of HIV/AIDS and the incidence of malaria and other major diseases.
Goal 7. Ensure environmental sustainability	Targets: • Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. • By 2015, reduce by half the proportion of people without access to safe drinking water. • By 2020 achieve significant improvement in the lives of at least 100 million slum dwellers.
Goal 8. Develop a global partnership for development	Targets: • Develop further an open trading and financial system that includes a commitment to good governance, development and poverty reduction – nationally and internationally. • Address the least developed countries' special needs, and the special needs of landlocked and small island developing States. • Deal comprehensively with developing countries' debt problems. • Develop decent and productive work for youth. • In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries. • In cooperation with the private sector, make available the benefits of new technologies – especially information and communications technologies.

2.3 In-depth Analysis of the Thematic Issues

The biodiversity, climate change, and desertification/land degradation thematic studies have examined the issue of national capacity within the thematic areas and identified a number of capacity issues.

2.3.1 Climate Change

2.3.1.1 Ideal Capacity

An analysis of the commitments to the UNFCCC and Kyoto Protocol showed the following to be the ideal capacity needed to mitigate climate change and meet the obligations under the convention:

- proper legislative and policy framework,
- proper regulatory framework and enforcement mechanisms,
- proper penalties that can deter would be violators,
- structures that would encourage public participation and encourage accountability, and transparency in institutions
- effective anticorruption policies and legislation,
- proper poverty reduction strategies,
- an enabling political environment,
- sound economic policies,
- promotion of development and assimilation of technologies, practices and processes that mitigate climate change
- reduction of market or institutional failures and other barriers that impede the adoption of cost-effective emission reduction measures
- sufficient funding for relevant institutions,
- proper missions, mandates and visions in relevant institutions,
- proper monitoring, planning and management in relevant institutions,
- proper monitoring and evaluation of projects,
- adequate infrastructure,
- equipment,
- human resources,
- networking and linkages
- promotion of research and systematic observation in climate change related areas
- relevant curricula in schools,
- proper training,
- motivation of employees (clear career advancement opportunities and appropriate salaries),
- public awareness schemes and programmes,
- clearly defined job descriptions,
- clear reporting and accountability systems.

2.3.1.2 Capacity Gap Analysis – Climate Change

a) Systemic Level

Policies, laws and regulatory framework: Cross-cutting sectoral policies

The National environmental policy is the framework policy that deals with all environmental issues in Malawi. The issue of climate change is well covered in the policy. However, since climate change is a cross cutting issue there is a need for its coverage in other sectoral policies. The Energy Policy states explicitly that one of its aims is to combat or mitigate climate change. The issue of climate change is only implicitly mentioned or only hinted at in the Forestry Policy. There is a need for deliberate, planned forestry interventions that are targeted at climate change. In addition, climate change policies need to be integrated with the non-climate objectives of national sectoral policy development and which can be turned into broad transitional strategies to achieve the long-term social and technological changes required by both sustainable development and climate change mitigation.

People that are most vulnerable to adverse impacts of climate change are those that are very poor. Therefore there is need for sound economic policies and poverty reduction strategies that will uplift the standard of living of the poor masses and thereby enhance their capacity to adapt. Despite the fact that Malawi has been independent for over 40 years, the standard of living of people has plummeted. This shows that there has been a consistent lack of effective economic policies that would lift people from the poverty trap.

The government should make deliberate efforts to encourage capable Malawians to venture into large-scale mechanised irrigation farming business. Past government's efforts of encouraging smallholder farmers to take farming as a business have not worked.

Meteorological policy: The implementing organization of climate change in Malawi is the Department of Meteorological Services. However, the Department does not have a sectoral policy. As of now the department is guided by the National Environmental Policy, which is too general.

Lack of enforcement: The Environment Management Act is a framework legislation that aims at the protection and management of the environment in Malawi. Whereas issues of Ozone layer depletion are specifically mentioned in the Act, the issue of Climate change (global warming) is only implicitly mentioned or hinted at. There are a number of laws that are aimed at addressing the problem of deforestation. However, there is an obvious lack of enforcement since people are seen indulging in activities that require licenses apparently without licenses, such as charcoal making. In addition, there appears to be rampant corruption among law enforcers, which hampers strict enforcement of the laws. According to the Land Act, 10% of tobacco farms should be reserved for tree

plantation. Land Officers are the only enforcers of this law. However, Agricultural Officers are the ones at grassroots level. This leaves a gap in enforcement.

Clean Air Act and Air Quality Standards: There is a need for the enactment of the Clean Air Act and the development of air quality standards. Emissions can be controlled where there are clear and appropriate standards.

Appropriate fines: In the Forestry act, the fines are too low to be a deterrent and do not reflect actual value of natural resources. For example, the fine for cutting indigenous trees or forest property is MK5 000.00 or two years imprisonment. Whereas this fine may deter a poor villager, the fine is too small to deter people who are involved in large-scale charcoal or brick making businesses.

Technology transfer: There is political will to promote the use of renewable energy technologies. For example, the removal of duties and surtax (which was 40% of the price) on renewable energy technologies (RETs) has given new impetus to the renewable energy sector. Because of this incentive the sector is now boasting of a number of local companies involved in solar installation work. The reduction in price combined with financing mechanisms made available under NSREP has made it more affordable to rural tobacco farmers. The use of solar Photovoltaic (PV) for lighting and powering water pumps will result in reduction of GHGs as a result of reduction in use of carbon based fuels. However, the assimilation of these technologies has been minimal because of the high levels of poverty and resistance to change.

Lack of capacity to access CDM and other funding opportunities: Carbon trading allows industries in developed countries to off-set their emissions of carbon dioxide by investing in reforestation and clean energy projects in developing countries. There is a good opportunity of Malawi benefiting from the CDM window. Malawi has so far not been able to tap into these funding opportunities.

b) Institutional level

Missions, mandates and visions: All the institutions surveyed had missions, mandates and visions. However, these were not clearly visible such that when requested the concerned documents were usually recovered from drawers. In most cases the rank and file members of the organizations did not have clear knowledge of the organisation's vision and goals. Of all the organizations sampled 85 % had climate change implicitly or explicitly stated in their missions, while only 16 % had climate explicitly stated in their mission statements.

Funding: There has been a general decline in funding for government institutions and monthly subventions usually come late. This has seriously crippled their operations. For example, Blantyre ADD budgeted for K92, 059,354 for the year 2004/2005 but the amount subvented was K77, 404, 599. All the government institutions surveyed during the study were under funded.

Research and Systematic observation: Research has not been done to establish the trend of disease outbreaks due to climate variations. Even though outbreaks of diseases have been recorded in health centers and hospitals, systematic research has not been done to establish the time and season of occurrence of the diseases. This makes the country to be unprepared in terms of disease outbreaks such as cholera, malaria, flu and dysentery. In other countries disease outbreaks are well researched, such that the countries stock up medicine in advance to tackle the outbreak. For example, the flu season in the USA is well documented to enable the government make the necessary arrangements to procure drugs and vaccines in advance. Diseases are not the only adverse impact of climate change; insects that carry diseases and pests that destroy crops can abnormally increase in numbers due to climate change.

The Meteorology Department has been collecting weather data for decades, but limited analysis has been done to determine the occurrence of certain events such as drought, dry spells and heavy rainfall. Thorough research on the data can establish the trend of occurrence of such events, and thus enable the country prepare in advance to mitigate the adverse impacts of such events. Tertiary education institutions are not involved in climate change research because of lack of equipment and funding. There is a lot of untapped indigenous knowledge in areas of climate change and indigenous forest management. This knowledge could be vital in forecasting and planting of indigenous species. Therefore, there is a need for a research to gather and document this kind of knowledge.

Equipment: The University of Malawi as an institution that can be used as a hub for technology development and transfer does not, in its constituent colleges, have enough equipment for training and research. The Department of meteorological services does not have all the equipment that it needs. Most of the equipment is non-functional. It does not have enough monitoring stations to cover the nation. The Environmental Affairs Department needs air-monitoring equipment to be stationed in a number of stations around the country. The Ministry of Irrigation and water Development has 6 HYCOS stations that are not operational because of non-functional equipment. A lot of other monitoring equipment in the Ministry is not working.

Early Flood Warning System: Floods appear to be occurring more frequently in Malawi than previously known. All flood prone areas should have an early flood warning system. The Ministry of Irrigation and water Development lacks an up-to date effective flood warning system.

Drought forecasting system: Malawi has been experiencing persistent droughts which have led to mass starvation of the population and has negatively affected the economic performance of the country. There is a need for an improved and accurate drought forecasting system.

Critical analysis and evaluation of projects and programs: Most of the donor-funded projects are not critically evaluated before they are implemented. This leads to problems of continuity and sustainability of the projects once funding has stopped. It is not uncommon to see projects coming completely to a halt at the expiry of the funding

period. There is, therefore, need to do a critical analysis of the projects before they are implemented. A number of projects embarked on by NGOs do not go through critical evaluation, but are done because they are fashionable with the international donors at that particular time.

Two-way information flow between training institutions and employers: The University of Malawi and other training institutions offer a number of courses in environmental science, natural sciences, and forestry, among others. The employers of these graduates usually do not have an input into the content of the courses taught. Employers run the risk of hiring someone who is not properly trained for the job. For example the Department of Meteorology employs environmental sciences graduates from the Polytechnic, and physics graduates from Chancellor College, and yet they have very limited input into the curricula.

Coordination of NGOs and Government Institutions: There is very little coordination and sometimes no coordination between NGOs and Government institutions when it comes to projects implementation. This has led to duplication of effort and inefficient use of resources.

Lack of adequate health care: As the productivity of the population depends upon its health status, there is need for the government to properly fund the health sector so that it may be able to handle major health disasters due to climatic variations. As of now about 60% of established nursing positions are vacant due to staff leaving for greener pastures and as a result of attrition under the HIV/AIDS scourge. The government needs to make concerted efforts on improving working conditions in the health service such as improving remunerations and allowances for staff.

c) Individual (human) level

Public Awareness and appreciation: Many people are not aware of the issues of climate change. The ADDs through their extension personnel do impart knowledge on how deforestation adversely impacts communities in terms of fuel wood unavailability, exposing river banks (which leads to flooding), but clear cut information on climate change is not made available to the communities. The main thrust of ADD's extension personnel message is on soil and water conservation. The electronic and print media do feature the issues of environment, but specific focus on climate change is rarely made. Environmental issues are covered in school syllabi starting from primary school. However, the level of knowledge is limited. People just relate climate change to the cutting of trees, which is just part of the problem**.** The problem of emission of GHGs is not well covered.

Personnel and specialist training: An average 40% of the established posts are vacant in ADDs. For example, in the Shire Valley ADD, out of 184 sections only 93 sections are manned. The current staff to farmer ratio is 1:1800 against the recommended 1:500 and for Blantyre ADD the current established posts stand at 1347 and of these only 1002 are filled. There is generally no specialised training offered in tertiary institutions in Malawi

relating to climate change and Meteorologists have to be trained in Kenya and elsewhere, which is expensive.

Motivation of staff: Employees of government agencies are not properly motivated because of poor salaries. Many have been leaving to join the private sector as they seek better salaries. Lack of clear career advancement opportunities has also contributed to this exodus.

2.3.1.3 Prioritisation of Capacity Needs - Climate Change

In prioritization of the needs the following criteria were used: the scale of the need (how critical the need is), level of concern (how strategic the area is), and inability of the nation to handle the need. Table 6 below shows the prioritization of capacity needs.

Table 6: Prioritisation of capacity needs

No	Capacity need
1	Accurate drought forecasting system
2	Early Flood Warning system
3	Meteorological Policy
4	Sectoral policies related to climate change
5	Funding of institutions
6	Research and systematic observation
7	Lack of capacity to access funds under CDM and other opportunities
8	Personnel and specialist training
9	Equipment
10	Enforcement of climate related legislation
11	Motivation of staff
12	Technology transfer
13	Public awareness and appreciation
14	Critical analysis and evaluation of programmes and projects
15	Coordination of NGOs and governmenmt institutions
15	Two-way information flow between training institutions and employers
16	Appropriate fines
17	Clean Air Act and Air Quality Standards
18	Missions, mandates and visions

2.3.1.4 Capacity Development Initiatives – Climate Change

a) Systemic Level

The UNFCCC:
The Intergovernmental Panel on Climate Change (IPCC) is an important body working in close collaboration with the UNFCCC. The IPCC was jointly established by the World Meteorological Organisation (WMO) and the United Nations Environment Programme (UNEP) in 1988. The terms of reference of IPCC include:

- To assess available scientific and socio-economic information on climate change and its impact and on the options for mitigating climate change and adapting to its effects; and
- To provide on request, scientific/technological/socio-economic advice to the conference of parties to the UNFCCC.

The IPCC provides guidelines for the various climate change projects on inventory and other programmes. As a party to the UNFCCC, and as noted earlier, Malawi signed and ratified both the UNFCCC and the Kyoto Protocol. Malawi is further required to use the IPCC guidelines in meeting all reporting requirements under the Convention. This has been done, for example, during the exercise to estimate GHG emissions.

Malawi's National Environmental Action Plan (NEAP)

This is a response to the agreements concluded at the United Nations Conference on Environment and Development (UNCED) held at Rio de Janeiro in 1992. Malawi identified in NEAP (1994, revised 2002) nine key environmental issues namely: soil erosion, deforestation, water resources depletion and degradation, high population growth, depletion of fish stocks, threats to biodiversity, human habitat degradation, climate change and pollution. The plan has strategies to address each area of concern, which include reforms in policy and legislation and possible new investment programmes.

Policies and Legislation

Malawi formulated and enacted legislation that has a bearing on climate change. These include the National Environmental Policy (2004), the National Energy Policy (2003), the National Forestry Policy (1996) and the Environment Management Act (1996), Forestry Act (1997) and others.

b) Institutional level

National Committee on Climate Change (NCCC)

This is a national committee that is mandated to coordinate climate change activities such as policies and programs, enabling activities, and other public awareness initiatives. The NCCC is chaired by the Meteorological Department of the Ministry of Transport and Works, while the Environmental Affairs Department (EAD) in the Ministry of Natural Resources and Environmental Affairs is the Secretariat. Other members of the NCCC are: Ministry of Agriculture and Irrigation, Ministry of Water Development, Ministry of Economic Planning and Development, Department of Energy, Department of Forestry, Department of National Parks and Wildlife, University of Malawi (Bunda College of Agriculture, Chancellor College, and the Polytechnic), CURE (an NGO), Malawi Chamber of Commerce and Industry, Local City Assemblies (Blantyre and Lilongwe). The NCCC works in liaison with the National Council on the Environment (NCE) and the Technical Committee on the Environment (TCE).

Other institutional programs and projects

The department of energy has been involved in a number of projects and programs that enhance capacity to mitigate and adapt to climate change. These include:

- Barrier Removal to Renewable Energy in Malawi (BARREM) Project,
- Programme for Biomass Energy Conservation (PROBEC),
- National Sustainable and Renewable Energy Programme (NSREP),
- Malawi Rural Electrification Programme (MAREP),
- SADC Regional Energy Planning Network (REPN) project,
- SADC Industrial Energy Management project,
- Study on Assessment of Alternative Energy Sources in Malawi.

The Environmental Affairs Department has produced a number of national documents that relate to climate change. These include the following:

- Malawi's Inventory of Greenhouse Gas Emissions and Sinks for 1990,
- Systematic Reporting and Observations,
- National Environmental Action Plan,
- UNFCCC Initial National Communication,
- Nation Adaptation Plan of Action,
- Climate Change Mitigation/Abatement Analysis for the Energy, Agriculture and Land Use Change and Forestry Sectors,
- Vulnerability and Adaptation Assessment Report, 2001.

ADDs do not directly deal with activities relating to climate change but carry out the following activities through the Department of Land Resources Conservation that indirectly mitigate and adapt climate change:

- Agro forestry
- Environmental education
- Rain water harvesting
- Land husbandry methodology and systems
- Staff and farmer training
- Soil fertility improvement
- Soil and water conservation

c) Individual (human) level

Issues that relate to climate change are covered in school curricula in Malawi starting from primary school. The University of Malawi and other tertiary education institutions offer courses that have a bearing on climate both at undergraduate and postgraduate levels. The print and electronic media cover environmental issues including climate change.

2.3.1.5 Capacity Development Strategies – Climate Change

a) Systemic level

Policy on farming

The government should make deliberate efforts to encourage capable Malawians to venture into large-scale mechanised irrigation farming business. Past governments efforts

of encouraging smallholder farmers to take farming as a business have not worked. The vast planes of Lower Shire, lakeshore areas and areas around perennial rivers, which are seriously underutilized now, can be exploited for large-scale mechanized irrigation farming. A policy should be put in place which will enable Malawians to access capital through soft loans, and a monitoring mechanism should be put in place to see that the money is used for the intended purpose. Mechanised irrigation farming requires a lot of electricity, so there will be need to subsidise the cost of electricity supplied to the farmers. If vast areas of Lower Shire and lakeshore areas were to be put into large scale farming, just like what Illovo Sugar is doing now, Malawi's competitiveness as an exporter of agriculture products will much with the best agricultural exporting nations of the world. The country will be able to feed itself, and the adverse impact of drought will be completely wiped out. Large scale mechanized farming will employ a lot of Malawians, and thereby raise their standard of living.

Policy and legislation

There is need to integrate climate change consideration in the National Development Policy. This calls for a review and amendment of the existing policy and legislation. These policies should have clear and concise strategies for combating climate change in Malawi. For example, the LUCF was identified to be the greatest emitter of GHGs in the GHGs Inventory. Therefore most of the efforts in mitigation of climate change must be directed at this sector. The strategy should identify the species of trees to be grown in terms of their sequestration potential of GHGs, the amount of land that should be dedicated to old standing forests and amount of land that should be dedicated to planting of new forests, and at what age the standing forest should be harvested to allow regrowth. For instance old forests have less ability in carbon sequestration, and indigenous trees are known to have a higher ability in carbon sequestration.

The advantages of targeting LUCF sector is that forests play other beneficial roles such as combating desertification, water and soil conservation, biomass energy resource, timber supplier and generally they are of aesthetic value.

Climate Change falls under the jurisdiction of the Department of Meteorological Services, however there is no policy that is guiding it. Therefore there is for a Meteorological Policy and Act. One of the strategies put forward in the National Environmental Policy is the enactment of the Clean Air Act. A Clean Air Act would be appropriate in combating GHG emissions.

The poor are the most vulnerable to adverse impacts of climate change. Therefore sound economic policies that ensure equitable distribution of wealth and resources are an integral part of the fight against climate change.

Critical Project Appraisal

Donor funded projects should be critically appraised before implementation and monitored after inception to ensure sustainability and relevance. This will ensure continuity of the project after the expiry of the funding period and result into maximum impact.

b) Institutional Level

Carbon trading and the Clean Development Mechanism

Carbon trading allows industries in developed countries to off-set their emissions of carbon dioxide by investing in reforestation and clean energy projects in developing countries. There is a high chance of Malawi benefiting from the CDM window. Therefore the nation needs to assess the areas where to target such projects. For example, the nation needs to study the rivers that have potential for mini-hydro and micro-hydroelectric generation. Similar assessments need to done for the potential for electricity generation from geothermal, wind and solar energy resources. Mechanisms of linking these sources to the national grid should also be explored. These areas can benefit from the CDM window. The same can be said for all other sectors such forestry.

For proper control and management of the CDM programme there is need to establish a regulatory framework.

Proper funding for institutions

Government institutions should be properly and adequately funded for smooth implementation of program and projects. Incentives in government institutions should be revised in order to motivate employees and curb brain drain of critical staff (which is paralyzing the operations of the institutions).

Research

There is need for climate change related research in research and higher learning institutions to enhance technical expertise and to provide the necessary climate related data. One of the major constraints in conducting this kind of research is acute shortage and lack of equipment due to inadequate funding. It is important to note that one of the strategies for combating climate change suggested in the NEP, is the development of a database on air pollution through the establishment of a sound air quality monitoring system. Therefore the Department of Environmental Affairs should work hand in hand with research and higher learning institution to establish a network of air quality monitoring stations.

c) Individual (human) level

Public awareness

There is need for intensive public awareness programmes on climate change related activities. Print and electronic media should be sensitized to disseminate weather and other climate change related information as a social responsibility.

There is need for specialized training in climate change mitigation and adaptation technologies for relevant stakeholders. ADDs should especially be targeted for this training because of their wide network and involvement at grass root level. In addition to training there should an intensive HIV/AIDS awareness campaign so that the trained human resource should be preserved.

Motivation
People working in climate change related areas need to be properly motivated through incentives (good remuneration and working conditions) and availability of clear career advancement opportunities.

Introduction/strengthening of climate change material in the syllabus of agricultural extension officers
The ADDs have a wide coverage of the whole country up to the village level. Even though their main thrust in the extension services is soil and water conservation (which have baring on climate change), there is need that they should be engaged in sensitizing communities about climate change. For them to effectively accomplish this task, they should be properly trained in climate change. Inclusion of climate change in their syllabi will go along way in achieving this goal.

2.3.2 Biodiversity

2.3.2.1 Ideal Capacity
An analysis of the commitments to the UNCBD and the results of this study showed a number of existing capacities to address the priority issues given in Table 3, namely:

- Umbrella national policies and legislation, in particular the constitution of the Republic of Malawi and the Environmental Management Act, that stipulate the national agenda on biodiversity issues in line with the CBD;
- Institutions with clearly defined mandates/missions;
- Technical cooperation between national, regional and international institutions;
- Availability of information services, libraries and internet service (e.g. SDNP, GWAN);
- National initiative to establish a Clearing House Mechanism; and
- Sufficient educational level and knowledge on biodiversity related issues, in some selected research and academic institutions.

It was determined that the ideal capacities for Malawi to effectively and efficiently address the priority issues and to implement the CBD include:

- political will;
- relevant policies and legislation;
- relevant institutional arrangement such as research and Academic institutions e.g. Museums, Botanic Gardens, Gene banks, Colleges and universities;
- designated areas for conservation e.g. National Parks, Game Reserves, Botanic Gardens, Forest Reserves;
- professionally trained human resources e.g. conservationists, taxonomists, zoologists, plant breeders, game rangers, etc.;
- Infrastructure and assets (buildings, research facilities such as computers, vehicles, communication facilities e.g. access to internet and phones, GPS, etc.);
- adequate financial resources;
- effective technical cooperation with relevant institutions;
- capability to carry out research on ecological systems including monitoring and evaluation of biodiversity;

- sufficient knowledge and skills in communication;
- efficient and affordable technologies for harnessing natural resource products/by-products;
- conducive socio economic and environment;
- innovative capabilities to raise funds for biodiversity activities; and
- Ability to deal with cross cutting issues particularly HIV and AIDS.

2.3.2.2 Capacity Gap Analysis – Biodiversity

Malawi was found to be deficient in some of the required capacities. The capacity of Malawi to address the priority issues was found to have gaps with reference to:

- overlapping and conflicting sectoral policies and legislation;
- inadequate instruments (such as regulations, guidelines etc.) to enable operationalisation of relevant sectoral policies and legislation;
- inadequate exchange and access to biodiversity information among peers between institutions;
- poor incentives and motivation to promote excellence in biodiversity issues;
- inadequate skilled personnel;
- inability to effectively monitor and evaluate biodiversity;
- poor economic and socio environment;
- infrastructural weakness especially due to inadequate assets; and
- Inappropriate deployment of human resources in some institutions.

On the basis of the above constraint analysis, the following overall constraint assessment is made.

a) Systemic Level

- There are a number of national policies/strategies and legislation relating to biodiversity. Umbrella instruments such as the Constitution of the Republic of Malawi, the National Environmental policy and the Environment Management Act, and the National Biodiversity strategy Action Plan currently being finalized, clearly and adequately stipulate the national agenda on biodiversity issues in line with the CBD.
- However, the legal framework in relation to biodiversity at institutional level is burdened with overlaps, gaps and inconsistencies. The sectoral policies and legislation need to be harmonized to minimize overlaps and conflicts. In addition, there is need to develop appropriate instruments (e.g. regulations, guidelines, contractual agreements) to fully operationalise the existing sectoral policies and legislation.
- Most institutions have clearly defined mandates.
- Implementation effectiveness of strategic documents/legislation is low due to absence of appropriate instruments.
- The current economic and social situations have created an environment, which is not conducive to national systems that promote biodiversity conservation.
- The systemic level resources (i.e. human resources, financial resources, databases and their accessibility) are unsatisfactory.

- There is technical cooperation between national and regional and international institutions.
- There are inadequate professionally trained human resources dealing with biodiversity.

b) Institutional Level

- While only a few of the institutions are solely dedicated to biodiversity work, most of the scientific and academic institutions are in one way or another involved in biodiversity conservation. Many institutions only indirectly carry out biodiversity related work. Yet some institutions are not even aware of their importance in biodiversity issues.
- The responsibility of the institutions, their activity, co-ordination and accountability in the field of biodiversity is low and therefore need to be improved.
- The scientific and academic institutions do not have adequate financial resources for biodiversity conservation. As a result even when the institutions have intentions of conserving biodiversity or implement biodiversity related research, they cannot effectively operate.
- There is need for improvement in institutional processes (i.e. quality management, monitoring and evaluation) in most institutions.
- The human resources available in research and academic institutions are fairly qualified but inadequate. However, training and research programmes are related directly to individual motivation and interest and are project-based.
- The institutional infrastructure are in most cases inadequate and where available in need of improvement. For example there is need to increase and update computing facilities in most institutions.
- Data base management and information exchange among institutions need improvement especially with reference to collaboration.
- Availability of information services e.g. libraries and Internet service (SDNP).
- There is a national initiative to establish a Clearing House Mechanism.
- There is inadequate capacity to access financial resources through the GEF
- Academic institutions depend on Government subvention and this limits their capability to undertake biodiversity research
- There is weak linkage between policy and research For example; policies are not made based scientific understanding of issues.

c) Individual (human) Level

- Current educational level and knowledge on biodiversity related issues are sufficient in few research and academic institutions. There is need to strengthen the understanding of biodiversity in most of the institutions, particularly at the District Assembly and community level.
- The exchange and access to information is inadequate among the professional scientists in various research institutions.
- Individual motivation to promote excellence in biodiversity issues is low due to poor incentives and motivation.

- Communication skills among the individuals involved directly involved in biodiversity conservation is adequate.
- There is appropriate deployment of human resources in research and academic institutions but it is poor in most other institutions.

2.3.2.3 Capacity Building Opportunities - Biodiversity

The capacity constraints identified above at each level, i.e. systemic, institutional and individual levels, provided direction for identifying possible opportunities for building capacity needed. Capacity building opportunities are reviewed in terms of creating new capacity, mobilizing or redeployment of existing capacity, and enhancing existing capacities at all the three levels i.e. individual, institutional and systemic level.

a) Systemic level

It is important to note that there are adequate umbrella policies and legislation that sufficiently provide for implementation of the CBD. However, the sectoral policies and legislation need to be harmonized as they overlap and conflict with each other in some cases. Removal of these overlaps and conflicts could significantly add Malawi's capacity at systemic level to effectively implement the CBD. Relatively, there are lesser constraints at systemic level than at individual and institutional levels in Malawi. The current economic and socio frameworks seriously limit Malawi's ability to implement the CBD. This is compounded by cross cutting issues especially the HIV and AIDS pandemic, which have crippled the society. Mainstreaming biodiversity in the policies and legislation of various institutions so that they directly relate to CBD will improve Malawi's capacity at systemic level to implement the CBD. There are also opportunities to build capacity at systemic level through provision of appropriate instruments that will assist to effectively operationalise existing policies and legislation. For example, the clearinghouse mechanism could be operationalised and provision of regulations and guidelines specifically dealing with issues of access and benefit sharing and indigenous knowledge, could contribute to effective implementation of the CBD. Systemic capacity is also weak in terms of incentives and moral support. Introduction of tax and customs incentives for implementation of appropriate technologies for biodiversity conservation or for economic and legal entities that positively promote biodiversity conservation such as eco-tourism development would increase capacity at the systemic level. *There are lesser constraints at systemic than at individual and institutional levels to address biodiversity priority issues and there are adequate umbrella policies and legislation that are conducive to biodiversity conservation. However, many factors such as poor economic environment, overlapping and conflicting sectoral policies and legislation, lack of appropriate instruments to effectively operationalise existing policies etc. limit capacity at systemic level.*

b) Institutional level

The capacity matrix indicates that there are most constraints to address the priority issues in Malawi at the institutional level. Existing institutions have clearly defined mandates and plans. However, most these mandates do not directly relate to biodiversity. There are opportunities to create new capacity by mainstreaming biodiversity in the existing mandates so that they directly relate to biodiversity. Relevant institutions dealing with

biodiversity are in place. However these institutions are not effective because of various reasons such as inadequate and inappropriate infrastructures (in terms of building and assets), inadequate financial resources, inadequate personnel to monitor and evaluate biodiversity, overlapping sectoral policies and legislation, poor access to biodiversity information, and high costs to services (e.g. communication services). There are opportunities for capacity building by renovating old or building new structures, training personnel capable of monitoring and evaluating biodiversity, increasing institutional assets that will promote research and improve communication, and creating innovative ways of sourcing finances. Harmonization, and therefore removal of overlaps in sectoral policies and legislation will significantly increase institutional capacity in Malawi. The study also showed that 65% of the institutions are engaged in biodiversity research of some kind while 85% are involved in biodiversity awareness activities. This research and awareness base provides an opportunity on which to build capacity by enhancing diversifying the type of research and awareness programmes to be curried. *The overall conclusion is that there are more capacity constraints at institutional level to address the priority issues. However, there are many opportunities to take advantage of existing institutional framework to create new capacities. Institutional capacity could be enhanced by increasing the provision of both human and technical resources within the government, research and academic institutions.*

c) Individual level

The study showed that there are inadequate skilled personnel in most institutions and this makes it difficult to meet address the priority issues. This is further reflected in the capacity matrix where it is evident that there is constraint at individual level in nine of the 11 priority issues for Malawi. Therefore, it is recommended that new personnel be trained and the existing personnel be strengthened through hands on training. Constraints in individual capacity may also be addressed by redeployment of staff. The lack of data and knowledge concerning ecosystem balance, monitoring and evaluation of biodiversity (such as species diversity especially invertebrate fauna, cryptogamic plants), and research in various fields of biodiversity are constraints. Addressing these constraints require new individual capacities. Individual capacity is particularly low at District Assemble and local community levels. In view of the current programme of decentralization, it is necessary to build new capacity at District Assembly and local community level as the individuals at those levels are directly responsible for conservation and utilization of biological resources. While some capacity exists, especially in research and academic institutions, there is need for mobilization and redeployment. In addition to redeployment, new capacity in the existing personnel could be built by putting in place mechanisms that will motivate and increase morale of personnel. The overall conclusion is that new capacity needs to be created through training of new personnel (in various fields of biodiversity), mobilization and redeployment of the existing personnel, and introduction of mechanisms that motivate and increase morale of staff.

2.3.2.4 Capacity Development Strategies - Biodiversity

a) Systemic Level

In her efforts to address the priority issues in biological diversity, Malawi needs to develop and implement strategies that recognize the inter-relationships between the three conventions on Climate Change, Desertification and Biological Diversity. Climate change, for instance, is considered the main contributor to national disasters such as droughts, floods and large scale damage to many ecosystems. This demonstrates that biological diversity priority issues cannot be addressed in isolation from the priority issues of the other two conventions. *Hence the current efforts to develop a coordinated and holistic approach to addressing priority issues of the three conventions are the pre-requisite for success in developing the ideal capacity.*

The Convention on Biological Diversity as well as the other two conventions requires national, regional and global concerted effort. Malawi and indeed any other nation cannot work in isolation. Therefore the starting point for Malawi, to ensure that the biological diversity priority issues are adequately and successfully addressed is to strengthen her position and efforts *to foster sustained international cooperation, support and collaboration to address the biological diversity priority issues.*

Biological diversity priority issues have both the horizontal and the vertical dimensions. The horizontal dimension considers the inter-relationships between the various Government institutions that are at par with each other, while the vertical dimension is concerned with the inter-relationships between the Government Institutions and other players (NGOs, private sector etc), all the way down to the local communities). Addressing the biological diversity priority issues depends on the effective commitment and participation of all stakeholders at different levels. *Government therefore, needs to create an enabling environment to render support at all these levels so as to foster full commitment, ownership and participation of all the stakeholders in biodiversity priority issues.* Of particular importance is the responsibility by the Government to take the leadership role in instilling a culture of individual and personal responsibility for the problems arising from loss of biodiversity.

The biological diversity priority issues require long-term strategies, programmes and investment plans. This is a major challenge to Malawi, which as a country, is frequently forced to direct its efforts and resources to respond to natural disasters and such emergencies as food shortages and epidemics including HIV and AIDS and malaria. Such a challenge requires the government's political will to ensure that the *financial support, for meeting the challenges of the biological diversity priority issues, are adequately differentiated and protected from other budgetary requirements, so as to ensure sustainable implementation of the CBD provisions.*

In addition to the above broad strategies, need was identified to address the following specific areas at the systemic level.

- Continuation of harmonisation of sectoral policies and legislation to remove overlaps and conflicts;

- Provide appropriate instruments that will assist to effectively operationalise existing policies and legislation e.g. regulations and guidelines for accessing and sharing benefits from use of biological resources, regulations and guidelines for protecting indigenous knowledge, and regulations and guidelines on use of biotechnology;
- Establish and operationalise the Clearing House Mechanism;
- Mainstream biodiversity in policies and legislation of various institutions so that they directly relate to the biodiversity;
- Introduce sound economic and socio policies that create an environment conducive to biodiversity protection e.g. by providing alternative livelihoods for the poor especially in local communities so as to reduce pressure on our biological resources;
- Promote policies that aggressively address cross cutting issues especially HIV and AIDS;
- Formulate policies that provide incentives and promote morale in biodiversity conservation e.g. introduction of tax and customs incentives for implementation of appropriate technologies for biodiversity conservation or for economic and legal entities that positively promote biodiversity conservation such as eco-tourism development;
- Create innovative ways of sourcing finances for biodiversity programmes e.g. introduce taxes particularly on activities deemed unfriendly to biodiversity conservation;
- Integrate policies both in Government and private sector that deliberately provide for infrastructure especially assets (computing facilities, research equipment, communication facilities) to institutions relevant in biodiversity programmes;
- Enhance policies and legislation that provide for creation of protected areas for conservation including botanic gardens;
- Promote use of efficient and affordable technologies for harnessing biological resource products/by-products;

b) Institutional Capacity

At the institutional level, the study has identified need for the following action:

- Strengthen f institutional structures relevant to biodiversity conservation through provision of appropriate assets such as computing facilities, communication facilities, renovation of old buildings and/or put up new infrastructure;
- Increase financial provision to relevant institutions (Section 6.6) to promote effective operation;
- Increase skilled human resources in relevant institutions (Section 6.6);
- Increase access to biodiversity information by strengthening capacity of libraries, museums, herbaria and botanic gardens, and also providing efficient and affordable internet facilities;
- Integrate biodiversity research in institutional programmes;
- Increase technical cooperation between Government and international institutions involved in biodiversity
- Mainstream biodiversity in academic curricula;

- Strengthen capability of District Assemblies through training and collaboration with highly skilled professionals from various institutions, for example Universities, research institutions e.g. the National Herbarium, and others.
- Mainstream biodiversity even in seemingly less important institutions such as the Immigration Department, Malawi Revenue Authority especially the Customs and Exercise Departments;
- . Institute effective measurement of performance of employees.

c) Individual Capacity

At the individual capacity level there is need to create awareness, sense of responsibility and sense of ownership for biological diversity as well as the priority issues. There is need to demonstrate, through practical examples, the nature, seriousness and gravity (in terms of duration and geographical extent), of the impacts that are emanating from alteration and depletion of biological diversity.

The study demonstrated that issues of biological diversity are discussed and understood more at the tertiary education level than in the primary and secondary schools. Long term development strategies for addressing priority issues in biological diversity should therefore, include educating individuals from the primary secondary schools. Pupils should be made aware of the problems their generations will face if the priority issues are not addressed. *Therefore it is very important to revise the curricula for primary and secondary schools to cater for moulding the future generations into responsible custodians and beneficiaries of biological diversity. There is also need to educate the masses, particularly the illiterate, through civic education and public campaigns.* In addition to the above, deliberate efforts should be made to:

- Train more human resources e.g. conservationists, taxonomists, zoologists, plant breeders, game rangers, etc that are directly involved with biodiversity monitoring and evaluation, and biodiversity research;
- Appropriately deploy or shift human resources at various levels within the same profession, for effective implementation of biodiversity programmes;
- Provide incentives and security to personnel involved in activities addressing biodiversity priority issues;
- Promote mechanisms for encouraging individuals to own and benefit from biological diversity and its products in a sustainable manner.
- Empower local communities with knowledge on biodiversity issues especially those that directly relate to them e.g. access and benefit sharing, intellectual property rights, and indigenous knowledge;
- Hold accountable any irresponsible professionals and the citizenry for their mistakes and neglect in addressing the priority issues and for any acts that deliberately lead to misuse and misappropriation of biological diversity;
- Promote advancement and development of individuals to appreciate the role of biological diversity and the benefits of adequately addressing the priority issues for sustainable livelihood.

2.3.3 Desertification/Land Degradation

2.3.3.1 Ideal Capacity

As outlined in Section 1.2.3.1, eight priority issues have been identified. Under each of the eight issues, the NAP has identified a number of key problems (or causes and effects). The issues and their associated causes/effects, which must be mitigated to meet the obligations under the convention, reflect deviation from the ideal capacity, as follows:

Food Insecurity

- Increased levels of soil erosion and soil fertility decline
- Inappropriate farming practices
- Chronic poverty
- High population growth and declining land holding sizes
- Adverse weather conditions
- Inadequate access to information

Problems in Water Resource Management

- Adverse weather conditions
- Deforestation
- Soil erosion causing siltation
- Chemical contamination

Problems in Renewable Energy

- Unaffordable alternative sources of energy other than wood
- Poor technology to utilize alternative materials such as biomass and agricultural wastes
- Low efficiency of woodfuel end-use devices
- Deforestation

Poor Forest Resource Management

- Deforestation
- Agricultural expansion into marginal areas
- Unsustainable use of forest resources for domestic and commercial use
- Use of poor agricultural methods such as slash and burn

Problems of Environmental Management

- Threats to biodiversity
- Poor waste management
- Poor natural resource management

Underutilization of Indigenous Knowledge Systems and Technologies (IKS)

- Lack of recognition and awareness of IKS
- Inadequate knowledge about IKS

Weak Institutional Arrangements

- Poor horizontal and vertical institutional linkages
- Unharmonized extension system
- Inappropriate or unharmonized policies and legislation
- Gender inequalities
- Poor institutional capacity at most levels

Funding Arrangements

- Inadequate local financial resource
- Limited and/or declining donor support
- The debt burden
- Unsustainable funding mechanisms

2.3.3.2 Capacity Gap Analysis – Desertification/Land Degradation

The approach in analyzing capacity gaps involved making a specific analysis at the Agro-Ecological Zone level, as well as examining the status of groups of stakeholders: Government ministries and departments, parastatal organizations, academic institutions, research organizations, Non-Governmental Organizations (NGOs), private sector organizations, and Trusts.

2.3.3.2.1Agro-Ecological Zone level

As a requirement under the TORs, capacity assessment was to be carried out at agro-ecological zone (AEZ) level to evaluate if there was capacity differentiation at this level. Malawi is divided into fourteen agro-ecological zones. According to the Food and Agriculture Organization (FAO) definition, an AEZ is defined as a land unit in terms of climate, landform and soil and/or land cover and having a specific range of potentials and constraints for land use. They range in size from as low as 733 Km^2 to 12,588 Km^2. For the sake of the NCSA exercise, Agricultural Extension Planning Area (EPA) offices were chosen instead of the AEZ. The rationale for the choice was that an EPA is the lowest or local level unit within the government agricultural administrative structure which includes the District level, above which is the Agricultural Development Division (ADD) level that reports directly to the Ministry of Agriculture (MoA). Seven EPAs were chosen for the study, representing seven of the fourteen AEZ. This means that the choice of an EPA was deliberate in order to achieve some form of representation for the AEZ in the sample, for capacity building purposes.

a) Capacity Assessment at System Level

It was observed that capacity constraints at the systemic level i.e. policy and legal framework, were similar in that, these being agriculture institutions, were operating under a similar environment. At the management accountability level, these EPAs had similar clearly defined responsibilities mainly to do with the training of farmers in soil conservation and fertility improvement practices through marker ridging and ridge realignment, agroforestry technologies and afforestation. When it came to the functioning of markets, variability was observed based on the nature of agricultural products and infrastructure development. Those near urban centers had more effective and efficient

markets than those away. When it came to human, financial and information resources, all EPAs had staff and financial shortages though to a variable degree mainly depending on availability of such resources at their respective ADDs. In order to function effectively, an EPA is obliged to interact with other stakeholders such as community groups, lending agencies, NGOs, etc.

b) Capacity Assessment at Institutional Level

The national agriculture mission, vision and strategic plan govern all EPAs. In terms of management, it was felt by all that in each EPA there is an important need for an officer who would sorely deal with desertification/land degradation issues. At this level, planning and M&E are part of the monthly or annual work programme, including target setting and budgeting. Staff shortage at all levels was found to be a major problem. Lack of proper training and/or retraining was another capacity issue common to the EPAs. Most training is carried out at the Natural Resources College. With regard to assets, all EPAs operate from their own buildings. The only major office equipment that they own was typewriters. In most cases these are old and need replacement. There is no telephone, electricity, and in most cases even reliable water supply system is not available. The motorbike is the main mode of transport and these are in relatively good shape even though they were inadequate in numbers.

c) Capacity Assessment at Individual Level

There was a general feeling that extension workers at EPA level have received good training though they require retraining to be in tune with the changing times. Almost all respondents ranked career progression, morale and motivation, and incentives/security as poor or average, while team work/networking was ranked as excellent. All extension staff indicated that they have undergone good training in communication skills (outreach) at either Bunda College of Agriculture (University of Malawi) or the Natural Resources College. In general, it was observed that being located in a particular agro-ecological zone has limited influence on the capacity of EPAs at systemic, institutional, and individual level save when it came to the economic framework i.e. the functioning of markets.

2.3.3.2.2 Capacity Assessment for Addressing Priority Issues at Stakeholder Level

Capacity assessment was undertaken with regard to various stakeholders from government, parastatals, academic, research, trusts, NGOs and the private sector. An attempt has been made to examine capacity at individual stakeholder group with the purpose of trying to find out if there is group variability.

a) Government Ministries and Departments

Generally, there is poor career progression, motivation, accountability/ethics, incentives, security, attitudes, and team work; and there is inadequate or in-available office equipment and vehicles including motor bikes.

Systemic level: It was found that most government institutions have policies and legislation that require review to effectively accommodate the convention's obligations for the effective implementation of the CCD. Inter-sectoral processes and relationships

need to be reviewed. For example, most institutions have not developed effective decentralization mechanisms. Human resources are inadequate in most institutions and where they are present, these require specialized training and/or retraining to improve their skills. One area would be in communications skills at intra- and inter-sectoral levels. Enforcement of relevant laws in the thematic area also needs improvement.

Institutional level: Although most of the institutions have strategic plans, some have not provided effective mechanisms to implement such plans. This is mainly because system level resources such as human, financial, infrastructure and information are unavailable or are provided in limited amounts. It has also been observed that human resources in most government institutions lack incentives, suffer from poor career progression, lack motivation, and suffer from the shortage of necessary resources such as office equipment and vehicles, to the extent that their attitude to work is negatively affected.

Individual level: Most government institutions lack the necessary skills for specific jobs, and require training or retraining. Though most institutions have elaborate career progression mechanisms, these are generally not efficiently or effectively implemented due to inadequate finances to implement those mechanisms. In most cases effective performance monitoring is lacking to the extent that individuals are rarely held accountable. At most professional and technical levels, there are no clear incentives or where they exist, they are not implemented, such that staff motivation is generally low.

b) Parastatal Organizations

Systemic level: Among parastatal organizations, there are generally no policies and/or a legal and regulatory framework that clearly cover the area of desertification and land degradation.

Institutional level: Some parastatal institutions do not have elaborate mechanisms for effective planning, monitoring and evaluation of programs such that if there are any CCD initiatives being implemented, the impact of the interventions remains unclear. Even though some of these institutions undertake initiatives affecting CCD, they do not have human resources sufficiently skilled to effectively deal with desertification/land degradation issues. The same institutions do not have in place systems for effective career progression, or keeping staff morale, motivation, accountability, incentives, team work, and security of tenure high. Among those parastatal institutions that have to deal with CCD, many do not have elaborate mechanisms to monitor performance and deal with issues of misconduct. Further more only a few institutions have sufficient vehicles and office equipment such as computers to use for effective data collection, analysis and dissemination of information for effective sharing of experiences.

Individual level: Most professional and technical staff members are not well trained in communication skills.

c) Academic Institutions

S**ystemic level:** The policy framework in most of academic institutions in Malawi, does not clearly cover the desertification/land degradation theme, as this area has only been

gaining prominence fairly recently, i.e. it was for a long time being taken for granted and not considered relevant to Malawi. CCD is a fairly recent phenomenon in this part of Africa. Therefore, most academic institutions' legal and regulatory framework does not clearly cover this thematic area.

Institutional level: The academic institutions rarely work and network with other institutions on CCD and its related activities in the country and elsewhere due to limited capacities and facilities. The existing academic institutions also generally suffer from inadequacy of office equipment and vehicles. Staffing levels are also generally low and in some cases, the required skills in those staff are not available.

Individual level: Although most professional/technical staff are professionally and technically sound, most staff are not trained adequately in communication skills to ensure effective networking nationally, regionally and internationally. Due to poor incentive schemes, staff turnover is very high.

d) Research organizations

Systemic level: Policies and regulatory guidelines in some research institutions require review to define appropriate research programs which would include initiatives dealing with desertification and land degradation. The enforcement of relevant rules, regulations and laws regarding CCD is generally weak.

Institutional level: Some research institutions are not conducting appropriate research as mandated to them by the authorities. The institutions also suffer from ineffective outreach programs, resulting into poor research findings and poor adoption of those research findings.

Individual level: The human resource situation seriously requires addressing to improve on training and skill profiles. Some of the research institutions do not have elaborate career progression mechanisms, or where available, these are not efficiently and effectively implemented to attract and retain staff. There are also limited incentives to promote effective implementation of research programs by staff, who are generally not motivated enough to be able to perform well.

e) No-Governmental Organizations (NGOs)

Systemic level: The NGOs' legal and regulatory framework is generally lacking. A number of these NGOs in Malawi are fairly new and have emerging systems and procedures that require fine-tuning and validation. Hence, some of these do not have any vision, mission statements, goals and objectives or strategic plans.

Institutional level: In a number of cases, human resources are not sufficiently skilled to carry out planning, implementation, monitoring and evaluation of activities to measure impact of intervention for the CCD. A number of NGOs registered deficiency in the required equipment and vehicles, including motor cycles for possible outreach programs that have to do with CCD.

Individual level: Staff training and development are not adequately addressed. Staff also suffer from low morale due to inadequate incentives to motivate them to remain in their jobs. These too suffer from staff turnover and as a result they have low or inadequate staffing levels.

f) Private Sector Organizations

S**ystemic level:** Most private sector organizations do not have policies and regulatory mechanisms that cover the area of desertification/land degradation.

Institutional level: Some private sector organizations do not have elaborate mechanisms for effective planning, monitoring and evaluation of efforts to address desertification and land degradation.

Individual level: Human resources in the private sector organizations are not sufficiently skilled to effectively deal with desertification/land degradation issues.

Institutional level: Most of these organizations have insufficient vehicles and office equipment such as computers for networking and effective exchange of information. There are very limited mechanisms for career progression, morale boosting, motivation, accountability and transparency, provision of incentives, team work, and security of tenure.

Individual level: Some of the organizations do not have elaborate mechanisms to monitor performance and deal with issues of misconduct and invariably do not have terms and conditions of service to secure staff in their jobs. Most professional and technical staff members are not well trained in communication skills and as such they have limited capacity to network and share ideas and experiences at national, sub-regional, regional and international levels.

g) Trusts

Systemic level: There are very few trusts in Malawi relevant to the thematic area of desertification. These are MEET and MMCT. Most of the other Trusts have limited policies and/or a legal and regulatory framework that touches on desertification and land degradation.

I**nstitutional level:** Most trusts are so new and inexperienced that they do not generally have mechanisms for planning, monitoring and evaluation of CCD programs. For any CCD initiatives being implemented, the impact of the interventions remains unclear.

Institutional level: Although some of these institutions undertake initiatives relating to CCD, they do not have human resources sufficiently skilled to effectively deal with desertification/land degradation issues. Only a few trusts have sufficient equipment such as computers to use for effective data collection, analysis and dissemination of information for effective sharing of experiences. Communication between trusts is generally ineffective.

Individual level: Most of the trusts do not have in place systems for effective career progression, keeping staff morale high, motivation, accountability, incentives, team work, and security of tenure. Among those trusts that have to deal with CCD, almost none have elaborate mechanisms to monitor performance and deal with issues of misconduct.

2.3.3.3 Capacity Development Initiatives – Desertification/Land Degradation

As outlined earlier, eight priority issues have been identified namely: Food insecurity, problems in water resources management, problems in renewable energy, poor forest resource management, problems of environmental management, underutilization of indigenous knowledge systems and technologies, weak institutional arrangements and funding arrangements. Under each priority issue, a number of pertinent issues have also been identified as detailed in Section 2.3.3.1.

The next stage of the exercise is to assess ongoing and new capacity development initiatives, aimed at reducing the capacity gap and eventually assist in addressing the eight priority issues in an efficient and effective manner.

a) Systemic Level

Policy Initiatives

A number of initiatives have been undertaken at systemic level. Various policies have been developed or are being revised together with action programs as follows:

- Within the area of CCD implementation, the NAP was developed in 2000 and has undergone review in February and July 2004. It has been proposed that further review should take place to mainstream new policy development such as the Decentralization Policy.
- The NEAP (1994) has led to the review of several national and sectoral policies including the following: Forestry (1996); Fisheries and Aquaculture (2001); National Parks and Wildlife (2001); Energy (2004), Decentralization (1998); Land (2002); Irrigation (2000), Water Resource Management (2000); and Land Use Management. This has led to the development and implementation of new development strategies.
- In the Forestry Sector, after the review of policy in 1997, the National Forestry Program (NFP) was developed in 2000 with the aim of examining challenges faced in the sector, identify key strategic areas, and map out a way forward for each area. Twelve strategies and actions were identified and are at different stages of implementation.
- Various sectors have adopted the Decentralization Policy and are developing/implementing various measures in their sectors. For example, in the Agriculture sector, a process has commenced aimed at producing "status report" on decentralization in the sector, focusing on the decentralization of extension services to the Districts.
- In implementing the CCD obligations in the country, a National Coordinating Body comprising of various stakeholders from government, parastatals, academic institutions, trusts, NGOs, the private sector, and donors has been established.

Some of the major outcomes of this have been the review of the NAP and the preparation of national CCD reports.

- A new Land Policy was developed in January 2002
- Within the thematic area of desertification/land degradation, the country is developing more effective programs, which directly or indirectly deal with capacity issues, with regional organizations such as the Southern African Development Community (SADC) and the African Union. These programs include: Sustainable Management of Indigenous Forests; Partnership for the Development of Environmental law and Institutions in Africa (PADELLA); National Capacity Self-Assessment (NCSA) for Global Environmental Management; Songwe River Stabilization Project; Designation of Lake Malawi as a RAMSAR site; and the Nyika Trans-boundary Program. These projects directly address the NAP process in Malawi.
- The Department of Forestry, as a way of reducing the deforestation rate, has produced the State of Malawi Forest report to bring to the attention of all stakeholders the status of the forest resources in each District and to assist central government, District Assemblies, and potential donors and cooperating institutions and NGOs in identifying the relevant interventions that each district require.

Legal Initiatives

The following legal initiatives have or are being undertaken within the thematic area:

- The National Council for the Environment has been established through an Act of Parliament. The Council is at present working out various programs of action.
- Following the GOM's adoption of the Energy Policy in 2003, the Department of Energy developed an associated legal and regulatory framework. This has been enacted by Parliament. Effectiveness is awaiting gazetting of the Energy Laws after arrangements for the establishment of the energy sector wide regulator, Malawi Energy Regulatory Authority (MERA), are finalized. The legal and regulatory framework comprises the following Energy Acts: Energy Regulation Act, No. 20, of 2004; Rural Electrification Act, No. 21 of 2004; Electricity Act, No. 22, of 2004; and the Liquid Fuels and Gas (Production and Supply) Act, No. 23, of 2004.
- The Land Act has recently been revised and modalities for its enforcement are being developed.
- The NEAP has assisted in the development and/or review of several Acts including: the Local Government Act (1998); Water Works Act (1995); Pesticide Management Act (1999); National Parks and Wildlife Act (1992); Fisheries Conservation and Management Act (1997), and the establishment of the Poisons and Medicines Board (1993). In addition, EIA Guidelines and Standards were established in 1994, as well as, sector-specific EIA guidelines and Standards for irrigation, waste management, sanitation, and mining. Despite enforcement constraints, this process is facilitating the effective and efficient implementation of various activities some of which have been mentioned earlier in this report.
- The Environmental Management Act 1996 has been revised.
- Land laws are being revised.

- There has been established an association of lawyers known as the "Green Wigs" as a forum for legal practitioners to participate more effectively in environmental and natural resource management matters.

b) Institutional Level

A number of capacity development initiatives are taking place at institutional level that reflect the performance and functioning capabilities, as well as, the ability of organizations to adapt to change by developing the institution as an effective and efficient entity. The following are a few examples of such initiatives:

- As presented in the preceding sections, most institutions at various levels, government, parastatal, academic, trust, NGO, and private have or are developing mission statements and strategic plans
- Most institutions have put in place mechanisms to facilitate planning, monitoring and evaluation, and information gathering and dissemination
- Despite the various constraints, especially lack of adequate financial and technical resources, most institutions are striving to address the human resource problem in terms of adequacy, skills' sufficiency, and deployment
- Despite the various constraints, especially lack of adequate financial and technical resources, most institutions are striving to address the infrastructure issue in terms of procurement, allocation, and management of resources building/office space, vehicles and office equipment such as computers and accessories
- The capacity of local authorities, such as VNRMCs, is being strengthened through a number of sectoral programs and micro-projects such as the Lilongwe Forestry Project, the Lake Malawi Artisanal Fisheries Development Project both funded by the ADB, the Malawi Social Action Fund (MASAF) funded by the World Bank, the GOM/USAID funded NATURE project, the World Bank funded Environmental Management project, and the GOM/JICA funded Community Vitalization and Afforestation in the middle Shire area
- The development of Decentralized Environmental Management Tools
- The Production of District State of the Environment Reports and Environmental Action Plans
- The development of linkages with Local Assemblies by the EAD
- The EAD has facilitated implementation of environmental micro-projects under various donor-funded projects, including Environmental Management Project funded by the World Bank; Urban Environment Management Project and Support to Environment Fund Project funded by DANIDA.
- The Environmental District Officers (EDO) have and are coordinating environmental impact assessments and inspections at local level since decentralization commenced
- The EDOs are providing information through reports or their participation in various activities done at local level particularly those being implemented by NGOs and Community Based Organizations (CBOs)
- Implementation of environmental education and mass awareness programs on environment and natural resources

- For the first time, Indigenous Knowledge Systems (IKS) and Technologies is being recognized and has been included in the NAP.
- Regarding public awareness, a number of initiatives are being undertaken such as: Participatory awareness programs being disseminated through the print and electronic media; A Forum for Environmental Communication (FECO) has been established; and a Coalition of Journalists on Environment and Agriculture (CAJEA) has been established.
- To assist in addressing the financial issue, a number of stakeholders, such as government, donor agencies, NGOs, and programs such as MASAF, MEET, and the newly launched Malawi Rural Development Fund (MARDEF) are/will play a commendable role in addressing the issue.
- The NCSA project is directly as well as indirectly assisting in developing mitigating strategies and action plans for capacity building in the desertification thematic area

c) Individual (human) Level

There are a number of individual level capacity development initiatives being undertaken by various sectors in the country with the aim of trying to change attitudes and behavior; imparting knowledge; and developing skills through jobs that are correctly defined; training; career progression; accountability; access to information; conduct; incentives; motivation; team work; and communication skills. Such initiatives include the following:

- Despite financial constraints, most institutions are training or retraining their staff at various levels: professional, technical and vocational
- The University of Malawi, through Bunda College of Agriculture, has introduced, apart from training in agriculture, training in the areas of natural resource management and forestry
- The University of Mzuzu has established the Faculty of Environmental Sciences covering the fields of forestry and energy
- The Government has increased financial allocations to line Ministries and Departments dealing with natural resource management. This is directly assisting capacity development in the implementation of CCD obligations in the area of desertification/land degradation
- Through various support programs, public awareness campaigns are being promoted in the thematic area
- Various institutions have developed incentive schemes aimed at motivating staff and eventually retain them. These include institutional restructuring that is providing staff with new opportunities; provision of physical incentives; training opportunities to improve skills, etc.
- Performance monitoring mechanisms to promote accountability
- The EAD has developed a Training Plan for the period 2004-2010 aimed at promoting capacity building education and public awareness on sound natural resource management and environment

2.3.3.4 Capacity Development Strategies – Desertification/Land Degradation

After having identified the capacity gaps (Section 2.3.3.2) and capacity development initiatives (Section 2.3.3.3), the next stage is to try to identify possible opportunities for building the ideal capacity. This analysis should result in some concrete ideas for capacity building projects and the specific objectives these projects would aim to accomplish.

a) Systemic Level

The following strategies have been formulated at the systemic level:

- Review policy affecting agriculture production to improve and sustain food sufficiency
- Organize meetings and workshops to debate on existing policies and legislation
- Review policies highlighted to clearly cover the desertification/land degradation theme
- Develop relevant policies in the area of meteorology, agriculture research, the environmental faculty at MZUNI, the Lilongwe City Council, WESM, CURE, and the Central Region Water Board
- Develop effective measures for the implementation of various policies
- Develop strategies for effective and efficient enforcement of legislation
- Fines and penalties should be aggressively enforced by the Judiciary
- Increase the devolution process in all sectors of Government within the environment and natural resource management fields
- The District Assembly structures should be revised to, among other things, highlight the position of the Environmental District Officers (EDOs) as a central coordination of environmental and natural resource management at district level
- Review the grades of EDOs to vary by size and nature of the district or catchment area being served
- Develop mechanisms for the Ministry of Local Government so that it plays a more active role in pushing all the sectors earmarked or are being devolved
- Review and recommend efficient and effective mechanisms to promote inter-sector processes and relationship
- Review institutional legal and regulatory framework in those institutions highlighted to clearly cover the thematic area
- Develop promotional mechanisms that will attract donors and other lending agency to review their policies and eventually support desertification/land degradation programs. One area would be addressing the debt burden
- Sensitize the Judiciary and Prosecutors through “Green Wig” meetings and workshops about desertification/land degradation issues
- Provide resources and training to promote effective law enforcement
- Develop mechanisms for improved management and utilization of natural resources e.g. by reviewing marketing policies

- Explore a range of fund raising mechanisms, involving donors and other stakeholders and assist sectoral funds such as the District Development Fund and MEET
- Develop mechanisms to effectively enforce the 10% forest covenant on agricultural estates
- Promote alternative sources of income generating activities
- Support the development of local level institutions such as VNRMC, school clubs, etc.
- Identify and promote suitable alternative sources of energy
- Support physical programs that are aimed at reducing desertification/land degradation in the country e.g. by encouraging investors in the thematic area
- Support mainstreaming of HIV/AIDS awareness and decentralization programs into the desertification/land degradation sectoral programs.
- Support extension services as required at sectoral level

b) Institutional Level

The following strategies have been formulated at the institutional level:

- Procurement of Vehicles (lorries, 4x4s, and saloons), plant, motor bikes, bicycles, office equipment (computer and accessories, photocopiers), specialized equipment for survey and inventory as well as for teaching purposes
- Support the building of new offices, expansion and/or maintenance of existing offices
- Review institutional management structures where required to effectively accommodate CCD obligations
- Review or develop mission statements and strategic plans
- Develop a desertification/land degradation databank
- Develop mechanisms to promote effective planning, monitoring and evaluations in those institutions that are in need
- Further develop environmental messages to educate the public on causes of desertification/land degradation and remedial measures
- Support research measures within the thematic area
- Provide resources that will promote information gathering, storage, and effective dissemination/sharing through networking
- Support new or existing community based initiatives in the thematic area by providing the necessary resources

c) Individual (human) level

The following strategies have been formulated at the individual level:

- Provide resources to support specialized training and retraining at various levels (professional, technical, certificate, and vocational) as require by the various stakeholders e.g. environment, forestry, land resource management, energy, food processing, extension, communication, agro-forestry,

- Provide resources to support training and education in all the relevant areas such as small and medium scale enterprises, efficient charcoal production, production and adoption of energy saving devises, use of non-wood forestry products, alternative sources of energy such as biogas, solar, ethanol based fuels and coal, in the growing of multipurpose trees, EIA, income generating activities (IGAs), product storage and marketing, natural resource management, IKS, gender, HIV/AIDS, and environmental education.
- Provide resources to support mainstreaming of environmental education in the school curriculum at vocational, primary, secondary, and university levels.

2.3.4 Cross Cutting Capacity Needs and Synergies

A critical review of the three thematic studies carried out so far, as well as information from other documentation, resulted in the identification of linkages between priority issues in the three thematic areas through the use of a "problem tree" approach. These issues form the basis for further analysis of synergistic areas across the conventions, which in turn will form the basis for the development of a strategy/action plan to achieve capacity.

Common or crosscutting capacity issues from the capacity issues identified for the three thematic areas have been summarized. The identification process has been based on the premise that an issue is of relevance to the three thematic areas. From a total of the 63 capacity issues, of which 23 belong to the Biodiversity category, 24 Climate Change, and 16 Desertification/Land Degradation (Table 7), only 17 have qualified as having crosscutting relevance.

Within the Crosscutting Assessment process, the "Prioritization Matrix" tool has been used to analyze each crosscutting capacity issue in terms of: the comparative scale of the problem; the level of concern for that problem that exists at local, national, regional, or global level; the ability to adequately address the problem at the level that the problem exists e.g. national; and the priority ranking which that problem is given in terms of its severity. In brief, ranking crosscutting capacity issues through the matrix allows for a simple comparison of the relative importance of each issue and should thereby facilitate in simplicity a critical analysis of such issues.

Table 7: National Capacity Issues in the thematic areas of Biodiversity, Climate Change, and Desertification/Land Degradation

Biodiversity Capacity Issues	**Climate Change Capacity Issues**	**Desertification/ Land Degradation Capacity Issues**
♦ Inadequate restoration of degraded ecosystems ♦ Inadequate appropriate measures for *in situ* and *ex situ* conservation of genetic and species diversity ♦ Inadequate recovery of threatened species and populations ♦ Lack of measures for regulating access to genetic	♦ Lack of meteorological policy and legislation ♦ Inappropriate or inconsistent policies and legislation ♦ Inadequate awareness and understanding of climate change issues	♦ Inappropriate farming practices ♦ Inadequate access to information ♦ Unaffordable alternative sources of energy

resources ♦ Lack of mechanisms for ensuring safe use of biotechnologies ♦ Conflicting policies and legal framework for sustainable use and conservation of biological resources ♦ Inadequate human, institutional and national capacity to identify, monitor and manage biodiversity and ecosystems ♦ Inadequate public awareness on the importance of biodiversity ♦ Inadequate availability and poor accessibility to biodiversity data and information ♦ Lack of mechanisms for access to technologies that are relevant to conservation and sustainable utilization of biological diversity ♦ Unsustainable utilization and lack of mechanisms for equitable sharing of benefits arising from the use of biological resources ♦ Inadequate research in biodiversity related issues ♦ Weak linkages between generated biological diversity technologies and users ♦ Weak community participation in the conservation and sustainable utilization of biological diversity ♦ Inadequate funding for biodiversity related activities/projects/programs ♦ Poor infrastructure and equipment ♦ Inadequate knowledge of components of biodiversity, important for its conservation and sustainable utilization ♦ Lack of capacity to access financial resources provided via the financing mechanisms of the Convention ♦ Lack of integration of the conservation and sustainable utilization of biodiversity within the over-riding priorities of the country's economic, social development and poverty reduction programs ♦ Lack of information and knowledge concerning biodiversity as a basic prerequisite for scientific and technical education and training ♦ Lack of information exchange mechanisms and knowledge concerning biodiversity ♦ Inadequate public awareness for biodiversity in general and for the importance of the measures required for the conservation of biodiversity ♦ Inadequate appreciation of the importance of biodiversity	♦ Unaffordable alternative sources of energy to fuelwood ♦ Low efficiency of biomass end-use devices ♦ Ineffective and inefficient waste management ♦ Unsustainable natural resource utilization ♦ Inadequate recognition of indigenous knowledge systems ♦ Ineffective and inefficient horizontal and vertical institutional linkages ♦ Inadequate or lack of infrastructure ♦ Inadequate financial resources ♦ Unsustainable funding mechanisms ♦ Inadequate equipment ♦ Inadequate environmental management systems ♦ Lack of coordination of environmental research ♦ Low morale of public servants ♦ Inadequate or lack of effective partnership between academic institutions and the private sector ♦ Insecurity of infrastructures ♦ Lack of local academic institutions offering meteorology courses ♦ Weak enforcement of relevant laws and regulations ♦ Low local community participation in climate change issues ♦ Inadequate staff ♦ Promotion of coal utilization is in conflict with the main objective of the Convention ♦ Lack of staff performance management appraisal in the civil service except for those on contracts	to fuelwood ♦ Low efficiency of biomass end-use devices ♦ Unsustainable use of forest resources ♦ Ineffective and inefficient waste management ♦ Unsustainable natural resource utilization ♦ Inadequate awareness and utilization of indigenous knowledge systems ♦ Ineffective and inefficient horizontal and vertical institutional linkages ♦ Inconsistent extension system ♦ Inappropriate or inconsistent policies and legislation ♦ Gender inequalities ♦ Inadequate or lack of infrastructures ♦ Inadequate financial resources ♦ Unsustainable funding mechanisms ♦ Inadequate and/or inadequately trained manpower resources

The analysis shows that almost all the 17 cross-cutting capacity issues identified are of national concern as opposed to being of local, regional or global concern. It has also been revealed that Malawi has limited ability to adequately address them despite the fact that almost all issues are ranked as severe with a high level of concern by the Government of Malawi (GoM).

2.3.5 National Crosscutting Capacity Strategies

In order to facilitate the analysis of each cross-cutting capacity issue, after prioritization of each issue, it is essential that each issue is placed in the following three categories: *systemic*, *institutional*, and *individual* levels. According to the NCSA Guidelines, the level at which an issue occurs has a direct or indirect influence over the type of capacity building required. Systemic capacity is concerned with enabling environment, i.e. the overall policy, economic, regulatory and accountability frameworks. Institutional capacity focuses on overall organizational performance and functioning capabilities and ability of an organization to adapt to change. Capacity building at individual level refers to the process of changing attitudes and behaviors - imparting knowledge and skills while maximizing the benefits of participation, knowledge exchange and ownership.

The result of this exercise (Table 8) has shown that most (i.e. 12) cross-cutting capacity issues occur at the institutional level while only two are at the systemic level and three at the individual (human) level. Further analysis was undertaken to determine strategies in order to achieve synergistic capacity building (Table 8).

Table 8. Cross-Cutting Issues and Strategies for Synergistic Capacity Building

Crosscutting Capacity Issues	Capacity Building Strategies		
	Individual	**Institutional**	**Systemic**
1. Inadequate public awareness		• Strengthen the communication unit of institutions such as EAD, FD, MoA • Development and/or improvement of media houses and relevant programs such as television and radios and community video halls, • Strengthen and expand the environmental curricula of the school system at all levels.	
2 Inadequately skilled or trained manpower	• Train people in relevant areas such as inventory management, monitoring and assessment.	• Strengthen the capacity of all relevant training institutions at various levels including University, Colleges, Secondary and Primary schools, and Vocational training centers to mainstream the three thematic areas in their programs	
3. Weak community participation in the conservation and sustainable management	.	• Strengthen multi-sectoral forums created to address the three conventions • Strengthen local government institutions at DA level	
4. Inadequate Availability and Poor Accessibility to data and Information	• Train statisticians, data entry clerks, analysts, environmental economists and monitoring and	• Strengthen sectoral data centres and link them to a newly created data management center for the three conventions to be located in the EAD.	

Crosscutting Capacity Issues	Capacity Building Strategies		
	Individual	**Institutional**	**Systemic**
	evaluation experts		
5. Weak enforcement of relevant laws and legislation	• Train more foresters and wildlife officers and provide them with the necessary skills for the enforcement of laws and regulations	• Strengthen the staff capacity of FD and DNPW to intensify surveillance. Expand community forestry.	• Review the legal framework for natural resource management. • Establish Local Natural Resource Committees provided for by the Local Government Act
6. Lack of mechanisms for access to relevant technologies	• Train extension agents and individual farmers.	• Strengthen the extension services of public and NGO agencies. • Increase the number of relevant NGOs and their delivery quality • Develop and strengthen the adaptive research capacity of research institutions	
7. Inadequate and/or Inappropriate Conservation Measures	• Train land use planners, cadasters, foresters, fisheries staff, parks and wildlife, environmentalists and surveyors	• Assess current level of conservation measures at national divisional and village levels and develop appropriate intervention programs.	• Review conservation regulation and strengthen its enforcement.
8. Unsustainable utilization and lack of mechanisms for equitable sharing of benefits		• Increase capacity to implement co-management arrangements centers	
9. Inadequate Awareness and Utilization of Indigenous Knowledge Systems		• Strengthen linkages with Government, understanding of the MEAs, and extension capacity of NGOs and CBOs operating in natural resource management • Develop and implement a public sensitization program on IKS • Mainstream IKS in the curricula of tertiary training institutions • Mainstream IKS in development projects	
10. Conflicting policies and legal framework		• Strengthen the capacity of various natural resource sector coordinating organs to meet frequently and to	• Review the various natural resource

Crosscutting Capacity Issues	Capacity Building Strategies		
	Individual	**Institutional**	**Systemic**
		monitor the implementation of sectoral policies effectively	related-sector policies with a view to harmonizing them
11. Limited incentives and low public staff morale reforms		• Develop existing or promote new staff incentive schemes	• Review the incentive regime for natural resource development and develop supportive legal, policy and institutional frameworks
12. Lack of or uncoordinated research	• Train researchers in forestry, fisheries, range management, and agronomists, socio-economists, climatologists, specialists in GIS	• Strengthen forestry, wildlife, fisheries, environment, agronomic and socio-economic research capacities of relevant institutions	
13. Inadequate and or unsustainable funding mechanisms		• Set up Desertification and Biodiversity Trust Fund • Implement the legislation relating to the setting up of the fund and appropriately review existing provisions on revenue retention	• Devise and implement effective policy mechanisms that will encourage the cancellation of the heavy Debt burden with international institutions
14. Ineffective and inefficient institutional linkages	• Train experts for effective participation of Malawi as convention party	• Establish joint programmes across common themes of the conventions • Establish an effective M&E (and reporting) system • Utilise the CHM for networking of stakeholders with the Secretariat	
15. Inadequate or lack of infrastructure and equipment	• Train technicians to operate modern specialised equipment	• Increase physical infrastructure and equipment facilities, with sustained maintenance	
16. Inadequate		• Develop and disseminate a range of	

Crosscutting Capacity Issues	Capacity Building Strategies		
	Individual	Institutional	Systemic
diversification in alternative sources of energy		simple and affordable devices for domestic purposes using different sources of energy	

It has been observed at ***systemic level*** that key opportunities include examination of the policy, legal and regulatory frameworks. A process exists, for example, to address the need for legislative and policy reform, whereby the relevant ministry prepares the new documents, circulates it to other relevant ministries and after agreement is reached it is sent to the Ministry of Justice to draft. There is need for the maximum use of existing institutions.

At ***institutional level*** opportunities include mobilizing and/or re-deploying existing capacities and enhancing existing capacities, for example, developing relevant modules/courses at various academic institutions at Universities, Colleges, Institutions and Schools. A coordinated approach is required in the production of extension and sensitization materials involving relevant stakeholders from the agriculture, forestry, environment, fisheries, national parks and wildlife sectors, etc. Enhancing existing capacities will include institutional rationalization and reform. Strengthening the extension program, research and planning capacities is required at various relevant institutions.

The weak capacity of the public sector to deliver services and perform the functions required to stimulate growth and reduce poverty is widely viewed with concern. The high vacancy rates in the civil service, particularly among specialized skill categories (eg, health personnel, chartered accountants) adversely affects the likelihood of achieving the MDGs. This scenario is particularly severe at district levels where systems are underdeveloped and the staffing complement is still being assembled. Some projects address these weaknesses by relying upon project management units (PMUs) and project specific management systems. Others build institutional capacities in autonomous public institutions (eg, MASAF, NRA, NAC). Recent programs are tackling management skills and human resource constraints within the civil service itself.

At ***individual level***, creating new capacities will entail a series of long-term training courses to develop the critical mass of scientists and professionals needed. These include environmentalists, foresters, fisheries experts, biodiversity experts, meteorologists, botanists, taxonomists, zoologists, statisticians, monitoring and evaluation specialists, sociologists, planners, cadasters, surveyors, economists, extension specialists, agroforesters, ecologists, agronomists and GIS specialists. Enhancing existing capacities will entail a series of refresher and short-term specialized training courses. There is need for each relevant sector to identify its training needs and produce a training master plan that will guide its current and future requirements. The EAD have carried out this exercise and their report could be emulated.

2.3.6 Deforestation as a major crosscutting issue

Malawi has the highest rate of loss of tree cover in the SADC region, running at 2.8% per annum. The analysis has revealed that deforestation is one of the major causes of priority issues identified within a thematic area. Such effects of deforestation are in two stages; primary and secondary. Within the primary stage are issues such as: degradation or loss of ecosystems; water resource depletion or degradation through siltation or chemical pollution; threat to, degradation and/or loss of biodiversity; climate change and variability; and soil erosion and soil fertility decline. Within the secondary stage, a number of priority issues at primary level have affected a number of priority issues at secondary stage. For example, the degradation or loss of ecosystems has a negative effect in encouraging the introduction of invasive alien species; an increase of threatened species and populations; and a threat to biosafety. On the other hand, climate change and variability has a negative influence through precipitation change and temperature rise, as well as leading to an increase in wind speed and wind violence with its devastating effects on the environment.

A number of studies in Malawi have shown that the major causes of deforestation are many but can be grouped into two categories: policy and market failures. The following policy failures do exist that may be constraining proper management of forest resources in Malawi leading to a relatively high level of deforestation. The logging ban appears to have encouraged illegal logging. The "command and control" forest management practice without full participation by local communities, the restricted access to forest reserves by local communities and their consequent marginalization in the distribution and sharing of forest benefits all appear to have increased pressure to de-reserve some protected areas back to customary land. The marginalization of non-wood forestry products and environmental attributes in forest resource valuation might also have contributed towards the poor management and under-utilization of such resources including biodiversity.

Some market failures in the management of forest resources have also been identified. The poor stumpage structures that tend to discount resource scarcity, might be contributing towards the under-pricing of forest products. High transaction costs, arising mainly from high costs of forest inventories, have led to under-utilization of some forest resources. The relatively poor enforcement of regulations and the light penalties might be having a significant influence on illegal activities such as increased poaching, encroachment, forest excision rates, tree theft, uncontrolled fires, and the vandalism or theft of forest equipment including office equipment, vehicles, and field equipment. Several synergistic strategies/opportunities to address the deforestation problem in the country exist (Table 9).

Table 9. A Summary of Opportunities to Address the Deforestation Problem

ISSUE	INDIVIDUAL OPPORTUNITIES	INSTITUTIONAL OPPORTUNITIES	SYSTEMIC OPPORTUNITIES

ISSUE	INDIVIDUAL OPPORTUNITIES	INSTITUTIONAL OPPORTUNITIES	SYSTEMIC OPPORTUNITIES
Deforestation	♦ Increase professional, technical, and vocational training at institutions such as University of Malawi (Bunda College of Agriculture, Chancellor College), Mzuzu University, Natural Resources College, Malawi College of Forestry etc. as well as abroad	♦ Reorganize institutional set up by conducting a more efficient and effective decentralization program in line with the decentralization policy. For example, regional government offices within the sectors of natural resources and environment are obsolete and should therefore be phased out as a cost saving strategy	♦ Remove the command and control policy and replace with co-management involving local communities and the private sector
	♦ Introduce more incentives to boost the morale of staff especially in the public sector. This could be in form of timely payment of various allowances, provision of protective clothing, appropriate laboratory, office and field equipment, vehicles, fair and effective career progression systems, job security, proper staff allocation	♦ Devise mechanisms that will allow for the use of product prices that give a true reflection of resource scarcity	♦ Remove the logging ban and re-introduce controlled logging guided by recommendation s from forest inventories

ISSUE	INDIVIDUAL OPPORTUNITIES	INSTITUTIONAL OPPORTUNITIES	SYSTEMIC OPPORTUNITIES
		♦ Introduce or revise management plans to truly address current situation requirements	♦ Revise forest policy, fisheries policy, wildlife policy, to give more prominence and value to the currently marginalized natural resources such as biodiversity and other non-wood forest products
		♦ Adopt proper land conservation/husbandry techniques for on-farm and off-farm forestry	♦ Promote conservation measures for local natural resources to avoid exotics such as invasive alien species. For example, promote indigenous tree species in the forestry sector
		♦ Increase budgetary allocations to all sectors dealing with deforestation related programs	♦ Revise the Forest Act so that it is not subservient to other Acts such as the Land Act
		♦ Promote intra and inter sectoral collaboration in forest management	♦ Enforce the 10% forest covenant on agricultural estates

ISSUE	INDIVIDUAL OPPORTUNITIES	INSTITUTIONAL OPPORTUNITIES	SYSTEMIC OPPORTUNITIES
		♦ Introduce a more effective data and information management system that effectively and efficiently deals with the process from collection, storage, analysis, and dissemination	♦ Enforce regulations that will discourage encroachment and excisions in forest reserves, national parks, and game reserves
		♦ Design more efficient and effective research programs that are demand driven from a bottom up perspective	♦ Revise the judiciary system to address natural resource management and environment offences more efficiently and effectively
			♦ Enforce the ban on riverbank cultivation

In general, there is need for additional human and capital resources and the provision of a well-functioning forest institution in the implementation of the new forestry policy and Act. This will facilitate a critical examination of the various policy and market failures outlined. This will also make possible the generation of proper solutions if deforestation in Malawi is to be put under control.

Although emphasis on deforestation has been made above as a major cause of priority issues, it should be recognized that this has involved a degree of simplification. In reality, the situation on the ground is more complex because other socio-economic impacts play an important role in addition to deforestation. Overall, it is understood that markets provide the most efficient means of allocating scarce resources, although not necessarily the most equitable. In a competitive environment, participants are encouraged by prices to maximize productivity of resources and grow in businesses. However, some markets are subject to failure, particularly with respect to environmental goods and services. Causes of market failure may include: externalities (i.e. where certain costs and benefits are not included in market prices); un-priced assets or missing markets (which then stifle incentives); treating the environment as public goods (resulting in no incentives to provide services because open access already exists); undefined or unenforceable

property rights (which again encourages open access and removes incentives for productivity); lack of information and uncertainty (which then lead to improper decision-making with regard to economic activities).

2.3.7 Institutional Arrangements

Multilateral environmental agreements (MEAs) have distinct objectives, mandates and, most importantly, membership. For that reason there must be respect for the independent legal status of those bodies and conventions. An architecture should be developed at national level that will bring the three Rio Conventions together to combine their strengths, to leverage increased financial resources in the light of their complementary nature. Although emphasis has been on synergies and linkages between the Rio Conventions, synergies between all sustainable development instruments (such as PRSPs) are important. More specifically, linkages with the Ramsar Convention on Wetlands must be emphasized as well because wetlands serve to effectively buffer habitats from drought and desertification. There is a need to build capacities for synergies at the systemic, institutional and human levels both nationally and locally.

At the national level the three Rio Conventions should be coordinated by the same ministry or have a coordinating body, as appropriate. National coordinating bodies working with intersectoral committees and legislative processes can alleviate the difficulties of achieving more integrated planning, reduce overlapping and promote cross-cutting issues. The NCSA has identified gaps and potential for a more synergistic implementation of the Conventions at the programme and project level, notably in the sectors of afforestration and land-use improvement and advocated the development of such tools as impact assessment, biodiversity prioritization, and technical guidelines. Currently, EAD is the focal point for the UNFCCC and the UNCBD while the Forestry Department is the focal point of the UNCCD. On the other hand, the RAMSAR convention is coordinated by the Department of National Parks and Wildlife.

From the foregoing, it is clear that a Coordinating body for the three conventions, including the RAMSAR, is needed for Malawi. Strengthening already existing institutions will be the preferred route. Such a body should be hosted by the EAD. It should be responsible for implementing the Action Plan.

CHAPTER 3. ACTION PLAN FOR ENVIRONMENTAL CAPACITY DEVELOPMENT

This chapter presents the Action Plan resulting from the NCSA process. It is based on the cross-cutting synergistic assessments made from an examination of the issues identified from the three conventions as outlined in section 2.3.4.

3.1 Categorisation of synergistic issues for the Action Plan

The issues were categorized at the systemic, institutional and individual (human) levels, as follows:

3.1.1 Systemic level synergistic issues

- Conflicting policies and legal framework
- Weak enforcement of relevant laws and regulations

3.1.2 Institutional level synergistic issues

- Inadequate awareness and utilization of indigenous knowledge systems
- Ineffective and inefficient institutional linkages and approaches
- Inadequate or lack of infrastructure and equipment
- Inadequate and or unsustainable funding mechanisms
- Inadequate availability and poor accessibility to data and information
- Inadequate and/or inappropriate conservation measures
- Lack of mechanisms for access to relevant technologies
- Unsustainable utilization and lack of mechanisms for equitable sharing of benefits
- Lack of or uncoordinated research
- Weak community participation in the conservation and sustainable management
- Inadequate public awareness
- Inadequate diversification in alternative sources of energy

3.1.3 Individual (human) level synergistic issues

- Inadequate and/or Inadequately skilled or trained manpower resources
- Low morale of public servants
- Limited staff incentives especially in the public service

3.2 Vision, Goal and Guiding Principles

This Action Plan, focusing on environmental management, is an integral part of sustainable development. Therefore, it has the same vision and goal as stated in the National Strategy for Sustainable Development (2004), whose vision is further based on the Nation's Vision 2020, as follows:

Vision: By the year 2020, Malawi as a God-fearing nation will be secure, democratically mature, environmentally sustainable, self reliant with equal opportunities for and active participation by all, having social services, vibrant cultural and religious values and being a technologically driven middle-income economy.

Goal: Manage the environment responsibly, prevent degradation, provide a healthy life for all, protect the rights of future generations and conserve and enhance biological diversity.

Guiding Principles:

The following guiding principles are derived from several sources used in environmental management in Malawi, including the Malawi National Strategy for Sustainable Development, Management Plans (e.g. for Lake Chilwa), National Environmental Policy, etc.

1. Be committed in fulfilling the requirements of Section 13 of the Malawi Constitution (1995) in managing the environment responsibly and enhancing the quality of life.
2. Be in line with regional and international conventions and protocols to which Malawi is signatory.
3. Principle of transparency, openness and popular participation in decision making.
4. Address root causes of environmental degradation and treat the environment as an economic good.
5. Restoration, maintenance and enhancement of the ecosystems and ecological processes essential for the functioning of the biosphere and prudent use of natural resources.
6. Be imbedded in the nation-wide decentralization and management and ownership at the lowest appropriate level i.e. community based natural resources management.
7. All sectors of the economy to optimize use of environmentally friendly (appropriate) technologies and undertake mitigation measures for adverse environmental impacts.
8. Cooperation with other Government and relevant international organizations, local communities, NGOs, and the private sector in the management and protection of the environment.
9. Include capacity building and training support at all levels for sustainable development including inclusion in the education curriculum and courses.

3.3 The Action Plan 2006 - 2010

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 1: Inadequate public awareness **Objective: Promote public awareness to implement the three conventions**																
1.1 Strengthen the communication unit of institutions such as EAD, FD, MoA	1.1.1 Establish information networks	Resource centres	Borrowers' Register, Number of collections		X		EAD	National Library Service, DoF, MET, MoA	X	X	X	X	X	Computers, Stationery, Furniture, Internet connectivity	x	x
		Websites/databases	Domain name acquired, Website hosted		X		EAD	DISTMIS, DoF, MoA, DNPW	X		X		X	Software, Computers, Network equipment		x
		Newsletters	Circulations		X		EAD	FECO, MMCT, WESM, CURE	X	X	X	X	X	Computers and accessories, stationery.	x	x
	1.1.2. Conduct sensitization campaigns at all levels	Meetings conducted	Reports/Minutes		X		EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	x	x
		Materials(calendars, T-shirts, banners etc)	Number of materials circulated		X		EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Production and circulation costs	x	x
		Radio/TV programmes	Programs aired		X		EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Recording/ Air time costs,	x	x

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
		Press release, Press Conferences, round table discussion, phone in programme	Programs aired		X		EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Recording/ Air time costs,	X	X
	1.1.3. Conduct competitions at all levels on the three conventions	School competitions (e.g, essays, poems, drama, songs)	Awards	X	X		EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Scholarships, Operational costs	X	X
1.2. Develop and improve the capacity of media houses and relevant programmes	1.2.1 sensitizing/train journalists on environmental reporting	Workshops, Internal workshop/exchange program, Editing and broadcasting equipment identified/ procured	Number of Programs and articles		X		EAD	NHBG, MET, DoF, MoA, DNPW, FECO, COJEA	X	X	X	X	X	Broadcasting equipment, Operational costs	X	X
1.3. Strengthen and expand the environmental curricula at the school system at all level	1.3.1 Review school curricula at all levels	New curricula and learning materials developed	New syllabi, New teaching and learning material		X		EAD	MIE, MoEVT, Universities/Colleges, MIJ	X	X	X	X	X	Production costs	X	X
	1.3.2 Conduct public lectures on the conventions	Teachers/Tutors/ Instructors oriented, Topical/public lecturers in learning institutions conducted.	Reports		X		EAD	Universities/Colleges, NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational Resources		

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 2: Inadequate skilled or trained manpower **Objective: Strengthen the individuals and institutional capacity in the implementation of the conventions**																
2.1. Build relevant skills of individuals in areas such as inventory management, monitoring and integrated assessment	2.1.1 Offer specialized training	Staff trained (GHG, species, integrated assessment, vulnerability, adaptation) PhD, MSc, short course	No. of staff trained	X			EAD	Universities/Colleges, NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Fees, travel expenses, operational expenses	X	X
	2.1.2 Conduct fellowship programs with appropriate institutions – locally or international (externally)	Staff seconded	No of staff seconded	X	X		EAD	DHRMD, Universities/Colleges, NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Fees, travel expenses, operational expenses	X	X
	2.1.3 Acquire and install monitor equipment	Equipment sourced and installed	Equipment	X	X		EAD	NHBG, MET, DoF, MoA, DNPW, FECO, COJEA	X	X	X	X	X	Various equipment and accessories, operational expenses	X	X
	2.1.4 Recruitment and deployment of skilled personnel	Skilled staff recruited and deployed and vacant posts filled	Staff returns, reports	X	X		EAD	DHRMD, MET, DoF, MoA, DNPW, NHBG	X	X	X	X	X	Operational expenses	X	
	2.1.5 Acquisition of necessary scientific and tool kits	Referal laboratories established, Tool kits and acquired/develop	Labs constructed and equipment in place	X	X		EAD	Universities/Colleges, NHBG, MET, DoF,	X	X	X	X	X	Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
								MoA, DNPW,								
2.2. Build capacity of all relevant institutions at all various levels on the three thematic areas:	2.2.1 Train staff in specialized areas	Specialised skills developed (Environmental Education, Climate Change, Water and air quality)	Training reports	X	X		EAD	DHRMD, Universities/Colleges, NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Fees, travel expenses, opeartional expenses	X	X
Capacity Issue 3: Weak community participation in the conservation and sustainable management of ENRM Objective: Promote community participation in ENRM																
3.1 Strengthen multisectoral forums to address the three conventions	3.1.1 Revive CBNRM committees (BVCs, VNRCMs)	Community action plans developed, Meetings and exchange visits held, Bye-laws developed, Management agreements signed(Benefits shared), Project developed and implemented	Plans documented,	X	X	X	EAD	NHBG, MET, DoF, MOA, DNPW	X		X			Operational expenses	X	X
	3.1.2 Conduct participatory monitoring and evaluation	Resource profiles developed	Reports	X	X	X	EAD	NHBG, MET, DoF, MOA, DNPW,	X		X			Operational expenses	X	X
3.2 Strengthen Local Govern. Institutions at DA level	3..2.1 Devolve planning and budgeting to DAs	Budgeting and planning prepared at DAs level	LA funded directly		X	X	EAD	Local Governme nt, MET, DoF, MoA,	X	X	X	X	X	Operational expenses	X	

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
								DNPW								
	3.2.2 Fill ENRM vacant posts as established by Local Government	Post filled (EDOs, DFOs, Wildlife	Staff returns, reports	X	X	X	EAD	Local Governme nt, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	X
	3.2.3 Conduct training (Local Assembly staff)	Local Assembly Staff trained (CBNRM)	No of staff trained	X	X	X	EAD	DHRMD, Universitie s/Colleges , NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Fees, travel expenses, operational expenses	X	X
	3.2.4 Revamp DESC activities	DESC planning meetings conducted, EMP appraised monitored and evaluated..	Reports/Minute s	X	X	X	EAD	Local Governme nt, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	
Issue 4: Inadequate Availability and poor accessibility to data and information **Objective: Promote availability and accessibility to data and information on the three thematic areas.**																
4.1 Develop and promote Environmental Information Management Systems	4.1.1 Train staff in data management (collection, compilation and analysis)	Staff trained in Data collection and compilation, analysis and presentation, and websites/database s created.	No. of staff trained	X	X		EAD	DHRMD, Universitie s/Colleges , NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Fees, travel expenses, operational expenses, computers and accessories	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
	4.1.2 Conduct Public awareness.	Public sensitised on availability in various sectors	Reports	X	X		EAD	NHBG, MET, DoF, MoA, DNPW,	X		X			Operational expenses	X	X
	4.1.3 Established and strengthen existing resources centre at local level and (Environmental information networks)	Information nodes established and strengthened (National Library, NICE), databases developed	Borrowers' Register, Number of collections		X		EAD	National Library Service, DoF, MET, MoA	x	x	x	x	x	Computers, Stationery, Furniture, Internet connectivity	X	X
Capacity Issue 5: Lack and or Weak enforcement of relevant laws and legislation **Objective: Develop and strengthen enforcement of relevant environment law and legislation**																
5.1 Formulate/develop some ENRM legislation	5.1.1 Develop and review appropriate ENRM policies and legislation	Policies and legislation developed eg. MET, Local Govt	Issues reports, New/revised policies and legislation		X	X	EAD	Local Governme nt, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 6: Inadequate access to relevant technologies **Objective: Improve access to appropriate technologies**																
6.1 Strengthen extension services of the public and NGO agencies	6.1.1 Train frontline staff	Staff trained (Focal points, IAS, Exec. Agencies, Civil Society, NGOs.	Training Reports	X	X		EAD	DHRMD, Universitie s/Colleges , NHBG, MET, DoF, MoA,	X	X	X	X	X	Fees, operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
								DNPW								
	6.1.2 Conduct awareness campaign on available techniques	Public sensitised on availability in various sectors	Reports	X	X		EAD	NHBG, MET, DoF, MoA, DNPW,	X		X			Operational expenses	X	X
6.2 Strengthen the adoptive research capacity or research institutions	6.2.1 Conduct on farm/site trials	Participatory trials conducted on appropriate technologies.	Reports		X		EAD	NRCM, Universities/Colleges, NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
	6.2.2 Conduct field days	Field days conducted	Reports		X		EAD	NRCM, Universities/Colleges, NHBG, MET, DoF, MoA, DNPW		X	X	X	X	Operational expenses	X	X
Capacity Issue 7: Inadequate mechanisms to regulate benefit sharing **Objective: Promote/strengthen regulatory mechanisms to ABS**																
7.1 Increase capacity to implement co-management arrangements	7.1.1 Develop regulations on ABS	ABS regulations developed.	Draft/final regulations		X	X	EAD	Treasury, Justice, NHBG, MET, DoF, MoA, DNPW,	X	X				Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
	7.1.2 Develop management agreements	Co-management arrangements, concessions	MoUs, Reports		X	X	EAD	Justice, NHBG, MET, DoF, MoA, DNPW,	X	X				Operational expenses	X	X
	7.1.3 Conduct participatory resource assessments	Resources monitoring tool kit developed	Toolbox, Reports		X	X	EAD	Justice, NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 8: Inadequate awareness and utilization of indigenous knowledge systems **Objective: Promote integration of awareness and utilization of IKS into convention programmes**																
8.1 Strengthen linkages with government, NGOs, academic, CBOs	8.1.1 Develop and implement the public sensitization on IKS	Public sensitization on IKS Developed and implemented	Reports	X	X		EAD	NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	X
	8.1.2 Mainstream IKS in the curricula of tertiary training institutions	IKS mainstream in curricula	New syllabi, New teaching and learning material		x		EAD	MIE, MoEVT, Universities/Colleges, MIJ	x	x	x	x	x	Production costs	x	X
	8.1.3 Mainstream IKS in development projects	IKS mainstream in development projects	Project proposals, Reports	X	X		EAD	NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 9: Conflicting policies and Legislation **Objective: Harmonise ENRM polices and legislation**																
9.1 Strengthen collaboration and coordination among ENRM sectors	9.1.1 Revive NEFP for ENRM	NFFP in place and functional	Minutes/Reports		X		EAD	NHBG, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	X
	9.1.2 Review the various NR Sector Policies	Local Govern Act, Irrigation Act Forestry Act, Fisheries Act Lands Act harmonized	Issues reports, New/revised policies and legislation		X	X	EAD	Local Government, MET, DoF, MoA, DNPW,	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 10: Limited incentives for public sector staff coordinating/implementing the Rio conventions **Objective: Enhance the morale of public sector staff**																
10.1 Introduce incentives scheme for public sector staff	10.1.2 Set up appropriate mechanisms for administration of the proposed scheme	Incentive scheme operational	Reports		X	X	EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 11: Lack of synergies in research activities (lack of coordination of research related to articles of the three conventions) **Objective: Improve synergies in research activities between research and policy**																
11.1 Promote collaborative research	11.1.1 Draw a research master plan	Master plan in place	Draft/Final Master plan		X		EAD	Treasury, DHRMD, MET, DoF,	X	X				Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
								MoA, DNPW, NGOs								
	11.1.2 Prepare research proposals	Projects funded and implemented	Research publications		X	X	EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 12: Inadequate and or unsustainable financing mechanism Objective: Improve financial resource base to implement the conventions																
12.1 Expand financing sources for the existing funding framework	12.1.1 Identify funding sources	Funding sources identified (levies fees Royalties Penalties	Books of accounts opened		X	X	EAD	Treasury, MEET, MMCT, MET, DoF, MoA, DNPW, NGOs	X	X	X	X	X	Operational expenses	X	X
	12.1.2 Gazettment of the fund	Levies fees, Royalties Penalties collected	Gazette article		X	X	EAD	Ministry of Justice, Treasury, MET, DoF, MoA, DNPW,	X	X				Operational expenses	X	X
	12.1.3 Train Enforcement Personnel	12.3 Training conducted and public sensitized	Reports	X	X		EAD	Universities/Colleges, NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 13: Weak institutional linkages amongst focal points and between focal points and executing agencies **Objective: Improve institutional collaboration among focal points and executing agencies**																
13.1 Promote joint programmes amongst the conventions	13.1.1 Develop joint programs/projects	Joint Programmes/projects developed	Implementation Reports		X	X	EAD	NHBG, MET, DoF, MoA, DNPW	X	X				Operational expenses	X	X
	13.1.2 Hold joint Steering Committee meetings	Steering Committee meetings conducted	Reports		X	X	EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
	13.1.3 Draw partnership agreements	Meetings conducted, MoUs developed	Signed MoUs		X	X	EAD	NHBG, MET, DoF, MoA, DNPW	X	X	X	X	X	Operational expenses	X	X
Capacity Issue 14: Inadequate or lack of infrastructure **Objective: Improve access to appropriate infrastructure for implementation of the conventions**																
14.1 Determine specific infrastructure requirements	14.1.1 Establish reliable information network facilities	LAN/wireless, VSAT installed	Internet connectivity in all offices		X		EAD	DISTMIS, DoF, MoA, DNPW	X	X	X	X	X	Network Equipment, Computers, Operational expenses	X	X
	14.1.2 Construction referral laboratories and institutional offices	laboratories and offices constructed equipped/furnished	Reports		X	X	EAD	NHBG, MET, DoF, MoA, DNPW		X	X	X	X	Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 15: Inadequate capacity to generate appropriate alternative livelihoods to ENRM Objective: Promote access and utilize appropriate alternative livelihoods.																
15.1 Promote the integration of alternative livelihoods in programs of the conventions	15.1.1 Develop the appropriate alternative source of energy	Appropriate alternative developed	Alternative technologies available at distribution points		X	X	Energy Affairs Dept	Finance, MRA, EAD, DoF, Mines, WICO, MCCCI, BOC, Ethanol	X	X	X	X	X	Operational expenses	X	X
	15.1.2 Introduce IGAs through clubs (eg bee keeping)	IGAs introduced	Implementation Reports		X	X	DNPW	Gender and Child Development, Local Govt, EAD, DoF, DoFiCOMPASS, WESM, MCCCI, CURE, DHA	X	X	X	X	X	Operational expenses	X	X
	15.1. 3 Establish Carbon Trading Scheme	Carbon Trading Scheme established	Implementation Reports	X	X		DoF	Gender and Child Development, Local Govt, EAD, DoF, LEAD, Universities, MCCCI	X	X	X	X	X	Operational expenses	X	X

Strategy	Activity	Output	MOV	Target			Institution		Time frame					Resources	Source	
				Ind	Inst	Syst	Lead	Partner	1	2	3	4	5		Int	Ext
Capacity Issue 16: Excessive deforestation **Objective: Reduce deforestation and rehabilitate graded lands**																
16.1 Devise mechanisms that will allow for the use of product prices that give a true reflection of resource scarcity																
16.2 Introduce or revise management plans to truly address current situation requirements																
16.3 Increase budgetary allocations to all sectors dealing with deforestation related programs																
16.4 Promote intra and inter sectoral collaboration in forest management																

3.4 Implementing the Action Plan

In summary, it is recommended as follows:

- Seek and obtain high-level political support and managerial endorsement;
- Seek funding to finance an implementation structure;
- Joint work programmes at the national level should be formulated between the conventions;
- A Joint liaison group of the three Rio conventions and potential additional members from other MEAs should be formed with an open and flexible coordination framework.
- Joint activities should be planned taking into account the following elements:
    - Integration of activities related to national biodiversity strategies and action plans with national action programmes for the Convention to Combat Desertification, national adaptation programmes of action under the United Nations Framework Convention on Climate Change, Ramsar wetland policies, CITES programmes and other relevant programmes, including national strategies for sustainable development and poverty reduction;
    - Capacity-building (including MEAs negotiations), information systems (harmonize information mechanisms into one common mechanism), institutional arrangements and joint planning activities between the coordinating bodies and focal points of the conventions;
    - Development of criteria for synergy projects and development and application of "good practice" synergy projects at the national level. Identify and implement pilot projects taking into account the three conventions' objectives and perpetuate synergetic actions through the diffusion of successful initiatives;
    - Extend biodiversity Clearing-House Mechanism to other conventions which will allow integrated management of development initiatives;
    - Sound preparation, formulation of objectives, organization and follow-up of national synergy workshops;
    - Training courses and awareness-raising among relevant stakeholders, focusing on policy makers in order to favour the integration of the conventions' objectives in the national socio-economic development plans. These training sessions and workshops should address funding procedures;
    - Consultation, decision-making and implementation processes with the full participation of relevant stakeholders, including local communities, non-governmental organizations and the private sector.