

**NATIONAL ENVIRONMENT AGENCY
THE GAMBIA**

***Capacity Building Needs for
Global Environmental Management***

**Based on the GEF Supported
National Capacity needs Self -Assessment (NCSA) Project**

December 2005

Endorsement Letter
Minister for the Environment

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EXECUTIVE SUMMARY

- The National Capacity needs Self Assessment for Global Environment Management (NCSA) Project was a GEF-funded activity implemented by the National Environment Agency of The Gambia. The objective of the project was to assess the capacity constraints and needs in implementing the three Rio environmental conventions on Biological Diversity, Climate Change and Desertification/land degradation, as well as to determine integrated approaches for their implementation. The main outcome of the project would be a strategy and action plan for capacity building to protect the global environment in the Gambia.
- The Gambia is a semi-arid country and prone to recurrent droughts. Rainfall has declined by over 30% in the last three decades adversely affecting the agricultural sector and therefore approximately 70% of the population. Land degradation is an important environmental issue, and as a low lying country the Gambia also stands to be adversely affected by sea-level rise. The current protected area system covers 3.7% of the land area and protects some of the key habitats in this fragile environment. The overall context of the NCSA is therefore one of accelerated natural resource degradation and associated deepening poverty and food insecurity occasioned by the Gambia's very location in the fringes of the Sahel.
- As a signatory to the Rio conventions, the Gambia has certain obligations to protect its biodiversity, respond to climate change and minimise land degradation, all of which requires a sufficient level of technical and managerial capacity. A number of capacity development projects have been undertaken in recent years, and procedures are in place within the different agencies responsible for convention implementation, but a considerable number of capacity needs remain. The NCSA project was conducted within the framework of a broad-based consultative process, instituted in The Gambia for national development planning and programming since 1990, using a "bottom-up" participatory approach. The NCSA was undertaken over a two year period with the participation of all key stakeholders involved in global environmental management.
- Detailed *Thematic Profiles* were produced which took into account requirements of the individual conventions and focused specifically on: the existing institutional framework and responsibilities; the policy environment; organization of research; programmes and projects; major stakeholder organizations; information and databases; policies and regulatory mechanisms; as well as past capacity development initiatives for each thematic area. Extensive consultations were undertaken at national and divisional levels which revealed a total of 103 prioritised issues within the different sub-sectors of three thematic areas of biodiversity, climate change and land degradation. *Capacity Assessments* undertaken by thematic teams identified capacity needs at the individual, institutional and systemic levels for addressing all the priority issues. A *synergistic and cross-cutting capacity needs assessment* revealed 16 cross-cutting capacity issues.
- The NCSA process in the Gambia produced an extremely lengthy list of capacity constraints, making the development of a meaningful strategy very difficult. At a review meeting held in May 2005, when this NCSA document was being finalised, the focal points for GEF and the three conventions prioritised several strategic areas in need of immediate funding. If and when an opportunity for funding arises, these needs will be developed into fundable projects. This NCSA document has the full endorsement of the Government of the Gambia and will be used to guide future national capacity building efforts as well as requests from the international community for capacity building support.

1. PROJECT CONTEXT AND METHODOLOGY

1.1 Rationale and Context of the NCSA

The Rationale for a Capacity Assessment

Global Environmental Management in The Gambia

The Gambia is a party to the three Rio Conventions on Biodiversity, Climate Change and Desertification/Land Degradation. It ratified the Conventions on Biodiversity and Climate Change on June 10, 1994 and that on Desertification/land degradation on June 11, 1996. The National Environment Agency (NEA) has overall responsibility for multi-sectoral natural resource management planning, whilst the focal points for the individual conventions are based within the relevant line departments: UNCCD within the Department of Forestry, UNFCCC within the Department for Water Resources, and UNCBD within the Department for Parks and Wildlife Management.

In order to implement the government's commitments and obligations under the conventions, the Agriculture and Natural Resources (ANR) Working Group of the NEA was mandated to initiate development of action plans for the three conventions. The ANR Working Group appointed a Task Force for each of the three conventions chaired by their respective Focal Points to facilitate the elaboration of the action plans through a broad-based consultative process.

With the technical backstopping services of the World Wide Fund for Nature (WWF) and the financial support of the Global Environmental Facility (GEF), the Task Force on Biodiversity prepared the National Biodiversity Strategy and Action Plan (NBSAP) in 1999. The National Climate Committee (NCC) elaborated a four-part first National Communication in 2003 including a National Climate Change Strategy and Action Plan (NCCSAP) with the technical assistance of GEF/UNEP and financial support under the GEF Enabling Activities Programme. The Task Force on Desertification also prepared a National Action Programme to Combat Desertification (NAP) in 2000 with the financial and technical assistance of the Federal Republic of Germany, the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS) and the United Nations Development Programme/ United Nations Sahelian Office (UNDP/UNSO).

In addition to ratifying the three Rio Conventions, The Gambia has also ratified other international and regional environmental conventions, such as the Ramsar convention on wetlands, CITES, the Bonn convention, the Basel convention, the Bamako convention, the Cartagena protocol on biosafety, the Montreal protocol, and more recently the Abidjan convention.

In spite of the significant successes registered through ongoing capacity building measures, the implementation of the individual conventions, and the implementation of their respective action plans, continues to be impeded by inadequate capacity. The NCCSAP is still in a draft form because of inadequate human and institutional capacity of the NCC and its collaborating institutions to finalize the document, and little has been registered in the way of achievement in the implementation of the NBSAP and the NAP since their adoptions in 1999 and 2000 respectively.

National Environment Framework

The Gambia integrates the obligations associated with the Rio conventions into existing national plans and planning framework through the mechanism of the Gambian Environmental Action Plan (GEAP). The GEAP was adopted by Government in July 1992 to provide the overall national environmental policy framework. The preparation of the GEAP was driven by the national need to address issues of: land degradation, the impact of which has been a decline in food production; salt water intrusion as a result of over-extraction of

groundwater; coastal erosion; over-crowding in the urban and other growth centres leading to poor environmental sanitation; and, increasing air, water and soil pollution. The GEAP emphasizes sustainable economic growth and development, consistent with improvement of the quality of life of the present generation without compromising the right of future generations to environmental resources.

Under the UNDP Capacity 21 project launched in 1994 to support implementation of GEAP I, significant capacity building measures were undertaken as its primary objective. The main objective of the project was to strengthen the institutional capacity of NEA and line departments, Non-Governmental Organizations (NGOs) and local communities involved in the implementation of the GEAP. Other capacity building support projects in the implementation of GEAP I included the IDA/World Bank and German Technical Cooperation Agency (GTZ) support. While the IDA/World Bank assistance concentrated on establishment of environmental management processes and institutional development, and capacity building of NEA, line departments and NGOs, the GTZ assistance concentrated on developing capacities in Environmental Impact Assessment (EIA), amending and implementing environmental legislation and legal reforms, strengthening of the Documentation Centre, and the development and dissemination of environmental information in the form of newsletters.

Ironically, the review of the experience and achievements of GEAP I revealed that its implementation was adversely affected by inadequate capacity for environmental management at the various stakeholder organizations including NEA, government line Departments, the NGO community, the formal private sector and local communities. Thus each of the programme strategy elements of GEAP II is implicitly or explicitly designed to address an aspect of capacity building during the programme period 2000 to 2004. Successful implementation of the GEAP Phase II will result in:

- Improved and strengthened institutional framework for environmental management in place at all levels by 2005
- Environmental considerations included in policy and planning processes at all levels by 2005
- Strengthened regulatory framework and enforcement of the regulatory codes, and environmental regulations fully enforceable and respected by all sectors
- Pathways towards sustainable financing mechanisms for environmental management in The Gambia clearly identified
- Functioning institutional and legal framework in place for sustainable management and protection of the coastal zone and its resources
- Strengthened advocacy and sensitisation for sustainable development
- Private sector and parastatals engaged in dialogue for sustainable resource use.

Considerable progress has been made within GEAP II but the programme has been constrained by lack of commitment from donors.

Context for the NCSA

The Republic of The Gambia is located in the valley of the Gambia river on the west coast of Africa stretching as a narrow band of land, approximately 480km long varying in width from 48km near the estuary of the river to 24km inland. It has a land area of 11,300 sq. km. It is bordered on three sides by Senegal and dissected by the Gambia River into North and South Banks.

Administratively the Gambia is divided into seven divisions: Two Municipalities – Banjul City Council and Kanifing Municipalities and five provincial divisions - Western Division (WD), North Bank Division (NBD), Lower river Division (LRD), Central River Division (CRD),) and Upper River Division (URD). Politically, the relevant units are Local Government Areas (urban), District, Wards and Villages. The country has 35 districts and about 1,870 villages with an average of 13 compounds. The Government has been implementing a decentralization policy aimed at devolving responsibility for administration especially natural resource management to the division, district and ward levels since 1990 which is in an advanced stage of implementation.

The country has a population of slightly over 1 million persons and, given its relatively small size, is considered one of the most densely populated countries on the continent. The economy is based entirely on subsistence and cash crop farming, employing an estimated 70% of the population and contributing 30% of GDP. The consequences of a rapidly increasing population striving to survive in a fragile environment are manifested in low farm income, growing rural poverty and household food insecurity, accelerated rural-urban drift. The environmental degradation consequences include loss of biodiversity, soil erosion, declining soil fertility, encroachment on marginal lands, and pollution in urban environments.

Despite its small size, The Gambia accords great importance to the conservation and sustainable utilization of her biological resources. The current protected area system in The Gambia comprises six national parks and nature reserves under the mandate of the Department of Parks and Wildlife Management (DPWM), covering a total land area of 39,772 ha i.e about 3.7% of the Gambia's land area. These are Abuko Nature Reserve, River Gambia National Park, Niimi National Park, Kiang West National Park, Tanji River Bird Reserve and Bao Bolong Wetland Reserve.

Key biophysical and socio-economic indicators for the Gambia

Climate

| | |
|------------------------------|-------|
| Index of aridity | A |
| Normal rainfall: | 16 mm |
| Rainfall standard deviation: | 19mm |

Vegetation and Land Use

| | |
|-----------------------------------------------|-----|
| NDVI (normalized difference vegetation index) | NA |
| Vegetation cover (% of total land area) | 43% |

Land use (% of total land):

| Land use | 1990 – 1999 | 2000 – 2003 |
|---------------------|-------------|-------------|
| Arable crop land | 41 | 40.9 |
| Irrigated | 1 | 1.1 |
| Rainfed | 40 | 39.8 |
| Pasture | 63 | 58.1 |
| Forest and woodland | 42 | 43 |
| Other land | 5 | 12 |

Water Resources

| | |
|---------------------------------------|------------------------------------------|
| Fresh water availability (million m3) | 400 million m3 fresh water River portion |
| Agricultural water use (million m3) | 6,3 |
| Industrial water use (million m3) | N/A |

Types of Land Use

| Land Use | 1990 - | 1999 | 2000 - | 2003 |
|---------------------------|---------|-----------------|---------|-----------------|
| | 000'ha | % of total area | 000'ha | % of total area |
| Closed woodland | 12,000 | 1.1 | 9,600 | 0.9 |
| Open woodland | 88,800 | 7.8 | 56,000 | 4.9 |
| Tree & shrub savannah | 360,800 | 31.9 | 441,200 | 38.8 |
| Agriculture with trees | 85,200 | 7.5 | 86,400 | 7.6 |
| Agriculture without trees | 241,200 | 21.3 | 256,000 | 22.5 |
| Fallow lands | 89,200 | 7.9 | 39,600 | 3.5 |
| Plantations | 1,300 | .13 | 1300 | .13 |
| Mangrove | 59,600 | 5.3 | 51,200 | 4.6 |

People and Economy

| | |
|-----------------------------------------------|----------|
| Population (total) | 360,000 |
| Population: urban (% of total) | 37.12 |
| Population: rural (% of total) | 62.88 |
| Population growth (annual %) | 2.77 % |
| Life expectation (years) | 58 |
| Infant mortality rate (per 1,000 live births) | 84 |
| GDP Per Capita | \$310 |
| National poverty rate (% of population) | 71% |
| Crop production (metric tons) | 649,649 |
| Livestock production (metric tons) | 1599,365 |

Human Development

| | |
|-----------------------------------------------------|---------|
| Primary education completion rate (% age group) | 80 |
| Number of women in rural development (total number) | 142,178 |
| Unemployment (% of total) | 26 |
| Illiteracy rate (% age 15 and above) | 64.5 |

1.2 Methodology

The overall objective of the NCSA project was to systematically assess The Gambia'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. The NCSA was originally planned to be undertaken in six stages.

- The first stage of the process would involve *establishing the appropriate co-ordination mechanisms* for implementing the project.
- This would then be followed by a *stock-taking exercise* which would focus on identifying, reviewing and confirming the priority issues within each thematic area.
- The third stage would be a *capacity assessment* within the three thematic areas of the 3 Rio conventions, identifying the capacity constraints at the individual, institutional and systemic levels.
- The fourth stage would then look at *cross-cutting capacity needs* across the thematic areas and identify any potential synergies.
- This would be followed by the *development of an NCSA Strategy and Action Plan*.
- The sixth and final stage would be the *monitoring and implementation* of the Action Plan.

The Gambia had acquired some experience in terms of engaging stakeholders in the elaboration of development strategies and action plans. Following the ratifications of the 3 Rio conventions, three task forces/ committees were established to lead the preparation and eventual implementation of the respective strategies/action plans, at both the national and local or grassroots levels. The NCSA process has been able to build on the experiences of that process in identifying the capacity needs for environmental management.

Stage 1 Co-ordination

The NCSA Project in The Gambia began in December 2002 with the establishment of the project within the National Environment Agency and the appointment of a Project Coordinator. Three Thematic Assessment Teams (TATs) were then established for each thematic area, headed by the relevant convention Focal Point (see Annex 2). The TATs were constituted from the existing Biodiversity Task Forces, Climate Change Committee and Desertification Task Force. Overall co-ordination of the process was managed by the ANR Working Group which is a multi-stakeholder group bringing together all the key players within the sector. The project was formally launched at a Start Up Workshop in January 2003.

A high level co-ordination committee comprising representatives from the State Departments of Finance, Natural Resources and the Environment, Office of the President, Personnel Management and the focal point secretariats of the 3 conventions, was established in January 2003. The committee, which met regularly throughout the period, reviewed progress, provided overall policy guidance and took important decisions during the project execution. The committee also ensured that project execution modalities conformed to established government procedures and regulations.

Stage 2 Stocktaking

The stocktaking exercise was undertaken by the Thematic Assessment Teams (TAT), under the chairmanship of the Focal Point of each convention and including the core stakeholders in the technical line departments and NGOs. The majority of these core stakeholders had been involved in the implementation of the action plans of the respective conventions, and they were therefore appropriate teams for the exercise.

The stocktaking involved a review of the roles and responsibilities of the relevant institutions for each thematic sector, a review of the policy, legislative and administrative structures, a review of existing projects, programmes and research, past capacity development initiatives, and a detailed investigation into activities undertaken towards fulfilling national obligations for each of the respective conventions. The TATs conducted consultations with all relevant stakeholders and utilized questionnaires where appropriate. A number of consultations were held at the divisional level.

Once all the information had been collated and processed the TATs proceeded to identify the priority issues for their sector, identifying which issues were the most pertinent according to a set of ranking criteria. These issues would then become the focus of the capacity assessment. The results were presented in three detailed thematic profiles, which were reviewed by the NCSA Project Co-ordinator, the ANR Working Group and UNEP.

Stage 3 Thematic Capacity Assessments

With the completion of the thematic profiles the TATs proceeded to undertake the capacity assessment process, under the technical guidance of a National Consultant. (The national consultant who had worked with the TATs in the capacity assessment and who further conducted the assessment on Synergies was selected through an open competition process.) Assessment was made at three levels: individual, institutional and systemic for the priority issues that had been identified using the Capacity Constraints Matrix. The results of the stocktaking exercise and capacity assessment were then amalgamated into draft reports which provided the background documentation for an extensive divisional level consultation process.

Divisional workshops

The NCSA was implemented and conducted within the framework of the established national consultative process. The Programme for Sustained Development (PSD) adopted in 1990 as the then framework plan for the socio-economic development of the country had initiated a process of national reflection on poverty issues and participatory approaches which became instituted as a broad-based national consultative process. The process consists of four main levels: local, divisional, sectoral and national levels. Consultation at these levels provide the foci of participation of the whole spectrum of stakeholders which usually takes the form of a “bottom-up” approach for the planning of important national programmes such the GEAP, the SPA, the Vision 2020 and the Action Programmes of the three Rio Conventions.

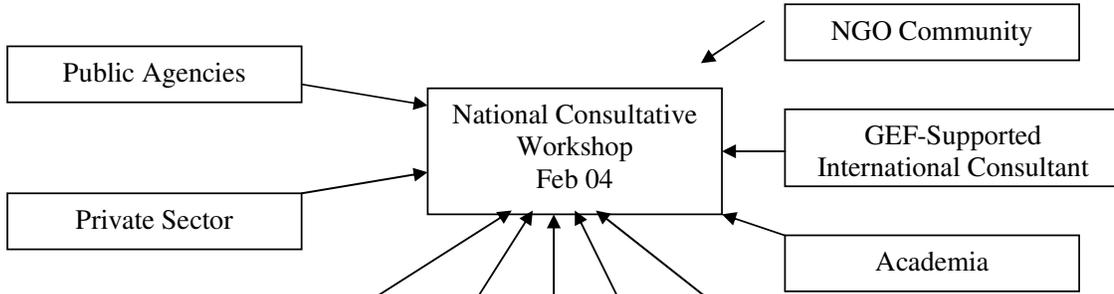
For the NCSA process divisional consultative workshops were held at each of the five administrative headquarters of the country under the aegis of their Divisional Coordinating Committees (DCCs), working through their respective Agriculture, Natural Resources and Environment (ANRE) sub-committees.

The 3 draft reports were sent to each DCC in each Division for their review before convening the workshop. Guidelines for the review were also provided to facilitate the whole process. On average about 45 participants attended each of the five consultative workshops. These participants were drawn from all strata of the civil society including traditional rulers, women groups, youth groups, NGOs and public agencies operating in each division. The workshops followed the same format: A presentation was made on the background to the NCSA process, its objectives and expected outcomes; A presentation was made on the methodology of the consultation exercise, linking it to previous consultations conducted during the development of the Rio Convention Action Plans; Presentations were then made by the three Focal Points on their findings to date within the NCSA process; And then finally the meetings divided into working groups to go through each Capacity Assessment in detail.

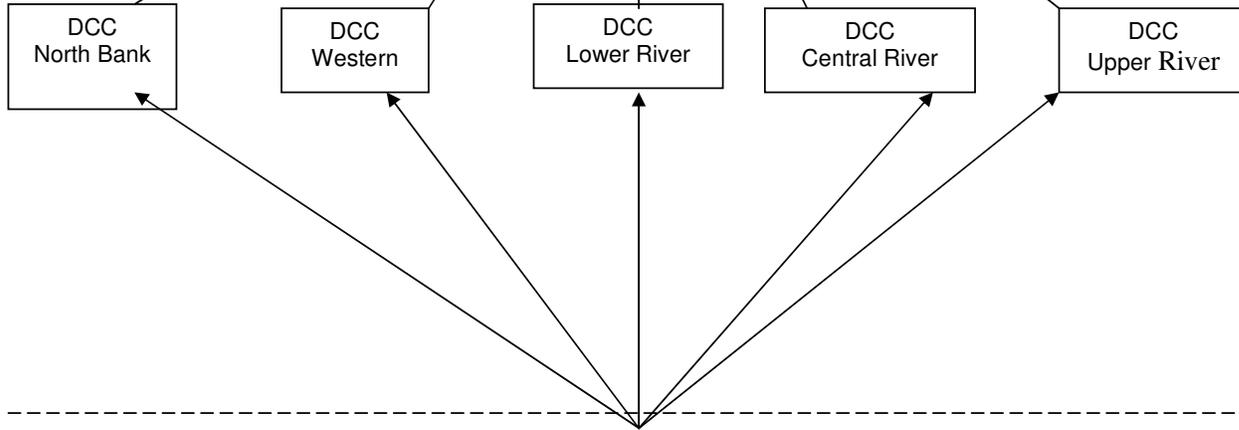
Figure 1 provides a schematic representation of the process and key stakeholders involved.

Figure 1 The NCSA Consultative Process at Different Levels

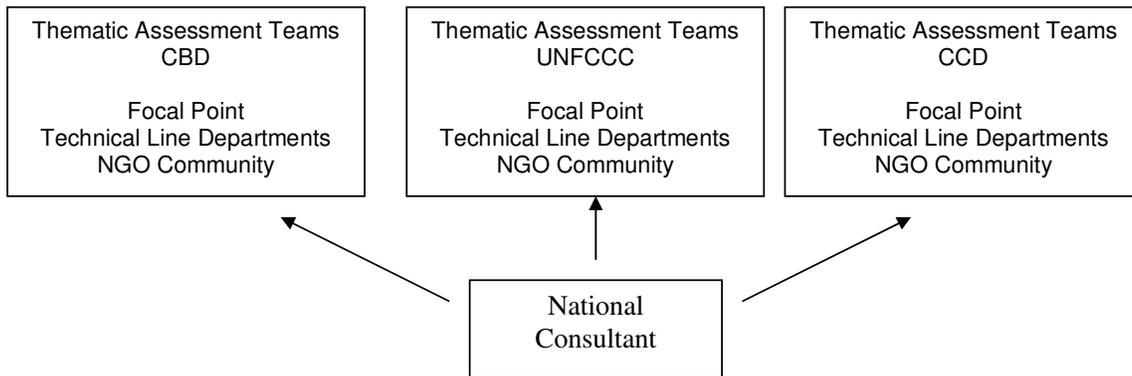
NATIONAL LEVEL



DIVISIONAL LEVEL (Divisional Coordinating Committees)



SECTORAL LEVEL



The Divisional consultative meetings were chaired by the Divisional Commissioners, in their capacities as the Chairpersons of the DCCs. The three Focal Points and the national consultant provided technical backstopping. The recommendations were then annexed to the draft assessment reports.

National Workshop

The revised thematic assessment reports then provided the background documentation for a National Stakeholders Validation Workshop in February 2004. The National Workshop was organized under the aegis of the Department of State for Fisheries Natural Resources and Environment (DOSFNRE) working through the National Environment Agency as the implementing agency of the NCSA Project. Over 30 representatives participated in the national level consultation and priority setting workshop. These included representatives from the DCCs, all public agencies involved in the implementation of the action plans of the three Rio Conventions, the NGO Community, the academia and the private sector.

The workshop objective was to validate the thematic assessment reports after the divisional level review. The workshop was facilitated by an international consultant. During the initial plenary, the participants were taken through an Issues Prioritization Matrix to demonstrate how to rank issues using 3 sets of criteria namely: *Scale of the problem*, *Level of concern*: and, *Ability to adequately address the problem*. This was followed by a demonstration of a final *Priority Ranking* using a scale of 1 – 5. Participants were then taken through the next stage of the assessment exercise where capacity constraints for each issue had been categorized into the 3 capacity building levels of *Individual*, *Institutional* and *Systemic* using a Capacity Constraints Matrix

At the end of the presentations, the participants were divided into 3 thematic Working Groups in order to review their respective reports within the framework presented by consultant. A number of revisions were made, and the participants welcomed the participatory nature of the NCSA process. The reports of the working groups were incorporated in the draft assessment reports to produce the final Thematic Assessment Reports.

Stage 4 Cross-cutting Analysis and Synergies

The national consultant who had been working with the TATs then proceeded with the next phase of the NCSA process: the identification of cross-cutting capacity issues and synergies. The consultant was set some very specific tasks in the light of the findings of the NCSA so far, including:

- Conducting a detailed review of the existing institutional framework for managing the conventions at the national level to further identify opportunities to enhance/ensure integration of the cross-cutting issues of the conventions into existing planning and decision-making structures and processes.
- Determining what the constraints and limitations are to ensuring better integration of cross-cutting issues across the 3 conventions.
- Assessing the level of awareness of cross-cutting issues for the 3 conventions and how much attention is given to them based on current national legislations, institutional arrangements, lines of reporting, programmes and projects.
- Reviewing the thematic reports of the 3 conventions to identify and confirm the cross-cutting issues and their accompanying capacity needs
- Proposing ways of integrating the cross-cutting issues to attain maximum synergistic effects among the 3 conventions.
- Facilitating a workshop and present the findings to a combined group of the Assessment Teams to review, confirm and identify priority issues for capacity building to enhance synergy among the 3 conventions.

Based on the nationally validated reports on capacity assessment within the thematic areas of the three Rio Conventions, the consultant conducted a capacity assessment process across the conventions in consultation with the Focal Points. The draft report of this assessment was finalized into "Assessment of Synergies" with the incorporation of the comments of a workshop of a combined group of TATs held on 18 May 2004.

Stage 5 Strategy and Action Plan Development

The extent of the capacity needs identified during the previous stages in the NCSA process meant that it was not possible for the thematic assessment teams to develop a meaningful strategy and action plan, as had originally been envisaged. The national consultant prepared one cross-cutting and three thematic projects for consideration by the thematic assessment teams, but given the extent of the capacity needs identified, the projects proved to be too large for consideration. At a review meeting of the NCSA document the focal points then prioritised several of the areas that they would prioritise seeking funding for.

Stage 6 Follow up

The production of this document marks the formal closure of the NCSA process, but a series of next steps have been proposed which the NEA will remain responsible for.

2. IDENTIFICATION OF PRIORITY ISSUES FOR CONVENTION IMPLEMENTATION

The details in this chapter come from the second stage of the NCSA process: a stocktaking exercise undertaken by three Thematic Assessment Teams which led to the preparation of three thematic profiles containing priority issues. The Thematic Profiles each took into account the requirements of the individual conventions and focused on: the existing institutional framework and responsibilities; the policy environment; organization of research; programmes and projects; major stakeholder organizations; information and databases; policies and regulatory mechanisms; and past capacity development initiatives for each thematic area. The review of priority issues revealed a total of 103 prioritised issues within the different sub-sectors of three thematic areas of biodiversity, climate change and land degradation.

2.1 Present conditions for implementing the Rio Conventions

2.1.1 Institutional Framework and Responsibilities

Environmental management in the Gambia functions within the central government framework of the National Assembly, the Cabinet, and thirteen Line Departments of State and Parastatal Organisations. Activities are complemented by a host of bilateral and multilateral development partners, NGOs and Community-Based Organizations (CBOs). The central government development structure is superimposed upon the local government administrative structure of two municipal councils and five provincial administrative divisions.

Responsibility for conservation and management of natural resources in The Gambia cuts across a number of departments within three Departments of State:

- The Department of State for Agriculture (DOSA) with its four technical Departments of Agricultural Services (DAS), Livestock Services (DLS), Planning (DOP) and Cooperative Development (DOC) and the National Agricultural Research Institute (NARI);
- The Department of State for Local Government and Lands (DOSLG&L) with its technical Departments of Community Development (DCD), Lands and Surveys (DL&S) and Physical Planning, (DPP) and Non-Government Affairs Agency;
- The Department of State for Fisheries and Water Resources with its 2 technical arms the Department of Fisheries and Department of Water Resources ;and
- The Department of State for Forestry and the Environment with it 2 technical arms the Department of Forestry and Department of Parks and Wildlife Management

Each of these sectoral departments interacts with the local government administrative structures at the divisional, district and village levels independently.

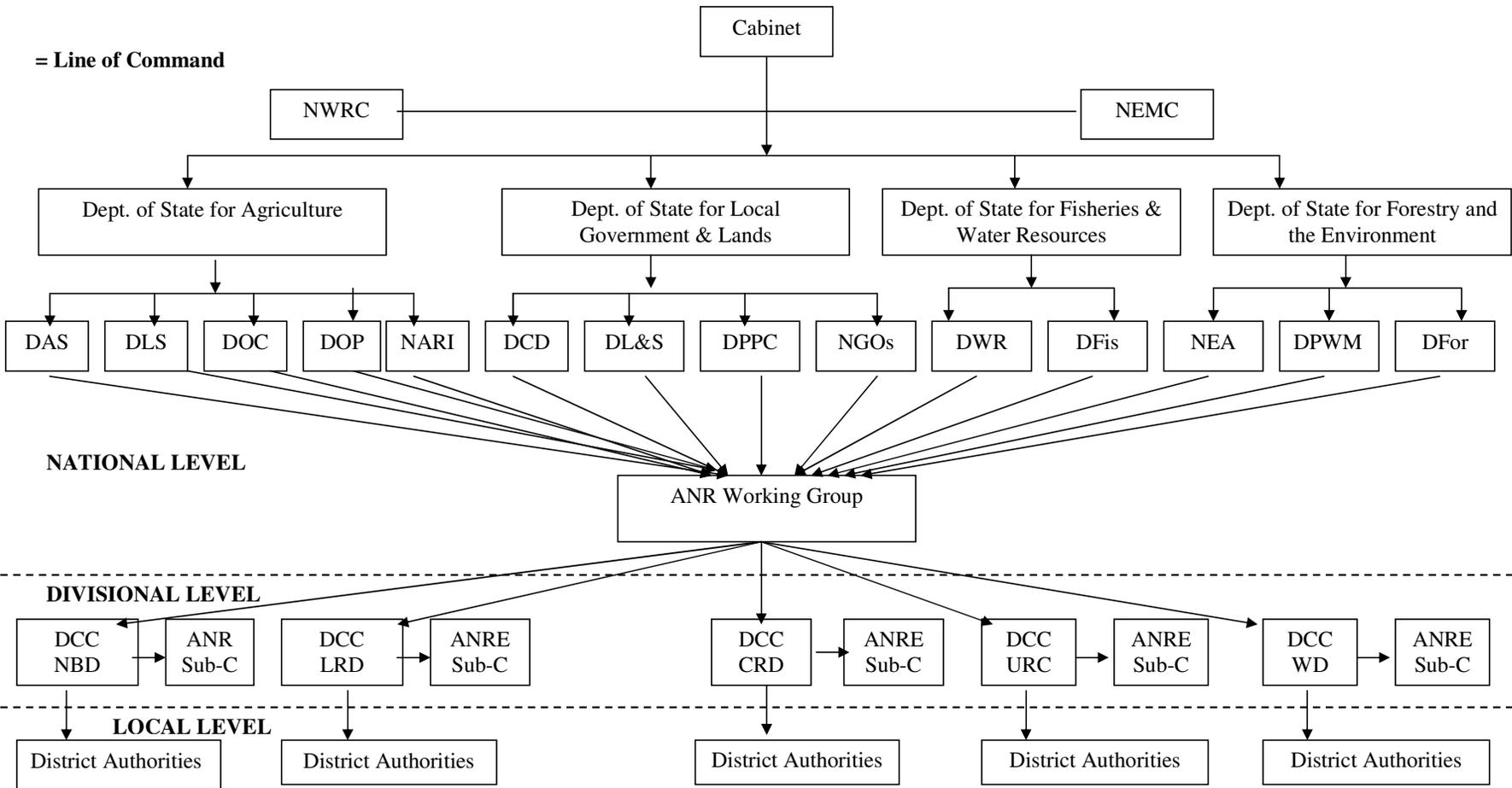
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Figure 2.1 presents the institutional framework for natural resources management.

To enhance the integration of sectoral efforts and minimize conflicts of interest and duplication in resource use, the government has institutionalized coordination at three levels: policy, sectoral and operational. The coordinatory structures are:

- the National Environmental Management Council (NEMC);
- the National Water Resource Council (NWRC);
- the GEAP Process and the National Environment Agency Sectoral Working Groups;
- the Divisional Coordinating Committees (DCC); and,
- Local Government Authorities (District Authorities).

Figure 2. Institutional Framework for Natural Resource Development Management



2.1.2 The Existing Policy Environment

The macro-economic framework is a free market one with the primary aim of creating an enabling environment for a private sector-led growth development strategy, although the Government continues to maintain tight financial policies and a market-determined exchange rate. In response to the underlying structural inadequacies and weaknesses of the economy, the Government formulated and articulated The Gambia Incorporated ...Vision 2020 in May 1996 with the overall goal "to transform The Gambia into a highly developed model country by 2020". Sectoral policy issues relevant to the Rio Conventions include:

Energy: The energy resource base of The Gambia comprises electricity, petroleum products, fuelwood, liquefied petroleum gas (LPG) and renewable energy. The key policy concerns are: reducing frequent electricity outage through increase efficiency of the utility sector and promotion of private sector participation in power generation; provision of affordable tariffs for the utility services; installation of effective meters together with vigorous billing system; use of HFO (heavy fuel oil) and demands side management; and, promotion of the use of renewable energy technologies.

Forestry: The main policy concerns are to: preserve, maintain and develop forest land resources covering at least 30% of total land area; ensure that 75% of forest lands are managed and protected; and to ensure sufficient supply of forest products.

Water Resources: The water policies of The Gambia are obsolete due to increased demand and an expanded mandate of the agencies responsible for the management of the water resources of the country. The DWR, with the assistance of donor partners (EC/EDF, UNDP, UNCDF and UNICEF), is currently working on updating of the policies, strategies and regulations of the water resources sector.

Biodiversity: The major policy concerns in biodiversity are developing a comprehensive development policy framework, which includes institutional strengthening of public education to create greater awareness, and community involvement in conservation and research. The recently enacted Biodiversity/Wildlife Bill provides such a framework and addresses all the important concerns to CBD.

2.1.3 Legislation and Non – Regulatory Mechanisms

The legal framework affecting natural resource management in The Gambia can be broadly categorised into five groups. These are natural resource management-specific legal provisions, general environmental legislations, land tenure and land use legislations, public health and production legislations, and international conventions.

Natural Resource Management-Specific Legislations: The Constitution vests all natural resources management in the state, which in turn ensures that the resources are utilized for the enjoyment of all its citizenry through appropriate legal, administrative and institutional arrangements. Key legal provisions are the Biodiversity/Wildlife Bill 2003, and the Forestry Act, 1998.

General Environmental Legislations: These include the National Environment Management Act, 1994; Local Government (City of Banjul), Chapter 33.02 Act 1 of 1946; Local Government, Chapter 33.01, Act of 1963; Territorial Sea and Contiguous Zone, Chapter 26.02, Act 4 of 1968; and, Continental Shelf, Chapter 26.01, Act 11 of 1965.

Land Tenure and Land Use Legislations: The Lands (Provinces) Act is historically the principal land law of The Gambia. It recognizes customary land tenure arrangements and states that the use of land by the indigenes be governed and regulated by customary laws of the locality. Most of the forest parks, reserves and wildlife parks are situated in areas governed by the Land (Provinces) Act. In 1990 four important pieces of legislation were enacted to increase the legal capacity of the government to shape the physical development of urban areas.

Public Health and Production Control Legislations: These include the Plant Importation and Regulation Act, 1963; the Prevention of Damage by Pests Act, 1962; the Environmental Protection (Prevention of Dumping) Act, 1988; and the National Water Resources Council Act, 1980.

International Conventions and Agreements: The Gambia is a party to 18 important international conventions and Agreements of relevance to environmental management generally and biodiversity conservation and sustainable use in particular.

2.1.4 Existing Information and Databases

The central pool for environmental and biodiversity information is located at the National Environment Agency as the coordinating institution for all environment related activities. The NEA has a Geographic Information System (GIS) as well as an electronic communication network system by e-mail known as the Gambia Environment Information System Network (GEISNET). In addition to the NEA's documentation centre, almost all technical departments have their own libraries and or meta-data centres where critical and relevant information/data vital for the operations of the sectors are kept. In addition, the DPWM has provisions for a Clearing House Mechanism (CHM) for biodiversity information/data generated through the NBSAP project. This includes information on the status and trends of biodiversity in the Gambia biodiversity strategy and action plan, the biosafety framework, the Ramsar wetland assessment and management plan reports and the annual waterfowl count information among others.

Through previous projects and studies the Climate Change Secretariat under the DWR developed and continues to maintain data bases and information related to development of national inventories of greenhouse gas emissions and assessment of vulnerability (impacts and adaptation) to climate change. The Secretariat also has access to and participates in the development and management of the environment mega-data sets coordinated by the NEA. The data sets at the NEA and other data centers such as the DWR have been digitized. The land-use data sets from the 1993 Land-use survey are not very useful for climate change studies because the land-cover types adopted during this survey do not match previous surveys. The data sets from the surveys need to be harmonized.

2.1.5 Capacity Development Initiatives

Some details on the Gambia's progress in developing capacity for environmental management were highlighted in section 1 above, under project rationale. The major cross-sectoral programme has been through UNDP with the Capacity 21 project which supported GEAP I implementation, and its successor GEAP II, which focused on strengthening institutional capacity. Support for EIA development and legislative reform has come from GTZ, with additional activities funded by the IDA/World Bank. Capacity Building Programmes for the Development of Sub-Regional Environmental Plans are now underway through NEPAD. A considerable number of thematic projects focused on the Rio Conventions have also included capacity building elements, and in particular through GEF funding in support of enabling activities.

Current GEF support for climate change activities includes Piloting an Operational Approach to Adaptation through UNESCO; Stocktaking prior to the 2nd National Communication; through UNEP; and development of the National Adaptation Plan of Action (NAPA). These projects have important capacity building components. Previous climate change capacity building activities have included the US Country Studies programme support to the National Climate Committee in a vulnerability assessment, and the OECD Environment Department

training for the NCC. The UNEP Collaborating Centre on Energy and Environment at Risoe in Denmark is providing assistance in a study on Capacity Building in Analytical Tools for Estimating and Comparing Costs and Benefits of Adaptation Projects in Africa. There is also a regional project on Capacity building for Improving Green House Gas Inventories undertaken with UNDP. The Global Change Research Unit of DWR is also now collaborating with the Energy and Development Research Centre (EDRC) of the University of Cape Town, South Africa. The implementation of these programmes and studies, and the considerable amount of training that has been provided, have enabled the Gambia to gain capacity in the technological and methodological aspects of studies and assessments, as well as develop understanding of vulnerability issues, mitigation and adaptation options and evaluate CDM activities and projects.

GEF support for biodiversity conservation has included a number of enabling activity projects covering: Preparation of the NBSAP and first National Report; Establishment of the CHM; Assessment of Capacity Building Needs for Biodiversity, Participation in CHM and 2nd National Report; and preparation of the 3rd National Report to the CBD. Additional support has also been provided for biosafety activities. A regional project through the World Bank is providing Capacity Building Support for the Elaboration of National Reports by African Parties to the UNCCD.

There are many national capacity building activities including: The Department of Forestry (DFor) one-year training programme for forestry extension staff at the Forestry Training School; Country-wide non-localised training for communities in simple forest management, marketing and book-keeping , offered to all participating communities in the participatory forest management scheme; The Department for Community Development (DCD) Skills Development Centre which focuses on training its extension staff and also skills development in the area of Appropriate Technology and Environment Programme.

Other national institutions with capacity building mandates are the Renewable Energy Centre (GREC) which is responsible for monitoring all renewable energy activities in the country. The mandate of the centre includes research, development and promotion of renewable energy technologies in wind, solar and biomass energy. It mainly looks at research, development and promotion activities especially the improved cooking stove and alternative cooking fuel programmes. The Gambia College has academic training programmes in mainly Agriculture and Education for extensionists and teachers, and other relevant programmes are run by the University of the Gambia.

2.2 Review of the priority issues

2.2.1 The Biodiversity Convention

The following table summarises the sectoral issues identified and confirmed as priorities for the implementation of the Biodiversity Convention in The Gambia:

Table 2.1 Biodiversity Priority Issues

| Sector | Priority Issues |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forest Biodiversity | <ul style="list-style-type: none"> ▪ Understanding of underlying causes of Forest biodiversity loss as well as measures to mitigate them ▪ Understanding of the ecosystem approach to forest management including its sustainable management issues ▪ Forest management systems as well as enforcement of forest laws |
| Coastal and Marine Biodiversity | <ul style="list-style-type: none"> ▪ An integrated or ecosystem approach to sustainable use of coastal and marine biodiversity ▪ Reduction in the degradation and over-exploitation of marine and coastal resources ▪ Initiatives in aquaculture ▪ Improved marine and coastal protected areas ▪ Data on the taxonomy, status and biological characteristics of fish species and habitats ▪ Community involvement in fisheries management ▪ Reduction in the exploitation of commercial fish species |
| Wildlife and Protected Areas | <ul style="list-style-type: none"> ▪ Adequate wildlife policy and protected area management plans ▪ Adequate capacity for wildlife management ▪ Adequate protection for critical species, habitats and heritage ▪ Comprehensive data on the status and trends of wildlife and habitats ▪ Community and private sector initiatives in protected area management ▪ Management of buffer zones around protected areas |
| Agricultural Biodiversity/Crops) | <ul style="list-style-type: none"> ▪ Good farming practices that conserve agricultural biodiversity ▪ Scientific information to orientate agriculture towards sustainable patterns. ▪ Focus on minor crops, medicinal plants and wild crops ▪ Knowledge of the impact of different policies, agricultural practices and technologies on agricultural biodiversity ▪ Promotion of biodiversity enhancing agricultural systems |

| | |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agricultural Biodiversity/Livestock | <ul style="list-style-type: none"> ▪ Adoption of improved animal breeding and rearing practices ▪ Adequate supply of livestock products (poultry, pork, draft power, meat etc) ▪ Reduce over grazing and poor rangeland management practices ▪ Provision of adequate supply of feed for livestock ▪ Less focus on extensive livestock (low input) production systems |
| Aquatic Biodiversity | <ul style="list-style-type: none"> ▪ Need for clear policy, and institutional frameworks for the management of inland water ecosystems ▪ More knowledge of the status and management practices of inland water systems ▪ Adoption of an integrated ecosystem approach to inland water systems ▪ More data on the status and threats to wetlands ▪ Reduction in the exploitation and wastage of freshwater resources |

A number of cross-sectoral policy and institutional issues were also prioritised including:

- Need for consideration of biodiversity in sectoral policies and legislation
- A framework for co-operation in matters related to biodiversity
- Improved capacity of NGOs, PVOs and CBOs in biodiversity issues
- Removal of perverse incentives in some policies
- Development of national incentive programme
- Comprehensive legal framework on Alien Invasive Species
- Policy and administrative measures to facilitate ABS

2.2.2 Framework Convention on Climate Change

The following table summarises the sectoral issues identified and confirmed as priorities for the implementation of the Convention in The Gambia:

Table 2.2 Climate Change Priority Issues

| Sector | Priority Issues |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agriculture (Crop Production Sub-Sector) | <ul style="list-style-type: none"> ▪ Integrated Crop/Livestock Farming ▪ Methane recovery from abattoirs and peri-urban dairy farms ▪ Waste recycling for agricultural production through composting ▪ Efficient management of soil and water so as to reduce runoff and nitrogen leaching and also improve soil conditions to enhance crop production. ▪ Contour farming and construction of dykes, crop residue farming, fallowing and crop rotation for the maintenance of soil structure. ▪ Crop cultivar screening, training of rural development agents and on-farm adaptive research on crop management practices. |
| Coastal Zone of The Gambia | <ul style="list-style-type: none"> ▪ Management of the Sand Bar at the Laguna and Palm Grove hotels; ▪ Construction of 16kms of dykes to protect villages bordering the wetlands and swamplands from seasonal flooding; ▪ Rehabilitation of the groyne systems; ▪ Construction of revetments, seawalls/bulkheads and breakwater systems in order to protect the economically and culturally important areas; ▪ Development and enactment of appropriate regulations and policies relevant to construction, urban growth planning, and wetland preservation and mitigation; and ▪ Development of a Coastal Zone Management Plan. |
| The Energy Sector | <ul style="list-style-type: none"> ▪ Promote energy efficiency and reduce energy use by applying basic housing keeping and retrofitting; ▪ Promotion and use of renewable energy (Solar Home Systems). ▪ Replacement of firewood and charcoal by LPG as a source of domestic energy supply ▪ Revitalization and promotion of river transport |
| Fisheries Sector | <ul style="list-style-type: none"> ▪ Introduce biological monitoring; ▪ Enforced fishing control measures; ▪ Promote aquaculture. ▪ Modify and strengthen fisheries management policies and institutions, ▪ Strengthen and expand catch-monitoring activities; ▪ Preserve and restore essential habitats and promote fisheries conservation and environmental education; ▪ Foster international and interdisciplinary research; and ▪ Use hatcheries to enhance natural recruitment. |

| | |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forests and Wetland Ecosystems | <ul style="list-style-type: none"> ▪ Establishment of Plantations, National Parks (NP) and Protected Areas (PA); ▪ Reforestation of landscapes with fragmented forest areas; ▪ Conservation of existing carbon pools in forests; ▪ Expansion of carbon stocks in forest ecosystems; ▪ Switching from fossil-fuel-based to biomass-based energy products; ▪ Introduction and promotion of incentive programs; ▪ Development of Seed Banks; and ▪ Promotion of effective management practices and flexible criteria for intervention. |
| Rangelands and Livestock | <ul style="list-style-type: none"> ▪ Active selection of plant species ▪ Control animal stocking ▪ Promote and encourage new grazing strategies |
| Waste Management Sector | <ul style="list-style-type: none"> ▪ Landfill/Dump site management ▪ Alternative waste-management strategies. ▪ Wastewater Treatment. ▪ Aerobic Treatment. ▪ Recovery and utilization of methane from anaerobic digestion of wastewater or sludge. |
| Water Resources Sector | <ul style="list-style-type: none"> ▪ Regulation of abstraction of freshwater from the river to maintain a delicate equilibrium between flow and saline intrusion; ▪ Introduction of legislative measures such as licensing and permits for withdrawal of river water for irrigation; ▪ Improvement of the efficiency of existing irrigation systems and introduction and encouragement of the use of more efficient irrigation systems such as sprinkler and drip irrigation systems; ▪ Promotion of water harvesting techniques; ▪ Development and utilization of better planning tools such as aquifer simulation models and a predictive/operational saltwater intrusion models; ▪ Construction of dikes or small dams in most of the smaller streams of the river; and ▪ Improvement of tidal water level monitoring and water resources assessment capability of the water resources institutions. |

As the science and politics of climate change progresses, the mandate of the National Climate Committee is broadening so challenging its scientific and technical capacity. Important institutional priorities therefore include:

1. Strengthening the technical and human resource capacity of the NCC
2. Strengthening the legal framework (removing barriers to capacity building, enhancing the regulatory framework and legal systems, ensuring fair trade policies, utilising tax preferences and waivers for environmentally friendly goods and materials)
3. Establishing centres and institutions for the provision of research, training, education and scientific support in specialised fields related to climate change.
4. Greater public awareness of climate change related issues.

2.2.3 The Convention to Combat Desertification

The following table summarises the sectoral issues identified and confirmed as priorities within the convention on desertification/land degradation:

Table 2.3 Land Degradation Priority Issues

| Sub-sector | Issues |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forestry and Wildlife | <ul style="list-style-type: none"> Dwindling supply of forest products in the face of an increasing demand Deteriorating national forest cover Over-exploitation of biological resources Alarming rate of mangrove die-back along the Gambia River estuary Little understanding of the ecosystem approach to forest management including its sustainable management issues Poor forest management systems Lack of coherent and sufficient wildlife policy and legislation Lack of effective enforcement of laws and policies, especially with regard to forestry and wildlife |
| Agriculture, soil and water conservation | <ul style="list-style-type: none"> Poor land use practices Inappropriate crop production practices and strategies Poor and deleterious agricultural practices Poor fisheries harvesting, processing and utilization methods and practices Employment of destructive methods of oyster harvesting Lack of reliable inland fisheries catch, effort and resources data on which rational management could be based Uncontrolled catching and dumping of undersized fish (juveniles) as a by-catch during shrimping |
| Livestock and range management | <ul style="list-style-type: none"> Rampant bush fire a critical issue Over-grazing and poor range land management practices Lack of suitable husbandry practices for various classes of livestock |
| Population and Social Dimensions | <ul style="list-style-type: none"> The lack of human resources capacity for sustainable development Low level of community and private participation in forest management |
| Institutional Issues | <ul style="list-style-type: none"> Lack of capacity for assessment, identification and monitoring of components of biodiversity Lack of comprehensive baseline data, criteria and indicators against which the status, trends and threats to biodiversity Low institutional capacity of Public NGO, CBO, PVO agencies Poor planning database Poorly managed protected areas |

3. CAPACITY CONSTRAINTS IN THE THREE THEMATIC AREAS

The details in this chapter come from the third stage of the NCSA when the thematic assessment teams (TATs) further developed the thematic profiles by establishing the capacity development needs at the individual, institutional and systemic levels for addressing the priority issues they had identified. The TATs were assisted in the capacity assessment process by a national consultant. The consultant and the TATs held a series of meetings in which they conducted capacity assessments, culminating in one final combined TATs meeting. The TATs members are given in Annex 2.

Taken as a whole, the capacity for implementing sustainable development activities in The Gambia is seen as inadequate and unsatisfactory, and particularly so in the area of environmental management: The slow pace of implementation of the three environmental conventions since their adoption by the country attest to this fact. The root causes behind the lack of capacity for environmental management derive from a series of human resources, institutional, and structural inadequacies including:-

- Inappropriate policies and legal instruments and/or lack of effective regulatory mechanisms;
- Ill defined responsibilities and poorly coordinated public instructions especially major agencies in agriculture and those in natural resources;
- Low level of involvement of industry, civil society Organizations and interest groups in natural resource management particularly in research;
- Low level of skills and technical capacity development and general training, education and human capital formation;
- Low funding and equipping of public agencies and lack of motivations and incentive schemes for civil servants; and,
- Lack of will to enforce existing environmental laws.

3.1 Capacity Constraints in Biodiversity

The Thematic Assessment Team for Biodiversity identified many of the constraints the Gambia faces in trying to implement its obligations under the Biodiversity Convention. These are summarised as:

| <i>Obligations</i> | <i>Capacity Constraints</i> |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Effective National Biodiversity Planning</i> | <ul style="list-style-type: none"> ▪ Lack of biodiversity consideration in sectoral policies and legislation ▪ Weak / no comprehensive biodiversity policy and legislation ▪ Weak framework for cooperation in matters related to biodiversity |
| <i>In-situ and ex-situ conservation of biological diversity</i> | <ul style="list-style-type: none"> ▪ Lack of human resources capacity for biodiversity conservation and sustainable use ▪ Low institutional capacity of public, NGO, CBO, PVO agencies for the conservation and sustainable use of biodiversity |
| <i>Identification and Monitoring of components of biological diversity</i> | <ul style="list-style-type: none"> ▪ General lack of or weak capacity for assessment, identification and monitoring of components of biodiversity ▪ No comprehensive baseline data, criteria and indicators so biodiversity can be measured and monitored ▪ Lack of a biodiversity assessment and |

| | |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> ▪ monitoring programme and systems ▪ General lack of taxonomic expertise at the national level for biodiversity characterisation, conservation and sustainable use |
| <i>Economically and socially sound incentive measures</i> | <ul style="list-style-type: none"> ▪ No explicit strategy, policy or programme on incentive measures for biodiversity conservation and sustainable use ▪ Some existing policies act as perverse incentives ▪ Lack of a national incentive programme ▪ No capacity development / building in incentive measures |
| <i>Scientific and technical research and training</i> | <ul style="list-style-type: none"> ▪ Lack of data in the structure and function of ecosystems ▪ Lack of relevant socio – economic and policy planning capacity and data |
| <i>Promotion and encouragement of understanding of the importance of biodiversity</i> | <ul style="list-style-type: none"> ▪ Lack of effective enforcement of the laws especially with regards to wildlife and poor understanding of biodiversity conservation and sustainable use issues and practices ▪ Inadequate environmental education campaign efforts ▪ No / little biodiversity teaching in schools |
| <i>Implement the Catagena Protocol on Biosafety</i> | <ul style="list-style-type: none"> ▪ Poor capacity in biotechnology as well as poor awareness of the impact of products of biotechnology on human health and the environment ▪ No comprehensive legislative and policy framework to guide the use of biotechnology in the country ▪ No national institutional structure to regulate and monitor the use of biotechnology and biosafety issues |
| <i>Control of Alien Invasive Species</i> | <ul style="list-style-type: none"> ▪ Poor understanding and information on status of invasive alien species and their impact on biodiversity as well as the methods to eradicate them ▪ Lack of a comprehensive legal and legislative framework on invasive alien species including non- enforcement of existing sectoral laws |
| <i>Promotion of access and benefit sharing</i> | <ul style="list-style-type: none"> ▪ No legislative policy or administrative measures to facilitate ABS in the use of genetic resources as well as lack of ABS negotiation skills ▪ Lack of national capacity to implement a regulatory regime on ABS |

Taking into account the constraints to implementing the convention identified above, the TAT for biodiversity then reviewed the list of priorities they had already developed (see table 2.1.1) and established their associated capacity needs according to the three levels (individual, institutional and systemic). The TAT then ranked the priorities according to the scale of the problem, level of concern, and ability to address the issue. **The capacity needs for all those priorities with a ranking of ‘1’ are given in table 3.1 below.**

Table 3.1 Capacity needs at three levels for the priority issues in Biodiversity ranked as ‘1’

| Priority issues – ranked ‘1’ | Capacity Needs | | |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| FORESTRY BIODIVERSITY | | | |
| Underlying causes of forest biodiversity loss poorly understood as well as measures to mitigate them | Attitudinal change Public awareness Train personnel in forest biodiversity assessment and monitoring Train/involve local communities in forestry activities | Create an appropriate institutional enabling environment with sufficient resources to address forest biodiversity issues | Put in place the required legal policy administrative measures to remove perverse incentives and promote positive incentives |
| Absence and or lack of understanding of the ecosystem approach to forest management including its sustainable management issues | Promote the ecosystem approach in forest biodiversity projects Involve local communities, NGOs, CBOs PVOs etc in forest biodiversity project Public awareness among stakeholders Train personnel | Create an enabling institutional environment to promote the ecosystem approach through pilot/demonstration projects | Adapt existing and/or develop guidelines and or principles for the ecosystem approach to biodiversity Management |
| COASTAL AND MARINE BIODIVERSITY (including fisheries) | | | |
| Lack of an integrated or ecosystem approach to sustainable use of coastal and Marine Biodiversity | Train personnel in relevant field Transfer of skills Public awareness Change of attitude Initiate field projects in ICAM techniques Involve all stakeholders in research activities | Develop interagency links Information exchange Provide necessary resources to relevant institution for effective functioning set up appropriate Institutional structure with adequate funding to develop, sell and promote sustainable use | Develop national guideline for ecosystem approach Develop policy for integrated approach to coastal and marine biodiversity management |
| Degradation and over-exploitation of marine and coastal resources | Train personnel in assessment, monitoring and evaluation of marine biodiversity Public awareness and education Initiate pilot projects on sustainable use issues and involve local communities NGOs, CBOs, PVOs industry | Maine and coastal biodiversity use technologies and practices at the local level | Develop legislation to prevent pollution and other forms of degradation in marine and coastal areas |
| Over- exploitation of commercial fish species | Train personnel to conduct stock assessment surveys Empower communities to administer laws Train in skills to negotiate access regimes Involve locals in negotiations | Strengthen existing institutional structure and provide with necessary resources to effectively monitor exploitation trends and recommend guidelines on best practice fisheries | Introduce legislative and policy measures with incentives built into them to discourage all aspects of commercial fisheries over-exploitation |

| Priority issues – ranked ‘1’ | Capacity Needs | | |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| DRY LAND/TERRESTRIAL BIODIVERSITY (WILDLIFE) | | | |
| Lack of adequate capacity for wildlife management | Training in management skills and teaching skills | Put in place in house formal training structure and provide lots of skills transfer | Provide resources, change policy to make people pass on skills |
| Inadequate protection for critical species, habitat and heritage | Ecological and taxonomic skills and ecological survey skills | Provision of management committee with multi sectoral representation | Enact legislation for critical species and habitats and increase protection capacity |
| No comprehensive data on the status and trends of wildlife and habitats | Skills in survey techniques and taxonomy | Increased links and collaboration with relevant organisations overseas | Creation of better enabling environment for overseas experts to work in the Gambia and collaborate with Gambians in the national interest. |
| AGRICULTURAL BIODIVERSITY | | | |
| Lack of good farming practices that conserve agricultural biodiversity | Involve stakeholders in sustainable farming practices to improve soil structure and productivity, reduce crop losses and pest damage and improve agricultural biodiversity | Strengthen agric. Services, NGOs, PVOs, CBOs, communities with resources, materials equipment etc to undertake sustainable Agric. Practices. | Put in place appropriate policies, laws and programmes including incentives to promote good and sustainable farming practices. |
| Poor farming practices leading to loss of agricultural biodiversity in the Gambia | Information and awareness raising Train extension agents Training of trainers Train farmers/herders Train in good husbandry and range land management practices, and fertilizer use. | Strengthen Divisional agric. centres as well as mixed farming centres to better provide agric extension services, capacitize NGO, PVOs, CBOs, etc | Introduce legislation, policy including incentives for agricultural practices that promote agricultural biodiversity |
| Lack of scientific information to orientate agriculture towards sustainable production patterns | Train personnel in relevant discipline Train in crop/livestock research methods Involve local people in plot projects and improve their knowledge, innovations and practices Train in data collection and analysis | Strengthen and or provide structure for seed/gene banks, agricultural research and provide necessary resources (material equipment, infrastructure) e.g. NARI, DAS | Policy, legislative and administrative measures in consolidate existing facilities (NARI DAS) and create new ones (gene bank) and provide with necessary resources |
| Poor promotion of biodiversity enhancing agricultural systems and practices | Raise awareness about agro-biodiversity Initiate field/pilot projects with local people and introduce appropriate incentive measures | An institutional structure with appropriate infrastructure and other resources to promote approved and | Package of agro-biodiversity policy, legislative and administrative measures including appropriate incentive measures to |

| Priority issues – ranked '1' | Capacity Needs | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| | <p>Study tours/field visits to areas of success stories</p> <p>Training in proper storage techniques</p> <p>Strengthen partnership between farmers, researchers and extension workers for skills transfer</p> <p>Further develop skills of local people through modernisation of indigenous technologies practices and innovations relevant to agro-biodiversity</p> | <p>tested agro-biodiversity systems and practices for all stakeholders including NGOs, CBOs, PVOs, industry etc.</p> | <p>promote biodiversity enhancing agricultural systems and practices.</p> |
| AGRICULTURAL BIODIVERSITY (LIVESTOCK) | | | |
| <p>Range management policies formulated</p> <p>Legislation of range management policies</p> <p>Encourage integrated use of range resources</p> <p>Financial and Technical support for development and utilization of range resources</p> <p>Improved monitoring and evaluation system</p> | <p>Introduce communities, land owners to sound range management through pilot projects</p> <p>Increase capacity to acquire and or make additional feed using locally available materials/resources</p> <p>Encourage off take at critical times of the year</p> <p>Identify and improve market outlets.</p> | <p>Strengthen the organisational capacity of CBOs</p> <p>Sensitization of CBOs on the fragility of range ecosystem</p> <p>Strengthen capacities of CBOs in elaborating development plans</p> <p>Strengthen of range management unit</p> <p>Training of DLS/NGO, CBO staff in range management t</p> <p>Strengthen linkage between different institutions using range resources</p> <p>Group management training</p> <p>Environmental training programme</p> | |
| <p>Inadequate supply of feeds for livestock</p> | <p>Train farmers in feed conservation and preservation</p> <p>Train farmers in processing and milling of feed</p> <p>Train farmers in mineral lick preparation</p> <p>Train farmers in business management conduct</p> <p>exchange visits</p> <p>Training in livestock production and management</p> | <p>Strengthen training centre at YBK</p> <p>Strengthen sectoral linkages between livestock, agriculture, forestry and fisheries in the production and management of livestock feeds</p> <p>Strengthen producer groups and organizations involved in livestock feed production</p> <p>Strengthen extension services</p> | <p>Improve co-ordination of different stakeholders in livestock feed production through the creation of an enabling policy, legislative and administrative environment</p> |
| <p>Predominance of extensive livestock (low-input)production system</p> | <p>Awareness campaigns on Socio-cultural and environmental issues</p> <p>Training on improved husbandry practices</p> | <p>Strengthen extension services</p> <p>Training on cooperative formation for different producer association</p> | <p>Logistical support</p> <p>Building linkages between financier, producers and consumers through the</p> |

| Priority issues – ranked '1' | Capacity Needs | | |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| | Training on environmental implications/issues Study Tours/Study Visits | Access to financial institutions | enactment of a national training policy and interagency collaborative mechanism. |
| AQUATIC BIODIVERSITY Inland water ecosystems | | | |
| Lack of a clear policy, and institutional frameworks for the management of inland water ecosystems | Training in policy review, formulation and streamlining Training in institutional setting/re-organisation/re-structuring to define mandates. | Put in place a policy and law formulation body to ensure that inland water policy and legislative issues are considered in relevant sectoral plans and policies. | Water development policy to be revised/updated Provide an integrated policy and legislative environment for inland waters within the framework of the national development plan. |
| Poor knowledge of the status and current management practices of inland water ecosystems | Train personnel in research methods Interagency regional, sub-regional collaboration Exchange programmes Initiate pilot projects with local people | Strengthen existing structure or create appropriate ones and provide with adequate resources and disseminate data on inland waters. | Further strengthen the national institution responsible for biodiversity research, including inland waters, through appropriate policy and legislative measures as well as appropriate funding. |
| Lack of integrated/ecosystem Approach to the Management of inland water ecosystems | Personnel gain experience through case studies Transfer of skills through field projects Information exchange Transboundary cooperation Implement joint projects | Institutionalise the ecosystem approach for inland water ecosystem develop and provide appropriate guiding principle for adoption in the country | Legislative and policy measure in place to promote the application of a flexible guiding principles for the ecosystem approach |
| Poor data/information about the status, threats to and importance of Wetlands | Train all stakeholders in data collection., storage, dissemination Raise awareness about threats to wetlands Empower communities to control, police and monitor threats Information exchange through trans-frontier collaboration All stake holders to participate in the preparation of management plan | An institutional structure with the necessary resources to spearhead the development and implementation of appropriate legal, administrative and incentive measures establishment of gene banks for fish and other species education, public awareness and local community involvement | Policy and legislation on the establishment, appropriate funding and management of gene banks as a resource of information on wetlands and other ecosystems. |
| Over exploitation /wastage of freshwater resources | Involve personnel/stakeholders in initiatives on the sustainable use of water resources Sensitize communities about the importance of water and the need to exploit it rationally Empower local people to regulate water use Training in law enforcement. | Strengthen institution and provide adequate material financial and equipment/infrastructure resources to better plan and manage water resources development in the country. | Provide legislative, policy and administrative measures, including the provision of incentives to promote sustainable use of water resources and discourage water wastage. |

3.2 Capacity Constraints in Climate Change

The Climate Change Thematic Assessment Team for the NCSA identified the following six areas as being priorities for effective climate change management in the Gambia.

- Participation in the Convention and Kyoto Protocol process;
- Assessment of mitigation and adaptation options;
- Development of a comprehensive climate change action plan and integrated implementation strategy;
- Development of national and/or regional specific emission factors with the ultimate objective of reducing uncertainties in the national inventory statistics;
- Development of a comprehensive vulnerability assessment; and
- Access to a reliable body of scientific information;

The TAT then ranked the priorities according to the scale of the problem, level of concern, and ability to address the issue. The constraints associated with these priority areas, according to the three capacity building levels, are detailed in the Table 3.2 below.

Table 3.2 Capacity needs at three levels for priority issues in Climate Change

| Priority Ranking | Capacity Needs | | |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| Participation in Convention and the Kyoto Protocol Process | | | |
| 1 | <p>Development and strengthening of the human capacity of the Climate Change Focal Point and secretariat.</p> <p>Enhancing the climate change negotiation capacity of the NCC membership - Training in negotiation skills.</p> <p>Education and training programmes for specialized skills and expertise.</p> <p>Develop the scientific and technical capacities of the scientist and technicians for effective and efficient participation in negotiations involving climate change issues such as those of the Conference of the Parties and its subsidiary bodies.</p> | <p>Assignment and funding of dedicated Office and staff on climate change within the Department of Water Resources</p> <p>Strengthening of scientific institutions (Gambia University, NARI, GTTI, GREC, etc) with the necessary equipment and scientific information;</p> <p>Identify the scientific and technical institutions within the region and the globe that provide information and conduct programmes relevant to the Gambia climate change programme such as the AGRHYMET Center, ACMAN, Drought Monitoring Centers, WMO, UNEP, Third World Academy of Science (TWAS), the Indian National Science Academy (INSA),</p> <p>Networking the NCC with global and regional science institutions, agencies and networks so as to:</p> <ul style="list-style-type: none"> (i) acquire and develop a considerable body of scientific information and technologies; (ii) mobilize and provide the required scientific and technical skills and information; (iii) train Gambian scientists in specific aspects of environmental management; (iv) assess impacts of climate change and formulate adaptation strategies; (v) establish technology assessment and procurement facilities; <p>procure relevant equipment and technologies such as specialized computer software and models.</p> | <p>Review the current national policies, strategies and regulatory measures to adequately take climate change into consideration.</p> <p>Enhance legal systems by creating supportive backup for their enactment and implementation;</p> <p>Development of a critical mass of scientists and technicians to be involved in the political debate on climate change and capable of providing appropriate and accurate information and advise for use by policy- and decision-makers;</p> <p>Sustained flow of financial resources needed for stakeholder consultations and public awareness</p> |

| Priority Ranking | Capacity Needs | | |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| Assessment of mitigation and adaptation options; | | | |
| 1 | <p>Develop the scientific and technical capacities of the scientist and technicians for effective and efficient participation in scientific, technical and socio-economic assessments of climate change conducted by the Intergovernmental Panel on Climate Change (IPCC) and other scientific bodies;</p> <p>Train members of the NCC on the application and further development of the relevant technologies;</p> <p>Training in specialized fields relevant to implementation of adaptation activities;</p> <p>Knowledge, acquisition and transfer of adaptation technologies and implementation of adaptation projects;</p> | <p>Determine adaptation technologies relevant and applicable to the adaptation activities identified in the NAPA and the National Communication;</p> <p>Determine the mode of acquisition by and transfer of the technologies to The Gambia</p> <p>Establishing pilot or demonstration projects to show how adaptation planning and assessment can be practically translated into projects that will provide real benefits, and may be integrated into national policy and sustainable development planning,</p> | <p>Establishment of enabling environments for implementation of adaptation activities.</p> <p>The adequate and appropriate costing of both mitigation and adaptation options and projects, particularly as they relate to the Clean Development Mechanism.</p> |
| Development of a comprehensive climate change action plan and integrated implementation strategy; | | | |
| 2 | <p>Education, training and public awareness on climate change related issues. Education, Training and Public Awareness (Article 6) Work programme as part of the National Action Plan.</p> | <p>Strengthening existing and, where needed, establishing institutional framework:</p> | <p>Establish appropriate environmental regulatory and legal frameworks:</p> <p>Utilize tax preferences and waivers for the importation and exportation of environmentally friendly goods and materials,</p> <p>Re-orientation and development of appropriate policies and regulations leading to improved decision- and policy-making.</p> |
| Development of national and/or regional specific emission factors | | | |
| 3 | <p>Train Task Force Members on the determination of emission factors</p> <p>Team members to go through industrial attachment or a</p> | <p>Understanding and application of the IPCC Good Practice Guidance - Train Greenhouse Gas Inventories Task Team on Good Practice Guidance</p> | <p>Conduct studies at the national or at the regional level to determine emissions factors that are relevant to and applicable in The Gambia</p> <p>Development of national and/or regional specific</p> |

| Priority Ranking | Capacity Needs | | |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| | crash-programme at an institution such as the EDRC at the University of Cape Town in South Africa. | | emission factors with the ultimate objective of improving and updating the National Greenhouse Gas Inventory by reducing uncertainties in the statistics. |
| Development of a comprehensive vulnerability assessment; | | | |
| 2 | <p>Training on the execution of climate change scenario development tools (GRADs, SENGEN, IMAGE, etc.)</p> <p>Training on the execution of biophysical models (DSSAT, WATBAL, SPUR2, etc.)</p> <p>Develop and enhance the technical capacities and skills of experts on Integrated Assessment</p> <p>Providing training in specialized fields such as climate and hydroclimate studies, geographical information systems, environmental impact assessment, modelling, integrated coastal zone management, soil and water conservation and soil restoration;</p> | <p>Strengthen and develop technical expertise of the Vulnerability Task Force on Vulnerability Assessment particularly on Integrated Assessment.</p> <p>Identify the climate and climate change related disasters experienced or that are likely to be experienced in The Gambia;</p> <p>Establish a food security and early warning system</p> <p>Develop preparedness plans to combat the disasters;</p> <p>Develop the institutional, human and legal capacity and frameworks for planning, preventive measures and implementation of the activities identified in the plans;</p> <p>Strengthen existing and, where needed, establish early warning systems for extreme weather events in an integrated and interdisciplinary manner;</p> | |
| Access to a reliable body of scientific information; | | | |
| 1 | <p>Training to utilise information technology</p> <p>Strengthen and improve the research capacity of the relevant institutions of the NCC (NARI, GTTI, GCRU, etc) through the provision of both the required human and material resources to enable them provide services related to climate change</p> | <p>Establish and/or strengthen systematic observation and monitoring networks (sea-level rise, climate and hydrological monitoring stations, fire hazards, land degradation, floods, droughts);</p> <p>Improve the Meta Data system and network/connect the relevant institutions</p> <p>Rehabilitate the existing data collection networks</p> | |

| Priority Ranking | Capacity Needs | | |
|------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| | Individual | Institutional | Systemic |
| | | <p>Reverse the deterioration of the observation networks and improve data and information availability.</p> <p>Establish and/or strengthen centres and institutions for the provision of research, training, education and scientific and technical support in specialized fields relevant to climate change;</p> | |

3.3 Capacity Constraints in Desertification/Land Degradation

The National Desertification Task Force undertook an extensive consultation exercise in the development of the Gambia's National Action Programme to Combat Desertification. Five areas were identified as priorities:

- Forestry and Wildlife Management
- Agriculture, soil and water conservation
- Livestock and range management
- Population and social dimensions
- Institutional framework

The NCSA process reconfirmed these as the priority areas and detailed the specific priority issues.

The TAT for desertification ranked the priorities according to the scale of the problem, level of concern, and ability to address the issue. The team then analysed the specific capacity constraints associated with them at the individual, institutional and systemic level as shown in Table 3.3 below.

Table 3.3 Capacity needs at three levels for priority issues in UNCCD

| Priority Ranking | Issues | Capacity Needs | | |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Individual | Institutional | Systemic |
| Forestry and Wildlife | | | | |
| 1 | Dwindling supply of forest products in the face of an increasing demand | Raise the awareness of communities on alternative energy sources through training and sensitisation Encourage increased planting of trees on farm lands. Develop silviculture practices. | Strengthen forest research programmes,. Encourage NGOs, CBO and PVOs to intensify and expand their community woodlot programmes | Increase number of forest reserves. Develop alternative economic activities to harvesting of forest resources. Create a National Mangrove Committee to improve management of mangrove ecosystem. Promote the use of biogas. |
| 3 | Deteriorating national forest cover | Train personnel in appropriate professional disciplines | Increase the staffing levels, operational budget, equipment and transport facilities for DPWM and DFor | Develop principles for forest management planning for state, community and private forests and adopt as a policy and programmes for poverty alleviation. |
| 3 | Over-exploitation of biological resources | Establish a gene bank. Train high level animal scientists to undertake serious and effective breeding programme | Strengthen the capacity of relevant technical departments to undertake more effective regulatory and developmental functions | Review all the regulatory frameworks governing exploitation of biological resources with a view to mitigating the rate of exploitation of biological resources |
| 1 | Alarming rate of mangrove die-back along the Gambia River estuary | Train some scientific personnel of NARI, Fisheries and Forestry in research rehabilitation and eco-system restoration | Strengthen the research capacity of NARI to investigate ways and means of rehabilitating the mangroves in collaboration with DFis, DFor and DPWM. Develop a research programme to identify the problem. | Constitute a National Mangrove Committee to develop and implement a mangrove rehabilitation policy |
| 2 | The absence and/or lack of understanding of the ecosystem approach to forest management including its sustainable management | Awareness creation. | Training for all stakeholder institutions Develop an IEC methodology and strategy. | |
| 3 | Poor forest management systems as well as poor enforcement of forest laws and policies | Develop the critical mass of soil chemists, soil micro-biologists and soil physics, foresters and range specialists | Increase the staffing level, budget and equipment of DFor and other relevant institutions. | Review the role local government authorities in natural resource management and establish the |

| Priority Ranking | Issues | Capacity Needs | | |
|------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Individual | Institutional | Systemic |
| | | | | Natural Resource Committees envisaged in the Local Government Act |
| 5 | Lack of coherent and sufficient wildlife policy and legislation | Train DPWM personnel in relevant professional disciplines including biology, animal science, marine biology, fisheries | Improve the staffing level equipment and budgetary allocations of DPWM to undertake effective policy implementation functions | Review the newly enacted wildlife policy and legislation to develop effective implementation tools and trans-frontier boundary management strategies and draft implementation guidelines |
| 1 | Lack of effective enforcement of laws, especially with regard to forestry and wildlife | Train DPWM staff in rural extension methods and PRA techniques. Increase the will and capacity of staff | Strengthen the capacity of DPWM and DFIs to intensify its regulatory activities and education/extension programme and develop and disseminate improved conservation practices Develop effective implementation tools to implement the new wildlife policy and legislation including the will to enforce the law. | |
| Agriculture, Soil and Water | | | | |
| 2 | Poor land use practices | Training of personnel of all stakeholder institutions in sound management practices of land resources. | Strengthen the capacity of DAS to intensify its extension education in promoting improved cultural practices. Strengthen the capacity of Department of Physical Planning and control to enforce the Land Use Regulations 1995 | Enact and implement a land care act and design appropriate incentive schemes to implement the act. Enforce the Land Use Regulations 1995 |
| 3 | Inappropriate crop production practices and strategies | Provide regular in-service training for extension workers in principal of crop production | Strengthen DAS to intensify and expand its extension programme in promoting sustainable crop production techniques through low input approaches such as green manure, organic manure, crop residues, animal dung and composting | Co-ordination of approaches, and/or policies and programmes. |
| 3 | Poor and deleterious agricultural practices | Conduct regular in-service training for VEWs and train highly qualified agrarian scientists to continual up-grade the skills of VEWs | Strengthen the capacity of DAS to intensify its extension education in promoting improved cultural practices | Introduce legislation, policy including incentives to encourage the adoption of improved agricultural practices |

| Priority Ranking | Issues | Capacity Needs | | |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Individual | Institutional | Systemic |
| 1 | Poor fisheries harvesting, processing and utilization methods and practices as systemic capacity issues | Train CBOs and all stakeholders, personnel in improved fish harvesting, processing and utilization methods and practices including local fishermen. | Strengthen the capacity of DFis to intensify its regulatory functions and education/extension programme. Develop the technical and scientific research infrastructure to conduct effective processing, harvesting and utilization research in fisheries | Review the fisheries act with a view to redefining some of its regulatory classes and conditions on utilization. Adopt more strength efficiency guidelines. |
| 1 | Employment of destructive methods of oyster harvesting | Up-grade the skills of women and various levels of DFis staff on improved oyster harvesting methods | Strengthen the capacity of DFis and NARI to conduct research on alternative methods of oyster harvesting, and to carry out extension educational programme on the need to preserve the mangrove substrate and the oyster population Develop alternative methods of oyster production crack/raft/long line methods of oyster culture. Develop alternative income-generating activities for oyster harvesters. | Ban all destructive methods as a matter of policy. |
| 1 | Lack of reliable inland fisheries catch, effort and resources data on which rational management could be based | Train enumerators for fisheries data collection | Strengthen the extension education and data collection activities of DFis and its capacity to conduct animal frame survey throughout the country Develop/map out significant fish landing sites along the Gambia river and estuary and involve some key local fishermen as sampling units | |
| 2 | Uncontrolled catching and dumping of undersized fish (juveniles) as a by-catch during shrimping | Up-grade the skills of data collection and inspection staff of DFis | Strengthen the capacity of DFis to enforce recommended mesh size in shrimping and monitor the trend of fish by-catch and discard by shrimpers | Review mesh size regulations of shrimping nets |
| Livestock and range management | | | | |
| 1 | Rampant bush fires a critical issue | Train CBOs and NGOs in bush fire management | Strengthen the operational capacity of DFor. Increase the staff strength of the Department appropriately to expand and intensify surveillance activities | |

| Priority Ranking | Issues | Capacity Needs | | |
|-------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Individual | Institutional | Systemic |
| | | | Strengthen the capacity of CBOs on bush fire management. Sensitize local authorities to enforce the forest legislation. Equip the village fire fighting committees | |
| 1 | Over-grazing and poor range land management practices | Train Range Management experts. Train personnel from NGOs and CBOs on range management practices | Strengthen the capacity of the Range Management Unit of DLS to carryout studies; develop range management strategies; and plan grazing management systems. Strengthen the organizational capacity of CBOs to assume increasing role in community range management | Formulate and implement range management policies and legislation which emphasize community ownership of rangeland, destocking efficient management and utilization of range resource through the adoption of improved range management strategy and plan and grazing management system. Formulate a land care policy and Act |
| 2 | Lack of suitable husbandry practices for various classes of livestock | Up-grade the skills of extension workers on provided animal husbandry practices | Strengthen the capacity of DLS to develop extension packages for stratified livestock production systems Develop an awareness campaign against indiscriminate burning of biomass through extension, primary schools, radio and television programmes | |
| Population and social issues | | | | |
| 1 | The lack of human resources capacity for sustainable development | Train personnel in appropriate professional disciplines such as taxonomy, environmental economics, wildlife management | Increase staffing level of institutions and increase the cooperation and collaboration | Review the mandate of technical agencies to include cooperation among counterpart agencies |
| 3 | Low level of community and private participation in forest management | Develop the skills of personnel of all stakeholders collaborators, DFor and DPWM in PRA techniques and extension education methodologies | Increase the staffing levels and budgetary allocations of DFor & DPWM to facilitate and regulate the involvement of communities and private sector in management of state forest parks Adopt a policy of involving communities and | |

| Priority Ranking | Issues | Capacity Needs | | |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| | | Individual | Institutional | Systemic |
| | | | private individuals in the management of state forest parks, nature reserve, game parks, nature trails, eco-tourism ventures etc. | |
| Institutional Issues | | | | |
| 1 | Lack of capacity for assessment, identification and monitoring of components of biodiversity | Develop the critical mass of environmental economists, taxonomists, biologists etc. and increase the motivation of staff and capacity to perform their duties effectively. | Strengthen the staff level of DPWM through increased budgetary allocation increased number of staff, increased level of equipping appropriately and increase level of collaboration with civil society, especially NGOs and out-of-country experts. | Remove perverse policies and disincentive for researchers such as licence fees. |
| 1 | Lack of comprehensive baseline data, criteria and indicators against which the status, trends and threats to biodiversity | Train personnel in survey techniques and taxonomy and other relevant professional discipline to undertake animal resources research | Increase the staffing level, equipment and operational budget of DPWM to undertake effective animal resource research and monitoring & evaluation and surveying work Develop a national biodiversity baseline survey project and seek friends to implement the survey as a matter of urgency especially NGOs and out-of-country experts. | |
| 2 | Low institutional capacity of Public NGO, CBO, PVO agencies has been identified as a major capacity constraint | Train DPWM, DAS, DLS, DFor and DFis personnel in appropriate professional disciplines to be able to provide subject matter specialist advices to NGOs, CBOs and PVOs and vice versa | Appropriately define the mandate institution/ organization structure of DPWM to include an outreach programme of support to NGOs, CBOs and PVO involved in biodiversity conservation. Increase the staff and operational budget of DPWM to be able to undertake an effective extension/education/training programme for NGOs, CBOs, and PVOs Formulate and adopt a systematic policy and administrative guideline for the involvement of NGOs, CBOs and PVOs agencies in biodiversity conservation and allow them access to scientific and technical infrastructure for research and conservation | |

| Priority Ranking | Issues | Capacity Needs | | |
|------------------|--------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| | | Individual | Institutional | Systemic |
| 2 | Poor planning database | Train economist, statisticians and monitoring and evaluation specialists | Strengthen the capacity of DOP to collect, analysis and provide good planning data and build up a reliable database | |
| 2 | Poorly managed protected areas | Train personnel of the concerned departments in requisite professional disciplines | Strengthen the capacity of DPWM, DFor and DFis to implement protected area management systems Develop and implement protected area management plans with local communities. Adopt a policy of involving local communities in the management of protected areas | |

4. ASSESSMENT OF POTENTIAL SYNERGIES AND CROSS-CUTTING CONSTRAINTS

The details in this chapter come from the fourth stage of the NCSA process which looked for potential synergies that could be used to enhance environmental management, and opportunities for addressing cross-cutting capacity building constraints.

The assessment of synergies and cross-cutting constraints involved:

- Conducting a detailed review of the existing institutional framework for managing the conventions at the national level to further identify opportunities to enhance/ensure integration of the cross-cutting issues of the conventions into existing planning and decision-making structures and processes.
- Determining what the constraints and limitations are to ensuring better integration of cross-cutting issues across the 3 conventions
- Assessing the level of awareness of cross-cutting issues for the 3 conventions and how much attention is given to them based on current national legislations, institutional arrangements, lines of reporting, programmes and projects.
- Reviewing the thematic reports of the 3 conventions to identify and confirm the cross-cutting issues and their accompanying capacity needs
- Proposing ways of integrating the cross-cutting issues to attain maximum synergistic effects among the 3 conventions

A 52 page report titled: “Capacity Assessment across the Thematic Areas of Biological Diversity, Climate Change and Land Degradation and an Assessment of Synergies”, and is available from the NEA.

4.1 Identification of synergies

The approach taken to identify potential synergies was twofold:

- Firstly to investigate how environmental conventions are managed at the institutional level in the Gambia in order to analyse institutional shortcomings and how these might be addressed more synergistically.
- Secondly to look more broadly at how the environment is viewed in the Gambia in terms of legislation, in terms of the overall sustainable development framework, and in terms of general public awareness of the issues - the rationale being that addressing synergies will require a clear understanding of the ‘enabling environment’.

Institutional Synergies

The ‘Synergies Report’ provides extensive details on the institutional framework for environmental management in the Gambia, covering different levels of management as well as the proposed amendments to the framework identified in national action plans for the Rio Conventions as well as national planning processes. Detailed terms of reference for three Rio Convention committees have been drawn up, which provide clear frameworks for inter-sectoral (synergistic) collaboration, in line with national and local governance structures. However these committees are all actually in place: The NBSAP proposed an Inter-sectoral Committee on Biodiversity (ISCB), but it has not been instituted, whilst the Inter-sectoral Committee on Desertification proposed in the NAP was also never established. The National Climate Committee was established and remains in place, but it has a vast membership which causes difficulties. The one inter-sectoral committee that does work effectively is the ANR working group within the NEA.

The table below summarises the institutional frameworks and their functions.

Table 4.1 Comparison of the relative Institutional Frameworks for Implementation and Management

| Level/ Functions | ANR Institutional Framework | CBD Institutional Framework | UNFCCC Institutional Framework | CCD Institutional Framework |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------|--------------------------------|------------------------------------|
| 1. National Policy - Decision-making - Coordination | Cabinet | Cabinet | Cabinet | Cabinet |
| 2. Inter-Sectoral Policy - Decision-making - Coordination | NEMC NWRC | NEMC | NEMC NWRC | NEMC |
| 3. Inter-Sectoral Implementation Process Planning Supervision - Monitoring and Evaluation | ANR Working Group | (ISCB) | NCC | (ISCD) |
| 4. Sector Policy - Decision-making - Planning - Coordination | DOSA DDSFNRE DLG&L | DOSFNRE | DOSFNRE | DOSFNRE |
| 5. Sectoral Implementation Process - Planning - Decision-making - Implementation - Coordination - Monitoring & Evaluation | Line Departments | (ISCB) CBD Focal Point | NCC UNFCCC Focal Point | (ISCD) CCD Focal Point/NDS & MU |
| 6. Divisional Implementation process - Planning - Decision-making - Supervision - Coordination | Line Departments DCC ANRE Sub- Committee | ANRE Sub-committee | ANRE Sub-committee | ANRE Sub Committee DDS/DFor |
| 7. Local level-District - Decision-making - Planning - Supervision - Coordination | Line Departments MDFTs District Authority DOC | NONE | NONE | VDC WDC MDFTs |

(proposed)

Synergistic inter-sectoral collaboration is effectively established and working well at levels 1, 2 and 3. At the sectoral policy and implementation levels, as well as at the lower divisional and local levels, a small number of core constraints are restricting the effectiveness of the relevant committees and institutions. The root causes given are

- Inadequate skills in planning for natural resources management
- The absence of field-based staff
- The size and composition of the ‘resource envelope’ i.e. national budgetary allocations.

The lack of professionally qualified staff in the different sectors capable of identifying and implementing a more synergistic approach to natural resource management is seen as a real deterrent. Similarly at the district and local levels there are discrepancies in staff coverage which will make implementation difficult. But the major deterrent to a more synergistic approach is the ‘resource envelope’: Budgetary applications in the Gambia are based on a line item budgetary system which does not easily lend itself to financing inter-sectoral, inter-

programme activities. An entirely separate allocation for inter-departmental activities will be a pre-requisite to any synergistic activities.

A workshop attended by the Thematic Assessment Teams and led by the national consultant proposed remedial institutional actions at four levels:

1. National policy level
 - the creation of a Cabinet Sub-committee on the Rio Conventions
2. Inter-sectoral technical operational management level
 - Reduce the size of the National Climate Committee
 - Create a single inter-sectoral committee for Rio Conventions
3. Sub-Sectoral technical operational management level
 - merging several departments, monitoring units, secretariats and trust funds.
4. Various divisional level actions

The enabling environment for synergies

If the institutional constraints could be addressed, the analysis undertaken of the enabling environment within the Gambia would suggest that a synergistic approach is certainly feasible.

The Gambia's broad-based consultation processes for developing the GEAP, and other planning documents, as well as the consultations as part of the NCSA process, have demonstrated that the general public have an innate awareness of synergies between thematic areas. Communities understand the relationships between climate change, biodiversity loss and land degradation, and are well able to articulate causes and consequences of biodiversity loss and land degradation and how they impact on their livelihoods. Any new initiatives aimed at a synergistic approach could build upon this innate knowledge.

The legislative arrangements for cross-sectoral environmental management in the Gambia include some innovative aspects, such as the incorporation of community participation in natural resource management. The institutional arrangement for cross-sectoral convention implementation – namely the National Environment Agency, as well as the focal point institutions, is also well designed and innovative, providing an effective enabling environment. The environment is also well mainstreamed into the Strategy for Poverty Alleviation which is now the guiding pillar for all development programmes in the Gambia.

4.2 Opportunities for cross-cutting capacity building

Having identified where and how potential synergies might occur, the second component of stage 4 of the NCSA process focused on identifying and confirming the cross-cutting issues and their accompanying capacity needs. The process involved a detailed review of the thematic reports of the 3 conventions produced by the TATs. Table 4.2 below contains the results of the exercise in which the national consultant further developed and analysed 16 cross-cutting capacity constraints, identifying 4 or 5 opportunities for cross-cutting capacity building to address each of the 16 constraints. The opportunities for capacity building across the conventions for maximum synergistic effects were then confirmed and validated by a workshop of a combined TATs.

Individual Level

A number of opportunities for synergistic and cross-cutting capacity building at the individual level were identified. Creating new capacities will entail a series of long-term training courses to develop the critical mass of scientists and professionals needed. These include 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 series of refreshers, and short-term specialized training courses for example in extension methodology and PRA techniques. Local level training opportunities exist in the Gambia in a variety of fields, including training for extension agents at the School of Agriculture and refresher courses for forest guards at the Forestry Training School.

Institutional Level

A plethora of opportunities for synergistic and cross-cutting capacity building are seen to exist at this level. These include mobilizing and/or redeploying existing capacities and enhancing existing capacities, for example developing modules/courses in negotiation skills and conflict resolution skills at Gambia College and MDI and production and sensitization materials by Extension Aids Unit of DAS and GRTS, as well as and introducing courses on monitoring, assessment and inventorying in MDI. Enhancing existing capacities will include institutional rationalization and reform, strengthening monitoring units of DOP, NEA, DPWM and DFor and strengthening the extension programmes, research and planning capacities of DAS, DLS, DFor, DFis, DPWM, DCD, NARI, GREC and University of The Gambia. Another opportunity exists through the Department of Community Development which is able to provide a cross-cutting service across all sectors. Some sectors will even have staff of the DCD seconded to their projects on a full-time basis.

Systemic Level.

To enable synergistic and cross-cutting capacity building at the systemic level it is necessary to further develop the overall enabling environment. Activities include examination of the incentive regime, policy, legal and regulatory frameworks, and a study of technology adoption rate and the environmental information system. Strengthening activities will include developing the information delivery capacity of the media, community radio halls and land use planning capacity at national, divisional, district and village levels.

Some of the capacity constraints can be addressed by existing mechanisms in place within the Gambia. 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. The Biodiversity Policy and Act of 2003 followed this route as a result of the NBSAP process.

Table 4.2 Potential Strategies for Integrated Capacity Building

| Cross-Cutting Capacity Constraints | Capacity Building Strategies | | |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| 1. Inadequate education, sensitisation and public awareness | | Strengthen the communication unit of DAS, development and implement GRTS, private radios, community radios and community video halls, strengthen the MDFTs Strengthen and expand the environmental curricula of the school system at all levels. | |
| 2. Limited skills in inventory, monitoring and assessment | Train people in inventory management, monitoring and assessment. | Strengthen the capacity NEA and DBM (DFor, DPWM and DFis) | |
| 3. Community and private sector involvement poor | . | Increase the staff, strengthen the DBM (DFor and DPWM). | Review the key natural resources legislation with a view to create an adequate environment, establish the DBTF as matter of urgency. |
| 4. Poor database for planning and monitoring | Train statisticians, train data entry clerks and analysts. Train economists and monitoring and evaluation experts. | Strengthen the observation capabilities for DWR. Strengthen the DOP and Monitoring Unit of NEA and the sectoral data centres and link them to the CHM. | |
| 5. Limited skills in taxonomy | Train taxonomists, botanists, ecologist and zoologists | Strengthen the research capacity of NARI. Review the curricula of agricultural school and forestry training centre to include taxonomy as a core subject. | |
| 6. Poor enforcement of legislation | Train foresters and wildlife officers | Strengthen the staff capacity of DBM (DFor and DPWM) to intensify surveillance. Expand community forestry. | Review the legal framework for natural resource management. Establish Local Natural Resource Committees provided for by section 72 or the Local Government Act 2002. |
| 7. Low level of technology transfer | Train extension agents and individual farmers. | Strengthen the extension services of public and NGO agencies. Develop and strengthen the adaptive research capacity of NARI | |
| 8. Poor integrated land use planning | Train land use planners, cadasters and surveyors | Strengthen DLAS and Divisional Planning Boards Assess current level of land use planning at national divisional and village levels. | Review land use regulation and strengthen its enforcement. |

| Cross-Cutting Capacity Constraints | Capacity Building Strategies | | |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Individual | Institutional | Systemic |
| 9. Inadequately developed environmental information systems | Train monitoring and evaluation experts. Train natural resource economists | Strengthen the environmental monitoring capacity of NEA and the sectoral data centres | |
| 10. Low levels of understanding of the ecosystems approach resource management | Train Agro-foresters, Biologists, and environmentalists | Strengthen the capacity of NGOs and CBOs operating in natural resource management Develop and implement a public sensitisation programme on ecosystem approach | |
| 11. Inadequate negotiation skills | Plan and conduct training sessions for relevant public and private agents on negotiation skills especially NCC members and the focal points of CBD, UNFCCC and CCD | Assist relevant public and private sector training institutions (MDI, GTTI, Brikama College) | |
| 12. Inadequate conflict resolution skills | Plan and conduct training sessions on conflict resolution skills. Conduct refresher courses/workshops for relevant public and private sector agents | Adequately equip the public and private training institutes to develop and conduct training programmes on conflict resolution – MDI, GTTI, Brikama College | |
| 13. Poor harmonization of sectoral policies and poor coordination | | Strengthen the capacity of various natural resource sector coordinating organs to meet frequently i.e ANR Working Groups, DWMU, DCCs and to monitor the implementation of sectoral policies effectively | Review the various natural resource related-sector policies with a view to harmonizing them |
| 14. Limited incentives and policy reforms | Develop incentive planning and review capacities in DOP | Strengthen the various sectoral and inter-sectoral monitoring /implementation /execution incentives and policy measures | Review the incentive regime for natural resource development and develop supportive legal, policy and institutional frameworks for the design and implementation of incentive measures |
| 15. Inadequate research and training | Train agronomists, socio-economists, climatologist, specialists in GIS, range management sociology and farming system research | Strengthen agronomic and socio-economic capacities of relevant institutions e.g NARI and DOP. Strengthen the research capacity of DWR | |
| 16. Limited financing mechanisms | | Set up Desertification and Biodiversity Trust Fund (merging proposed Desertification and Biodiversity Trust Funds) Implement the legislation relating to the setting up of the fund and appropriately review existing provisions on revenue retention | |

5. ELEMENTS OF A STRATEGY FOR CAPACITY BUILDING FOR GLOBAL ENVIRONMENTAL MANAGEMENT

The Focal Points for the Rio Conventions, and their Thematic Assessment Teams, did not proceed with developing a Strategy/Action Plan for all the capacity constraints they had identified during the NCSA process, as summarised above in tables 3.1, 3.2 and 3.3. The list of capacity constraints identified was extremely lengthy making the development of any kind of meaningful strategy very difficult. Instead at a review meeting held in May 2005 when the NCSA document was being finalised, the focal points decided to prioritise several strategic areas so that if and when an opportunity for funding arises, these concepts will be developed into fundable projects.

Five of the cross-cutting capacity constraints identified in table 4.2 Potential Strategies for Integrated Capacity Building provided the rationale (strategic area to be addressed) for the project concepts developed by the focal points, namely.

- Limited skills in inventory, monitoring and assessment
- Low level of technology transfer
- Inadequately developed environmental information systems
- Poor harmonization of sectoral policies and poor coordination
- Inadequate research and training

5.1. Project concepts to build capacity for Biodiversity

a) Strengthening capacity for biodiversity assessment and monitoring

Objective: To develop the requisite human resources for the effective implementation and monitoring of the NBSAP

Strategic Area to be addressed: Limited skills in inventory, monitoring and assessment

Priority Actions:

- A series of short-term training courses to be organised within the country for different target groups on monitoring and evaluation
- Specialised long-term training in taxonomy, botany, ecology and marine biology
- Training of Wildlife Personnel, NGOs, CBOs, and VDCs
- Networking and information sharing
- Seminars and workshops

Details:

This activity is consistent with GEAP, NBSAP and CBD for effective implementation of the biodiversity and wildlife policy.

b) Co-ordinating Biodiversity Research

Objective: To establish a functioning central biodiversity research co-ordinating unit

Strategic Area to be addressed: Inadequate research and training

Priority Actions:

- Provision of infrastructure and equipment
- Support the functioning of a central biodiversity research coordination unit

Details:

Department of Parks and Wildlife Management as the focal point for the CBD will be the lead agency, collaborating with the Department of Forestry, Department of Fisheries, Department of Agricultural Services, Department of Livestock Services, NARI, and University of the Gambia etc.

5.2 Project concepts to build capacity for Climate Change

a) Support to the focal point and Climate Change Secretariat

Objective: Build the capacity of the Focal Point to enable effective participation at the international level:

Strategic Area to be addressed: Low level of technology transfer

Priority Actions:

- Access to the internet and a LAN connection to enable the sharing of information and access to information on convention issues.
- GIS capability to add value to the data/information generated by the department to serve as an early warning tool for climate related hazards.

Details

Development and strengthening of the institutional and human capacity of the Climate Change Focal Point and secretariat, to undertake sustained coordination of the implementation of the UNFCCC in the Gambia, requires the assignment and funding of dedicated Office and staff on climate change within the Department of Water Resources. Currently, the Global Change Research Unit under the Department is staffed with one Officer, a Secretary and a Driver who perform the duties related to climate change in addition to the normal and routine activities demanded by the Department.

b) Climate change monitoring

Strategic Area to be addressed: Inadequately developed environmental information systems

Objective: To strengthen the national meteorological and hydrological service to continue to monitor the climate system

Priority Actions:

- To replace and upgrade the conventional equipment to digital equipment to minimize human interaction
- To provide continuous recording of the meteorological, hydrological and climatological elements and phenomena;
- To rehabilitate and expand the existing station networks for more representative monitoring of weather, climate and other environmental issues;

- To provide better and bigger capacity data processing and storage equipment for the upgrading, networking and inter connectivity of the various data systems of the DWR and other collaborating institutions.

Details:

Development and implementation of climate change programmes is a process that depends on access to a reliable body of scientific information. The information is developed from raw data acquired from national, regional and global system of observation networks. Gambia has limited historical climate data (less than 50 years) and the meteorological and hydrological networks established in the late 1970s and 1980s have deteriorated and gaps in data have been realized from the mid-1990s. Inadequate or non-availability of equipment for systematic collection of long-term instrumental observation of climate system variables has the consequence of limiting vital data required in the development of adequate and accurate input variables to model and simulate climate and climate change. The conventional and electronic instrument technicians need to maintain the instruments and equipment are also lacking. At the current rate of deterioration of the observation networks in The Gambia the future contribution of data for national, regional and global climate change simulation will be limited. It is thus a priority in The Gambia to reverse this deterioration of the observation networks and improve the data and information availability. Improvement will entail acquisition of 5 Automatic Weather Stations (AWS) and stocking the 15 Meteorological Stations and 14 Hydrological Stations with the required number of instruments and automatic recorders. Adequate number of replacement parts and spares such also be stocked for timely replacement. Four instrument and electronic technicians should be trained to maintain the networks.

c) Technical Training for the Vulnerability Task Force

Objective: To strengthen and develop the technical expertise of the vulnerability task force

Strategic Area to be addressed: Inadequate research and training

Priority Actions:

- Training on the execution of climate change scenario development tools (GRADS, MAGIC_SCHENGEN, IMAGE etc)
- Training on the execution of biophysical models (DSSAT, WATBAL, WEAP, SPUR2)
- Development of technical skills on integrated assessment

Details:

Technical expertise of some members of the National Climate Committee has been developed to execute climate change scenario development tools in the assessment of vulnerability (impacts and adaptation) of the economy to climate change. However, these members of the Committee have very limited expertise in influencing the source codes of these models so as to "*fine tune*" them to the Gambian environment. For a comprehensive vulnerability assessment the technical capacities and skills of experts need to be developed and enhanced beyond those acquired through workshops. It is necessary to train the lead agency of each of the sectoral teams (Crop Production, Rangelands and Livestock, Fisheries, Forestry, Biodiversity, Water Resources, Coastal Resources, and Health) on the execution of the model required for the sectoral vulnerability assessment. It will also be necessary to train two members of the Global Change Research Unit on integrated assessment thus building the capacity of the National Climate Committee to under take integrated assessment. Effective capacity building can be achieved and sustained through the promotion and institutionalization of networking and collaboration between the leading global climate modeling groups and the Global Change Research Unit of The Gambia. These efforts will build and sustain the capacity of members of the National Climate Committee in the

development and execution of climate change and biophysical models. The collaborative efforts should include the transfer of the model technology to Gambians.

5.3 Project concepts to build capacity for Land Degradation

a) Developing capacity of the Focal Point and the 10 CCD institutions

Objective: To enhance national capacity to implement the CCD

Strategic Areas to be addressed:

Poor harmonization of sectoral policies and poor coordination
Inadequately developed environmental information systems
Inadequate research and training

Priority Actions:

- Support the functioning of the CCD operational centres and key institutions
- Local training on sustainable natural resource management and the provisions of the NAP for trainers, practitioners and extension officers
- Awareness raising and demonstration on the environment and successful development initiatives
- Infrastructure/equipment for facilitating data processing and networking
- Investigation for resource mobilisation for effective implementation of the NAP

Details:

The overall strategy is to contribute to the national ability to halt land degradation and associated rural impoverishment. The primary objective will be to enhance the national capacity to implement the NAP with the specific objectives:

- To strengthen and/or establish the institutions identified as essential pre-requisites for the effective implementation of the NAP
- To train and develop the critical manpower resources for the effective implementation and management of the NAP on a sustainable basis;
- To appropriately equip the technical, educational and research institutions and agencies including public, NGO and CBO concerns involved in the implementation of the NAP at all levels of the development process
- To prepare documents for donor attraction and consultation

There is a need to establish a functioning CCD operational Centre/Focal Point (comprising the National Desertification Trust Fund) (NDTF) Programme Unit, the Technical Support Unit (TSU) and Monitoring and Evaluation Unit) and the 6 Divisional Desertification Coordination Units (DDCUs). A series of in-country short-term training courses are needed for the training of NGOs, CBOs, the extension personnel of the concerned technical departments and trainers, the local level participatory structures (WDCs and VDCs), Women natural resource harvesters/processors and data collection enumerators.

6. PROPOSED NEXT STEPS AND MONITORING

Next Steps

The NCSA process will have been successfully achieved once the following processes have been completed:

Validation of the NCSA Final Document at the next quarterly meeting of the NEA's Agriculture and Natural Resources Working Group.

Adoption of the NCSA as a national document: DOSFNRE/NEA will seek official endorsement of this document as a national report through the Minister of the Environment, who will then brief his fellow cabinet members

National launch: The NEA will organise for a national launch of the document, inviting key stakeholders who participated and making a presentation of the results.

NCSA Monitoring

The implementation and monitoring of this NCSA document will be the responsibility of the established systems within the NEA. Ensuring that funding is made available for its implementation will be the responsibility of the soon to be appointed Research and Funding Officer. Monitoring will be conducted within the framework of the ANR Working Group procedures.

It is anticipated that fund raising activities will include:

Submission to Donor Round Table meetings: Following Ministerial approval, the DOSFNRE will be in a position to submit the document to any forthcoming donor round tables, or similar donor meetings/mechanisms.

Targeted requests for capacity building funding: The Government of The Gambia (GOTG) will formally request the NEA to take responsibility for undertaking resource mobilisation activities for the capacity needs identified during the NCSA process. Opportunities will be researched and projects will be developed and presented for donor funding as appropriate.

It is anticipated that tracking the progress of the NCSA Document by the ANR Working Group will cover

Six monthly reviews of progress made in fund raising and the determination of any remedial actions where necessary.

Annual evaluations on progress achieved in capacity building for environmental management. An evaluation process will be designed to provide essential information to NEA programme management, policy/decision-makers and the general public at large, on the efficiency and effectiveness of the anticipated capacity building activities. It is anticipated that technical support will be provided through the UNEP/UNDP capacity building Global Support Programme to develop a series of indicators for measuring progress in capacity building.

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ANNEXES

Annex 1 LIST OF ABBREVIATIONS AND ACRONYMS

| | | |
|---------|---|----------------------------------------------------------------------|
| ABS | - | Access and Benefit Sharing |
| ANR | - | Agriculture and Natural Resources |
| ANRE | - | Agricultural, Natural Resources and Environment |
| BSC | - | Biodiversity Coordination Secretariat |
| C&ME | - | Coastal and Marine Environment |
| CBD | - | Convention on Biological Diversity |
| CBO | - | Community-Based Organisation |
| CFMC | - | Community Forest Management Concept |
| CHM | - | Clearing House Mechanism |
| CILSS | - | Permanent Inter-State Committee for Drought Control in the Sahel |
| COP | - | Conference of Parties |
| CRD | - | Central River Division |
| CRS | - | Catholic Relief Services |
| CSRC | - | Cabinet Sub-Committee on the Rio Conventions |
| DAS | - | Department of Agricultural Services |
| DBM | - | Department of Biodiversity Management |
| DCC | - | Divisional Coordinating Committee |
| DCD | - | Department of Community Development |
| DDCU | - | Divisional Desertification Coordination Unit |
| DFis | - | Department of Fisheries |
| DFor | - | Department of Forestry |
| DL&S | - | Department of Lands and Surveys |
| DLS | - | Department of Livestock Services |
| DOP | - | Department of Planning |
| DOSA | - | Department of State for Agriculture |
| DOSFNRE | - | Department of State for Fisheries, Natural Resources and Environment |
| DOSLG&L | - | Department of State for Local Government and Lands |
| DOSTIE | - | Department of State for Trade, Industry and Employment |
| DPPH | - | Department of Physical Planning and Housing |
| DPWM | - | Department of Parks and Wildlife Management |
| DRCS | - | Divisional Rio Conventions Secretariat |
| DWR | - | Department of Water Resources |
| EIA | - | Environmental Impact Assessment |
| EIS | - | Environmental Information System |
| ERC | - | Energy Research Centre |
| GCM | - | General Circulation Model |
| GDP | - | General Circulation Product |
| GEAP | - | Gambia Environmental Action Plan |
| GEF | - | Global Environmental Facility |
| GEISNET | - | Gambia Environmental Information Network |
| GHG | - | Greenhouse Gases |
| GIS | - | Geographic Information System |
| GMO | - | Genetically Modified Organism |
| GOTG | - | Government of The Gambia |
| GREC | - | Gambia Renewable Energy Centre |
| GTZ | - | German Technical Agency |
| ICAM | - | Integrated Marine and Coastal Area Management |
| IDA | - | International Development Agency |

| | | |
|--------|---|-------------------------------------------------------|
| IPCC | - | International Panel on Climate Change |
| ISCB | - | Inter-Sectoral Committee on Biodiversity |
| ISCD | - | Inter-Sectoral Committee on Desertification |
| ISCRC | - | Inter-Sectoral Committee for the Rio Conventions |
| LMO | - | Living Modified Organisms |
| LRD | - | Lower River Division |
| MDFT | - | Multi-Disciplinary Facilitation Team |
| NAP | - | National Action Programme to Combat Desertification |
| NAPA | - | National Adaptation Programme of Action |
| NARB | - | National Agricultural Research Board |
| NARI | - | National Agricultural Research Institute |
| NBD | - | North Bank Division |
| NBSAP | - | National Biodiversity Strategy and Action Plan |
| NCC | - | National Climate Committee |
| NCCSAP | - | National Climate Change Strategy and Action Plan |
| NCSA | - | National Capacity Self-Assessment |
| NEA | - | National Environment Agency |
| NEMA | - | National Environmental Management Act |
| NEMC | - | National Environmental Management Council |
| NGOs | - | Non-Governmental Organization |
| NWRC | - | National Water Resources Council |
| OECD | - | Organization for Economic Cooperation and Development |
| PA | - | Protected Area |
| PRSP | - | Poverty Reduction Strategy Paper |
| PVO | - | Private Voluntary Organization |
| RCS | - | Rio Conventions Secretariat |
| SPA | - | Strategy for Poverty Alleviation |
| TAT | - | Thematic Assessment Team |
| TOR | - | Terms of Reference |
| UNCCD | - | United Nations Convention to Combat Desertification |
| UNCCEE | - | UNEP Collaborating Centre for Energy and Environment |
| UNDP | - | United Nations Development Programme |
| UNEP | - | United Nations Environment Programme |
| UNFCCC | - | United Nations Framework Convention on Climate Change |
| UNSO | - | United Nations Sahelian Office |
| URD | - | Upper River Division |
| US | - | United States |
| VDC | - | Village Development Committee |
| WD | - | Western Division |
| WDC | - | Ward Development Committee |
| WWF | - | World Wide Fund |

Annex2 Details of Participants in the NCSA Process

Thematic Assessment Teams

Members of the CBD Assessment Team

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| | |
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