



THE REPUBLIC OF THE GAMBIA

**NATIONAL REPORT ON THE
IMPLEMENTATION OF THE UNITED NATIONS
CONVENTION TO COMBAT DESERTIFICATION
(UNCCD)**

BY

**THE DESERTIFICATION TASK FORCE OF THE AGRICULTURE
AND NATURAL RESOURCES (ANR) WORKING GROUP**

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LIST OF ACRONYMS AND ABBREVIATIONS

ANR	-	Agriculture and Natural Resources
CBD	-	The Convention on Biological Diversity
CBO	-	Community-Based Organization
CCD	-	The Convention to Combat Desertification
CFMA	-	Community Forest Management Agreement
COP	-	Conference of Parties
DAS	-	Department of Agricultural Services
DCC	-	Divisional Coordinating Committee
DKK	-	Dankunku Range Farm
DLS	-	Department of Livestock Services
DOC	-	Department of Cooperation
DOP	-	Department of Planning
ERP	-	Economic Recovery Programme
FAO	-	Food and Agriculture Organization of the United Nations
FCCC	-	Framework Convention on Climate Change
GDP	-	Gross Domestic Product
GFMC	-	Gambia Forest Management Concept
GOTG	-	The Government of The Gambia
GREC	-	Gambia Renewable Energy Centre
GTZ	-	German Agency for Technical Cooperation
IITA	-	International Institute for Tropical Agriculture
LDF	-	Livestock Development Fund
LEAP	-	Local Environmental Action Plan
M&E	-	Monitoring and Evaluation
MOU	-	Memorandum of Understanding
NACD*	-	National Action Plan to Combat Desertification
NAD*	-	National Action Plan for Desertification
NAP*	-	National Action Programme
NARI	-	National Agricultural Research Institute
NEA	-	National Environment Agency
NEMA	-	National Environmental Management Act
NEMC	-	National Environmental Management Council
NGO	-	Non-Governmental Organisation
NTRP	-	National Team of Resource Persons
PSD	-	Programme for Sustained Development
TANGO	-	The Association of Non-Governmental Organisations
UNCCD	-	United Nations Convention to Combat Desertification
UNDP	-	United Nations Development Programme
UNEP	-	United Nations Environmental Programme
UNFCC	-	United Nations Framework Convention for Climate Change
UNSO	-	United Nations Sahel Office
WARDA	-	West African Rice Development Association

* - Used interchangeably in the text.

EXECUTIVE SUMMARY

1. The United Nations Convention to Combat Desertification in those countries experiencing serious drought and/or desertification provides a legal framework for cooperation among development partners. The Gambia signed the Convention in June 1994 and later ratified it in January 1996.
2. While desertification concerns in The Gambia were precipitated by the 1972/73 major sahelian drought concerted public policy actions to deal with the scourge commenced with the proclamation of the Banjul Declaration in 1977. This Declaration spun off a series of natural resources and environmental legislative and institutional developments culminating in the creation of a separate technical ministry (Department of State) for natural resources and the environment in 1981 with appropriate technical departments/unit for forestry, fisheries, water and the environment.
3. In the ensuing decade to these policies, institutional and legal developments, the government employed a series of strategies to deal with the persistent drought conditions. These strategies can be broadly grouped as community participation in resource management, institutional strengthening, research and development, extension and education and, direct public investment programmes and projects.
4. These early efforts at combating the threats of desertification notwithstanding environmental degradation continued at an accelerated rate as a consequence of macro-economic policy failures, including natural resource management policies.
5. The government adopted an Economic Recovery Programme (ERP) in 1985 followed by a Programme for Sustained Development in 1990 in a bid to arrest the escalating economic deterioration and place the economy on sustainable growth path. To address the underlying causes of environmental degradation, it enacted a National Environmental Management Act (NEMA) in 1987 and later formulated and adopted a Gambia Environmental Action Plan (GEAP) in 1992. These post-ERP developments circumscribed the legal and institutional frameworks for environmental and natural resource management, policy formulation, decision-making, implementation and coordination as well as the implementation of the natural resource-related international Conventions on Biological Diversity (CBD), Climate Change (FCCC) and Desertification (CCD). The NEMA established the National Environmental Management Council (NEMC) and the National Environment Agency (NEA). The NEA constituted a number of sectoral Working Groups including the Agriculture and Natural Resources (ANR) Working Group in 1994 to facilitate its sectoral coordinating role.
6. The GEAP registered visible impact in arresting environmental degradation but failed to remedy the underlying structural inadequacies and weaknesses of the economy. In response to these deficiencies, the government formulated and articulated The Gambia Incorporated -- Vision 2020 in 1996 with well-defined macro-economic policy objectives to stimulate accelerated growth.
7. Following the signing of the CCD in 1994, the government designated the

Forestry Department as the Focal Point for its implementation and established a Desertification Task Force as a sub-committee of the ANR Working Group to initiate the process. The government also identified the Federal Republic of Germany as the lead country to serve as facilitator for the elaboration of the National Action Plan (NAP) in The Gambia within the GEAP institutional framework. The Desertification Task Force created a Core Group of the Force made up of NEA, Forestry Department and GTZ representatives in the country to facilitate the NAP elaboration process at the National level. At the local level, the Task Force works through the Divisional Coordinating Committees (DCC). Within any one division, the respective DCC and the Task Force worked together to organize meetings at the district and divisional levels.

8. The ANR Working Group initiated a participatory process for the elaboration of the NAP together with the plans for the CBD, UNFCCC and Local Environmental Action Plans (LEAPs). Through capacity 21, the UNDP funded a 3-day capacity building training workshop in each division to enhance the capacity of the communities in particular, to effectively participate in the NAP process. Farmers undertook two study tours to enrich their appreciation of desertification. These initial events were followed by a national forum attended by representatives of grass-roots communities, local authorities, NGOs, donor community, Diplomatic Corps, special interest groups such as women and youth, the private sector and government agencies. The proceedings of the workshop were organized at plenary and working group levels.

9. Consultations on the Convention were held at three levels through a bottom-up approach – the grassroots zonal level, divisional level and the national level. The consultation aimed at sensitizing the general public, getting the views of local communities and involving the people in the strategy planning exercise of the CCD. Based on the differences in forest and vegetation cover, the country was divided into 16 zones and a team of resource persons conducted the consultation process.

10. The government ratified the UNCCD in January 1996. To implement its commitment to this convention and all other allied conventions and, to operationalise its agriculture and natural resources sector policy proposals of Vision 2020, the government conducted a sector review with the assistance of UNDP and FAO. The review resulted in the development of subsectoral policy objectives and strategies within which specific desertification concerns will be addressed. Similarly the on-going National Action Programme planning process has identified key institutional and local government reform arrangements, agriculture and natural resources sector concerns, population and poverty and, desertification and poverty issues for inclusion in the NAP.

11. The NAP will be monitored within the framework of the GEAP. The monitoring strategy is designed to enhance routine progress review; environmental management; development of subsequent phases of the GEAP; the state of the Environment Report; coordination efforts of key actors, roles and responsibilities for data collection; and, periodic evaluations.

12. The process of the elaboration of the NAP has so far received a fair amount of international assistance. The GTZ and UNSO funded the first national forum through UNDP. The UNDP supported the grass-roots consultations as well as the local capacity building training, educational tours for farmers and direct support to the focal

point through capacity 21. Other sources of funding for the major public agencies active in desertification-related activities are the national budgets and Dedicated Funds mainly the Fisheries Development and the National Forestry Funds. There are plans to create dedicated fund for Biodiversity and Desertification within the framework of the strategy to create new sources of funding.

Annex 1 summarizes the indicators and benchmarks to be utilized to measure the progress of implementation of the NAP with respect to forestry, soil conservation, wildlife management, livestock management, water resources management, energy and, agricultural production and marketing. The indicators are grouped under physical, process and process result indicators.

I. SUSTAINABLE DEVELOPMENT POLICIES, STRATEGIES AND PRIORITIES

A. Introduction

1.1 Desertification is an important ecological process, which gradually transforms fragile environments rendering them unproductive in terms of their potentials for agriculture and other ecological functions. Desertification as a global environmental issue, probably has more impacts on people's lives the world over than any other natural or man-made phenomena. According to conservative estimates by The United Nations approximately 900 million people worldwide are directly at risk of desertification (UNEP 1994). Although desertification affects all regions and all continents, the arid and semi-arid regions are most vulnerable.

1.2 The United Nations Convention to Combat Desertification in those countries experiencing serious drought and/or desertification provides a legal framework for cooperation among countries, international donors, NGOs and grassroot communities based on the spirit of partnership. The Convention to Combat Desertification (CCD) for short, singles out Africa as deserving special attention given the magnitude of desertification and its devastating impacts on the continent. In Africa, it has been estimated that about 32% of the continent's land area is affected by desertification (UNEP 1991).

1.3 The Government of The Gambia (GOTG) signed the CCD in June 1994 and later ratified it in January 1996. In order to coordinate and oversee the implementation of the national action plan to combat desertification, the Forestry Department was designated as the focal point for the convention. The preparation of the action plan as clearly stipulated in the articles of the convention calls for the active involvement of all key actors. In The Gambia, this requirement is being fully observed through the active participation of all stakeholders in the action plan elaboration process underway. In this manner, the National Action Plan for Desertification (NAD) which is in an advanced stage of preparation will ensure that the different and diverse sectional interests are included in the strategies.

B. National Policies and Strategies to Combat Desertification Prior to UNCCD

1.4 Although desertification concerns were prompted by the 1972/73 major Sahelian drought, coherent public policy actions to deal with its impact on the natural resource base commenced with the proclamation of the Banjul Declaration and the enactment of the Wildlife Conservation and Forestry Acts in 1977 and subsequently the enactment of the Water Resources Act in 1979. The Banjul Declaration articulated a coherent public policy for the conservation of nature (fauna and flora) which formed the basis for specific sub-sectoral policies and legislation in the natural resources sector. The legal actions to rationalize natural resource management functions culminating in the creation of a separate Ministry of Water Resources, Forestry and Fisheries with an Environment Unit from the Ministry of Agriculture in 1981, to be responsible for overall natural resource policy formulation and implementation. The legal framework for an orderly and sustainable preservation, conservation, exploitation and utilization of natural resources was consummated in 1991 by the enactment of the Fisheries Act.

1.5 With the creation of the Ministry of Water Resources, Forestry and Fisheries, the technical Departments of Water Resources, Forestry, Fisheries and Parks and Wildlife Management developed subsectoral policies to guide their day-to-day operational management functions and rationalize public sector investment in natural resources development.

1.6 As a consequence of macro-economic policy failures including natural resource management policies, the Government adopted an Economic Recovery Programme (ERP) in mid-1985 which was succeeded by a Programme for Sustained Development (PSD) in 1990. Although the ERP and its successor PSD succeeded in stabilizing the economy, they failed to avert the threat of drought and natural resource degradation attributable to changing climate conditions, gradual deterioration of soil fertility, overgrazing and over-exploitation of available forestry and water resources. To deal with these clinical symptoms of desertification the Government employed a number of strategies. These strategies can be summarise as:

- ◆ **Community Bush Fire Control:** Through these strategy material, training and supervision to ensure effective fire fighting by local communities were provided. Village fire fighting committees which are now defunct were set up in 1978;
- ◆ **Community-Based Forest Management:** Through these strategy GTZ carried out an aerial survey of land use pattern in 1980; a general sensitization campaign on desertification and community forestry was conducted; community rules and regulations to govern the access and use of forest resources were developed; community forest management agreements (CFMAs) covering a forest area of 60,000 hectares were signed with participating communities; and, a permanent structure was built by forestry department to support the implementation of the programme;
- ◆ **Strengthening The Management Capacity of The Department of Forestry:** The technical and administrative capacity of the Department was strengthened through the creation of five divisional offices to carry out forestry monitoring, extension and management;

- ◆ **Creation of an Enabling Environment for NGO Participation:** The Government encouraged and facilitated the creation of the Association of Non-Governmental Organisations (TANGO) in recognition of the role of NGOs, the Private Sector and CBOs as development partners and contributed to building their capacities by allowing secondment or wholesale transfer of civil servants to NGOs and, in some cases providing direct subventions to their operations;
- ◆ **Strengthening of The Department of Parks and Wildlife Management:** The managerial, monitoring and controlling capacities of the Department were strengthened. Kiang West National Park of 11,000 hectares was established to exemplify the coexistence of biodiversity conservation and development. Other National Parks and Wetland Reserve sites were identified for development;
- ◆ **Establishment of Nationwide Conservation, Education and Extension Programme for Wildlife:** Four provincial conservation education centers were erected in the provinces and equipped with educational tools;
- ◆ **Local Community Involvement In Wildlife Conservation and Establishment of Pilot Rural Game Farming Schemes:** Through these strategy, training on wildlife and natural resources conservation was commenced; villages around wildlife protected areas were sensitized to get involved in eco-tourism; issuance of licences to authorize needy households to tap forest resources was introduced; and, Pilot Rural Game Farm was established to controllably hunt the cane-cutter rat, The Gambian giant rat and squirrel;
- ◆ **Strengthening of the Soil and Water Management Unit:** The unit's human resources were expanded and equipped to effectively deal with soil and water management issues and facilitate the incorporation of conservation farming into the farming system;
- ◆ **Integrated Livestock and Rangelands Development Schemes:** This strategy aimed at improving the capacity of local communities to efficiently manage rangeland resources through the establishment of two new integrated Livestock and Rangeland development schemes in Fulladu West and Niamina East. Farmers were trained in integrated livestock and rangeland management.
- ◆ **Strengthening of Gambia Renewable Energy Center (GREC):** The administrative and technical capacity of the centre was improved through the provision of increased trained manpower and equipment to carry out research and development in alternative energy sources;
- ◆ **Establishment of Private and Public Fuelwood and Pole Plantations:** About 200 hectares of private woodlots and 1,300 hectares of public plantation were established.
- ◆ **National Annual Tree Planning and Agro-Forestry Programmes:** Seven provincial nurseries were established to supply the national annual tree planting requirements and Agro-forestry development.

C. National Development Plans

1.7 In spite of the foregoing efforts, the symptoms of incipient desertification resulting from accelerated environmental degradation persisted. This environmental degradation is manifested in declined food production; salt and water intrusion as a result of over-extraction of groundwater; coastal erosion; over-crowding in the urban and other growth centers leading to poor environmental sanitation; increasing air, water and soil pollution etc. In response to the underlying causes of environmental degradation, the government formulated and adopted the Gambia Environmental Action Plan (GEAP) in July 1992 as a national environmental policy framework.

1.8 Although the GEAP has registered visible impact in containing the underlying causes of environmental degradation, the underlying structural inadequacies and weaknesses of the economy continue to limit economic growth. In response to this and, the need for a national sense of purpose and direction in prioritizing its socioeconomic development agenda, the Government formulated and articulated The Gambia Incorporated ... Vision 2020 in May 1996. In consonance with the overall orientation of its Vision, the Government's macro-economic policy objectives are:

- ◆ to improve the overall productivity of the agricultural and natural resource sector;
- ◆ to sustainably increase the contribution of the industrial sector by about three fold from its present level of 11% of GDP through overcoming the existing bottlenecks in the provision of reliable and adequate energy supply; substantial re-orientation of the manufacturing subsector to increase and diversify industry output; increasing the efficiency and competitiveness of the sea and airports and, media and telecommunications services;
- ◆ to improve the contribution of the services sector by creating a strong and efficient financial services system to provide a continuous flow of affordable credit to the private sector; develop and improve the traditional role of the country as an entrepot; and, tourism by encouraging the construction of more hotels;
- ◆ to expand the human resource-base through increased access to education and diversified institutions to favour vocational and skill-based training and entrepreneurship development and, provide adequate, efficient and affordable health care services for all Gambians;
- ◆ to ensure a totally manageable population that will contribute fully to an accelerated socio-economic development;
- ◆ to increase the production of decent housing stock on a regular basis through improving housing development capacity;

- ◆ to foster rational use of the environmental resources for the benefit of the present and future generations; and,
- ◆ to correct public sector institutional failures to deliver necessary infrastructural and social services for effective private sector functioning through improved cost-efficiency, improved service quality and increased institutional response capacity of the civil service and parastatal organizations.

1.9 The foregoing macro-economic policy objectives of the Government provided the basis for the elaboration of subsectoral policies and strategies in the agriculture and natural resources sector and other sectors of the economy in pursuit of the overall goal of the Vision 2020. Key among the other sectors of relevance to desertification concerns are education, health and population.

II. INSTITUTIONAL ARRANGEMENTS AND MEASURES TAKEN TO IMPLEMENT THE CONVENTION

A. Legal and Institutional Frameworks

2.1 As part of the implementation process of the ERP, the Government enacted the National Environmental Management Act (NEMA) in 1987 to address the underlying structural weakness and natural resources degradation of the economy. The Act provided for the establishment of the National Environmental Management Council (NEMC) as the apex policy body for the environment and National Environment Agency (NEA) as the technical secretariat and coordinating organ under the Office of the President for environmental management strategies, programmes and projects. These developments circumscribed the legal and institutional framework for environment and natural resource management policy formulation, decision-making, implementation and coordination. The policy decision-making function is assumed by NEMA. The Department of State for Presidential Affairs, Fisheries and Natural Resources is responsible for policy formulation whereas the technical Departments are responsible for policy implementation and the NEA is responsible for coordination.

2.2 All the public agencies operating in the environment and natural resource sector of The Gambia are required to operate within the broad framework of the GEAP and in a decentralized administrative structure to adequately address the local-specific environmental and natural resource concerns of the individual divisions. The National Action Plan to Combat Desertification (NAD) is therefore being elaborated and implemented within the foregoing institutional framework of the GEAP process.

B. Institutional Arrangements of the Implementation of CCD

2.3 At the first Conference of Parties (COP 1) to the Convention to Combat Desertification (CCD) held in Rome from 26 September to 10 October 1997, the Federal Republic of Germany was selected as the host Country for the Permanent Secretariat of the Convention. Prior to this development, The Gambia government identified the Federal Republic of Germany as the Lead Country to serve as Facilitator for the elaboration of the National Action Plan to Combat Desertification (NAD) in The Gambia within the institutional framework of the GEAP process .

National Level Implementation Arrangements

2.4 At the national level, a national coordinating body, called the Agriculture and Natural Resources (ANR) Working Group was instituted in 1994 prior to the ratification of the CCD, to facilitate the coordinating role of the NEA. As a coordinating institution, NEA's role is to ensure that all national action plans are in conformity with the GEAP and monitor their elaboration processes.

2.5 The ANR Working Group is a permanent body with representatives from government institutions and NGOs. The Group is chaired by the Permanent Secretary of the Department of State for Agriculture. The Group meets once every three months to discuss issues related to the environment and natural resources. The ANR Working Group's mandate includes the development of a multi-sectoral natural resources management strategy that seeks to address issues raised by the GEAP and ensure that the development of action plans for the conventions on Desertification, Biodiversity and Climate Change are carried out within the decentralized process of the GEAP. The secretariat of the ANR Working Group is located in the National Environment Agency.

The Forestry Department was identified by The Gambia government in 1994 as the Focal Point for the implementation of the Convention to Combat Desertification. Since then, a Decentification Task Force chaired by the Focal Point was created as a sub-committee of ANR Working Group. The Sub-committee reports to the ANR Working Group on issues related to the CCD. The mandate of the Sub-committee is to facilitate the elaboration of the National Action Plan to combat desertification (NAD) within the overall coordinating role of NEA. The Focal Point is the lead agency in all issues related to the Convention to Combat Desertification. For example, the National Focal Point took the initiative in submitting a request on behalf of The Gambia Government for international assistance for the elaboration of the NACD in The Gambia.

2.7 As support to the Focal Point, a Core Group of the Task Force, made up of the NEA, Forestry Department and GTZ representatives in the country, has been constituted. This group is responsible for facilitating the NAD elaboration process. For example the group developed the draft work programme for the elaboration of the National Action Plan on Desertification and Terms of Reference for the resource persons for the thematic papers, for the Task Force to review.

2.8 For the effective implementation of the Action Plans of the Conventions to Combat Desertification, Biodiversity and Climate Change, the ANR Working Group requires their integration into the GEAP and the Local Environmental Action Plans (LEAP) which will be decentralized.

Local Level Implementation Arrangements

2.9 At divisional level, the Task Force works through the Divisional Coordinating Committee (DCC) of each of the five provincial administrative divisions for the elaboration and implementation of the Action Plan. The two groups work together to organize grass-root level meetings at district and divisional levels and prepare reports to be submitted to the ANR Working Group for review. The first consultation report of the district and divisional meetings constituted the main working documents for the national forum. There will be more consultations at grass-root, sectoral and NGO levels as a follow-up to the first national forum. The results will be presented to a second national forum in due course.

III. PARTICIPATORY AND CONSULTATIVE PROCESSES FOR THE PREPARATION AND IMPLEMENTATION OF THE CONVENTION

A. The Participatory Process

3.1 After the signing and ratification of the Convention to Combat Desertification, the National Desertification Task Force working through the ANR Working Group, initiated a participatory process for the elaboration of the National Action Plan to combat desertification. The exercise was jointly undertaken with the preparation of the action plans for the Convention on Biological Diversity (CBD) and UN Framework Convention for Climate Change (UNFCCC) as well as the Local Environmental Action Plans (LEAPs).

3.2 The process was based on a bottom-up approach to ensure ownership, awareness and full participation of the grass-roots communities who are the primary stake-holders and users of forest resources. The participation of extension agents and implementors was also ensured during the consultation processes.

3.3 The process was initiated with a set of activities at the grassroots level through consultations with rural communities. These consultations were basically designed to sensitize the local communities on the provisions of the convention as well as the causes and effects of desertification. This was an essential prerequisite for the design and articulation of strategies by local participating communities to combat desertification. At the divisional level, consultations were made in all five administrative divisions (**see location map**) with members of the Divisional Coordinating Committees on not only the action plan on desertification, but also the local Environmental Action Plans as well as the other two conventions.

3.4 Through UNDP funding under capacity 21 project, a three-day capacity building training workshop was organized in all divisions on community resource management strategies in combating desertification. Participants ranged from government, NGO and private sector representatives. A study tour for farmers was also arranged to the northern parts of Senegal for the realization of the actual effects of desertification and to Guinea Bissau for the appreciation of undisturbed natural forest types.

3.5 As a follow-up to these initial consultations with the grass-roots communities and the local authorities, a National Forum was planned and held in the form of a workshop with a view to achieving the following objectives:

- ◆ To provide a forum for a national consultation on the results of the zonal and divisional consultations with a view to synthesizing all the desertification issues into one national report in readiness for the elaboration of a national action programme for combating desertification;
- ◆ To sensitize the policy makers at the level of the government and non-governmental institutions about the Convention and its implications for the national economy; and,

- ◆ To pave the way for the forging of a strong partnership among government institutions, Non-Governmental Organizations, donor partners and the local communities for the elaboration and implementation of an action programme for combating desertification on a nationwide basis.

3.6 The National Forum which was held from 17 to 19 November 1998, was the first of two fora planned to be held with the local communities, NGOs, Government Departments and local communities for validation and further review so as to capture other new ideas and events of relevance that might have come up since the first zonal consultations.

3.7 Invitations for participation in the workshop were sent to representatives of the zonal meetings, the local authorities, government departments and Departments of State, NGOs, representatives of the donor community, Diplomatic Missions and special interest groups such as women and youth groups and the private sector. The workshop proceedings were organised at two levels - plenary and working group levels.

Working Groups Level

3.8 For the working group discussions three thematic areas were discussed within the context of the causes of natural resource degradation and the combat of desertification. The discussions centered on institutional framework and local government reform issues, agriculture and natural resources issues and, population and poverty alleviation issues. The reports of the findings of the Working Groups were presented at the plenary which was followed by discussions and adoption of recommendations on measures for inclusion in the National Action Programme (NAP).

Plenary Level

3.9 At plenary, the workshop was informed of and further sensitized on the participatory and multi-disciplinary approach that the Task Force had adopted for the implementation of the convention which is in conformity with the relevant provisions of the convention and the Annex for Africa. Reflections were also made on the feeling of a sense of ownership that was created at grass-roots level with regard to the reports and proposed activities. The need for the Convention on Desertification and all other environment-related Action Plans was emphasised to avoid duplication of efforts while ensuring the efficient and effective use of the limited financial and human resources available. The role of the ANR Working Group in ensuring the streamlining of the implementation and promoting synergy among the environmental conventions such as the CCD, CBD and FCCC all of which operate under the GEAP policy guidelines, was clarified. The need for government to pay particular attention to the inclusion of environmental matters in educational and other physical considerations with a view to promoting development and use of indigenous and scientific knowledge in the framework of the requirements of the convention was emphasised.

3.10 In concluding the workshop, follow-up activities in the form of recommendations

for continued multi-sectoral consultations for the final elaboration of the national action plan on desertification were made.

B. The Consultative Process

3.11 The following specific set of activities were undertaken during the consultations:

- ◆ Grass-root consultations at the level of the zones which led to the development of zonal strategies;
- ◆ Divisional consultations in the form of workshops which led to the development of divisional strategies for the CCD; and,
- ◆ During the 1st National forum divisional strategies were discussed and synthesized into the 1st draft of the National Action Plan on Desertification.

3.12 The consultations, which led to the elaboration of divisional reports, had the following main objectives:

- ◆ To sensitize the general Gambian population about the new environmental Conventions such as the Convention to Combat Desertification (CCD), the Framework Convention on Climate Change (FCCC) and the Convention on the Conservation of Biological Diversity (CBD), their provisions and their relevance to the current Gambia environmental situation;
- ◆ To get the views of the local communities about the causes of desertification in the country; and,
- ◆ To allow the local communities to contribute towards defining strategies and elaborating plans for combating desertification in the country through cooperation, coordination and partnership arrangements.

3.13 The process of consultations was also used as an opportunity to gather necessary information from the grass-roots for the elaboration of Local Environmental Action Plans (LEAP), which will constitute the framework local action plan for the implementation of the environmental Conventions.

3.14 The strategy adopted for the grass-root consultations collapsed the 36 administrative districts of the country into 16 zones. These zones reflected differences in forest and vegetative cover. They are:

- ◆ Zone 1 - Lower Niumi, Upper Niumi and Jokadu;
- ◆ Zone 2 - Lower Baddibu, Central Baddibu and Upper Baddibu;
- ◆ Zone 3 - Kiang West;

- ◆ Zone 4 - Kiang Central and Kiang East;
- ◆ Zone 5 - Jarra West, Jarra Central and Jarra West;
- ◆ Zone 6 - Upper Saloum;
- ◆ Zone 7 - Niamina Dankunku, Niamina East and Niamina West;
- ◆ Zone 8 - Fulladu West and Janjanbureh;
- ◆ Zone 9 - Fulladu East;
- ◆ Zone 10- Kontora;
- ◆ Zone 11- Sandu;
- ◆ Zone 12- Niani and Nianija;
- ◆ Zone 13- Wuli
- ◆ Zone 14- Sami
- ◆ Zone 15- Kombo North, Kombo South, Kombo East and Kombo Central; and,
- ◆ Zone 16- Foni Brefet, Foni Bintang, Foni Kansala, Foni Bondali and Foni Jarrol.

3.15 A national team of resource persons (NTRP) identified by the ANR Working Group was established for the purpose of grass-roots consultation. The team consisted of the following: The Director of Forestry (National Focal Point for the desertification Convention and Team Leader), Director Department of Parks and Wildlife Management (National Focal Point for Biodiversity Convention), National coordinator of Climate Change Convention - staff of the Department of Water Resources and the Coordinator Inter-Sectoral Network at the National Environment Agency for the Local Environmental Action Plans. The team visited all the divisions and met with members of the Divisional Coordinating Committees (DCC) to discuss the process for the implementation of the Local Environmental Action Plans and the Action Plan for the Convention to Combat Desertification as well as the other two conventions.

3.16 At the zonal level meetings, the local community members representing different stake-holders (actors) participated. The average attendance per zone was estimated at one hundred and fifty persons. The final strategy documents of all the Divisions are being prepared for presentation by the Divisional Coordinating Committees to the National Forum.

C. Implementation Arrangements

3.17 For the effective implementation of the Action Plans of Biodiversity, Climate Change and Desertification, the ANR Working Group advocates for their integration into the GEAP and the LEAP process.

3.18 For the elaboration and implementation of strategies, programmes and plans at the divisional levels, the Task Force works through the Divisional Coordinating Committee (DCC) of each of the five provincial administrative divisions.

3.19 The two bodies worked together to organize grass-roots level meetings and for the work programme implementation at district and divisional levels. The DCC is mandated to prepare and submit reports to the ANR Working Group for review and comments. In developments similar to the elaboration of the Action Plan to Combat Desertification, the district reports constitute the divisional reports for presentation at a national forum.

3.20 As support to the Focal Point to facilitate decision-making and preparation for Task Force meetings, a core group consisting of three Task Force Members and

representative of the donors was formed to support the Action Plan elaboration process.

3.21 During consultations for the elaboration of the NAD, Forestry Department collaborated with NEA, and the two other focal points for the conventions on Biological Diversity, and Framework Convention on Climate Change and selected number of Non-Government Organization members.

3.22 The collaboration was in the spirit of integrating and harmonizing the NAD with the LEAP and the two conventions to enhance effective planning of the implementation strategies of the three conventions and the LEAP at grass-roots level to minimize duplication and conflicts.

3.23 The consultations were conducted in the five administrative divisions and their respective districts. The total number of districts were divided into sixteen zones based on agro-ecological and socio-economic peculiarities. The zonal level meetings drew their participants from different stake-holders (actors).

IV. MEASURES TAKEN OR PLANNED WITHIN THE FRAMEWORK OF THE NATIONAL ACTION PROGRAMME (NAP)

A. Measures Undertaken since Ratification of UNCCD

4.1. The Government ratified the Convention to Combat Desertification (UNCCD) in January 1996 and its allied Conventions, the Framework Convention on Climate Change and Convention on Biological Diversity in May 1992 and June 1994 respectively. To implement its commitments to these conventions and to operationalise the agriculture and natural resources sector policy proposals of Vision 2020, the Government embarked on a comprehensive agriculture and natural resources sector review with the assistance of UNDP and FAO. The empirical survey of the review process prepared sixteen technical documents as the background documentation for a National Conference on Agriculture and Natural Resources in February 1997. The Government also elaborated an Agriculture and Natural Resource Research Master Plan in 1998.

4.2 Following the successful review and finalization of the technical documents, the Government developed a Medium-term Agricultural and Natural Resources Subsectoral Policy Objectives and Strategies (1998-2002) as follows:

Sectoral Policy Objectives

- Traditional Food and Cash Crops Sub-sector: i) to develop and/or screen and introduce crop cultivars and varieties of a duration appropriate to the climatic circumstances of the major agricultural zones; ii) to address the institutional, socio-economic and physical constraints to the widespread adoption of known labour saving-devices to alleviate labour bottlenecks and improve labour productivity in crop production; iii) to promote and facilitate the use of appropriate integrated pest control measures and, biological and chemical technologies such as herbicides in crop production to improve land productivity and alleviate labour bottlenecks especially at weeding; iv) to promote introduction of mechanical threshing of groundnuts and efficient methods of field drying to reduce crop losses and aflatoxin contamination; v) to maintain the vigour and the purity of the seeds of crop varieties in circulation through developing an efficient production, storage and distribution system of seed; vi) to encourage the adoption of simple soil and water management practices and structures such as construction of contour bunds and ploughing and, judicious application of conservation tillage; and, vii) to improve the efficiency of crop marketing and processing by facilitating and encouraging increased private sector participation through provision of appropriate incentive regime, social and economic infrastructure and a legal framework that affords sufficient protection to private ownership and reduces production cost.
- Horticultural Sub-sector: i) to increase commercial fruit and vegetable production and productivity in order to augment rural cash income and save and/or earn foreign exchange; ii) to promote increased consumption of fruits and vegetables in order to raise the nutritional status and better meet the food requirements of the population; iii) to intensify the efficient use of the human, land and water resources in order to reduce rural unemployment and soil degradation and, enhance land productivity especially during the long dry-season; iv) to contribute to the national efforts and endeavour to diversify agricultural

production and make farming more attractive; v) to promote development of commercial production and processing of intensive and high-value agricultural produce; vi) to develop appropriate forms of production organization and planning processes for large number of scattered groups of small-scale producers to regularize supply and prolong the production season; vii) to create adequate institutional capacities for the timely provision of inputs and technical services suitable for commercialization of small-scale collective vegetables production; and, viii) to provide an active link between agriculture and tourism through provision of copious supply of fresh vegetable and fruits to the tourist industry.

- **Livestock Sub-sector:** i) to contribute to the diversification of agriculture and rural income through improvement of the livestock sector and to better meet dietary requirements and maximize foreign exchange earnings; ii) to keep livestock production in balance and at levels consistent with the limitations of rural resources and to meet the requirements for draught animals; and, iii) to integrate crop and livestock production systems so as to reduce environmental degradation and improve soil fertility while enhancing availability of supplementary feed from crop residues.
- **Land and Water Resources Policy Objectives:** i) to strengthen the national capacity to better understand the weather and climate as the basis for providing timely weather information to agricultural producers in particular; ii) to provide good quality drinking water in sufficient quantity throughout the country thereby contributing to improvement of health standards of the population; iii) to make optimum use of both surface and groundwater resources both for agriculture and domestic purposes; and, iv) to promote the rational use of available water resources and improve and maintain their quality.

Fisheries Policy Objectives: i) to make optimal use of the marine, riverine and potential aquaculture fishery resources of the country; ii) to promote value-added processing of fisheries resources to increase the returns to the participants in the subsector; iii) to encourage the exploitation of the nation's pelagic fishery resources as against the demersal resources which have reached their optimal yield level; iv) to ensure that fish and fish products are readily and widely available in all parts of the country; and, v) to provide conducive investment environment to attract more private sector operators into the sub-sector.

- ◆ **Forestry Policy Objectives:** i) to reserve, maintain and develop 30% of the land area into forest and ensure that 75% is managed and protected according to accepted forest management principles; ii) to provide an adequate supply of wood and forest products for domestic and industrial uses; iii) to minimize soil desiccation and soil movement caused by water and wind erosion thus reducing soil degradation and thereby enhancing land productivity and sustenance of adequate level of agricultural production; iv) to maintain the stability of river banks; v) to develop economic use of forest environment; and, vi) to optimize government and/or community benefits from the forestry subsector.
- ◆ **Wildlife Policy Objectives:** i) to develop and manage effectively and in accordance with the principles of the Banjul Declaration and the Wildlife Conservation Act 1997, representative examples of the Gambia's fauna and flora for the conservation and sustainable use of biological diversity, maintenance of essential ecological processes and life support systems for now and posterity; ii)

to create favourable conditions for increased revenue generation from wildlife resources for further development and for yielding sustainable benefits for surrounding rural communities; iii) to develop respect for and increase awareness of wildlife and to practically demonstrate that wildlife conservation is another viable land use option that can contribute significantly towards not only rural economic, but national economic development as well; and, iv) to encourage private sector investment in bio-diversity and facilitate community biodiversity conservation and utilization schemes.

- ◆ **Agricultural and Natural Resources Research Policy Objectives:** i) **Crop Improvement:** to counteract the most significant problem faced by rainfed agriculture (i.e drought and reduced rainfall) through the introduction of new and improved high yielding varieties into the various cropping systems; methods of providing supplemental irrigation also need to be investigated; ii) **Crop Diversification:** to diversify the crop mix by systematic introduction of new crops such as sesame, vegetables and fruits crucial for ensuring a more diverse source of income for farmers and increasing the utility of farm product through processing and transformation; iii) **Soil Fertility Maintenance:** to manage long-term pressure from continuous cultivation of land, increased mechanization and run-off with associated soil nutrient and fertility loss and improve crop production and productivity through better soil fertility maintenance techniques and measures; iv) **Pest Management:** to reduce the considerable amount of food, produce and livestock losses through pests and diseases and investigate into the myriad of problems in crops, livestock, forestry and fish production; and, v) **Expanding Cultivation of more Arable Land:** to bring more arable land under cultivation through the use of appropriate farm machinery, implements and technologies.

4.2. In addition to the foregoing agricultural and natural sub-sectoral policy objectives the government articulated an educational policy, trade and industrial policies, national population policy and health policy.

Sectoral Strategies

4.3. Consistent with prevailing natural resources sub-sectoral constraints and the imperatives of alleviating poverty and food insecurity in the medium-term, the study identified the following agriculture and natural resources subsectoral strategies in pursuit of the foregoing subsectoral policy objectives:

- ◆ **Traditional Food and Cash Crops Sub-sector Strategies:** i) deepen and consolidate the integration of agronomic, pastoral, engineering and crop protection research capabilities to yield technological innovation packages that are relevant to the socio-economic, climatic and biological problems of the crop production environment; ii) improve mobility, organization and programme management of the extension system to be able to provide and sustain a flow of technological and technical information relevant to the crop production problems of the farmers; iii) intensify training of both extension agents and farmers alike to improve extension skills and the technical content of extension messages and increase the capacity of farmers to participate effectively in the management of agricultural institutions; iv) emphasize the cultivation of drought tolerant, short-cycle crop varieties particularly for upland cultivation; v) select and promote salinity tolerant rice varieties for swamps with salinity problems; vi) select and promote crop varieties with improved and stable yields with tolerance to stresses such as drought, pests,

diseases, soil toxicities and consumer acceptability; vii) implementation of a reliable private sector-managed seed production programme producing seeds that are affordable by small farmers and creation of adequate credit facilities to ensure timely availability of essential inputs; viii) improving small-scale production by organising small-scale producers into self-help groups on community basis or associations and to create credit facilities for them to acquire concrete wells and suitable pumping facilities for irrigation; and, ix) facilitate and encourage the formation of growers and exporters associations that could set up efficient processing and marketing concerns.

- ◆ **Horticultural Sub-Sector Strategies:** i) establish a programme whereby groups of farmers or growers associations especially women groups with the potential to embark on commercially sustainable horticulture production can be provided with development grant/credit to acquire concrete lined wells with appropriate water lifting devices. Also in view of the quality problem and declining groundwater resources, increasing emphasis would be placed on rain water preservation programmes where possible for horticultural production; ii) improve the level of professionalism of research and extension workers through appropriate training, as well as train growers on improved production technologies and methods; iii) encourage the association of growers and exporters to assist government in coming up with ways and means of tackling the problem of limited and high cost air cargo space as well as finding alternative means of freighting; iv) promote the establishment of a strong operational link between small-scale horticultural producers and large-scale horticultural farms and exporters through the creation of out-grower schemes for the mutual benefits of both groups.

- ◆ **Livestock Sub-Sector Strategies:** i) improving animal access to grazing areas and watering facilities and nutrition especially during the dry season; ii) instituting controls against bush fires; iii) providing prophylactic treatments against diseases on regular rather than emergency basis; iv) improving housing and living conditions and hygiene; v) avoiding over stocking by encouraging higher off-take; vi) slaughtering animals under hygienic conditions and promote quality; vii) reducing health risks due to animal pollution; viii) modernizing processing, grading and establish adequate market outlets; ix) promoting community participation in range management including efficient management of fodder resources; xi) exploiting well adapted and proven animal species for breeding and also introduce exotic species; xi) encouraging Gambian professionals into livestock entrepreneurship; and, xii) establishing a livestock development fund.

- ◆ **Land and Water Resources Development Strategies:** i) intensity regional collaboration within the framework of the construction of a dam and subregional water sharing arrangements; ii) intensification of measures to address erosion and land degradation through community-based integrated water-shed management and the implementation of rain water harvesting techniques; iii) monitoring of salinity levels in the river and groundwater as a basis for irrigation expansion; iv) exploration and assessment of the groundwater resources for portable and/or irrigation purposes and the introduction and promotion of water lifting devices such as solar-powered pumps and manually operated, animal-driven and mechanically operated devices; v) development of a national institutional capacity to cope with land and water development problems in The Gambia; and, vi) optimize available waster use through intensification of agricultural production

and explore of the use of saline and waste water in agriculture.

- ◆ **Fisheries Development Strategies:** i) development and implementation of a 5-year plan for fisheries resources surveys in order to establish reliable biomass estimates and maximum sustainable yields; ii) formulation and implementation of a 10-year aquaculture development plan; iii) design and implement a research plan to improve knowledge about fish species, biomass and productivity of the River Gambia; iv) development of the commercial potentials of high value crustaceans and shell fish such as oysters, shrimps and crabs; v) establish viable credit system suitable for the most needy operators in the rural communities; vi) regulate the behaviour of operators in the industry through imposition of fishing licence fees to reflect resources management costs; vii) develop a reliable fish distribution and marketing network through the provision of cold storage facilities at major inland markets; viii) regulate fishing methods, gears and fishing intensity to the regenerative capacity of the resource base, especially for the commercially important species which are highly susceptible to depletion (demersals, shrimps and cephalopods); ix) encourage and facilitate the development of value-added fishery products particularly by individual operators; and, x) involve resource users in the rational utilization and co-management of the resources through popular participation especially members of the fisheries centre management committees of the coastal and inland community fisheries centres.

- ◆ **Forestry Development Strategies:** i) embark on a national afforestation programme as a measure of regaining the lost forests, stabilize the ecosystem and hence improvement in the rainfall pattern and soil productivity; ii) design and implement an ecologically more sensitive method of bush clearing than by bush fire; iii) promote the practice of agro-forestry; v) embark upon educational campaign on the ecological and economic advantages of private plantations of woodlots especially in the coastal areas; vi) plan and take a forestry inventory; vii) intensify community awareness on joint-management of forests with government; viii) encourage community participation in regulated or rotational grazing plans and harmonize the interest of crop and livestock farmers; ix) intensify the protection of the country's forest resources through community ownership and involvement in the management of natural woodlands and through the promotion of national tree planting programme; x) implement programmes of reforestation especially with species of economic value and to establish village woodlots; xi) expand and improve beekeeping activities at the village level; and, xii) maintenance of a forestry service staffed with trained personnel to administer the forest resources of The Gambia in accordance with stated policy.

- ◆ **Wildlife Development Strategies:** i) increase wildlife protection area coverage from 3.5% to 5% of the total land area and reduce regional imbalance in terms of protected area distribution; ii) adoption of land-use practices around wildlife protected areas to promote the conservation of biodiversity; iii) encourage and promote greater private and community participation in biodiversity conservation through the provision of appropriate social and economic incentives; iv) strengthen regional and international co-operation in the development of collaborative activities and reformulate the wildlife regulatory framework to adequately reflect our international commitments; v) review of national policies and laws to enhance biodiversity conservation and sustainable use of wildlife resources; vi) strengthen the capacity of the Department of Parks and Wildlife Management to be able to carry out its functions of conservation and sustainable

use of wildlife resources and the fair and equitable sharing of benefits arising out of the utilization of the wildlife resources; and, vii) increase public awareness about wildlife and general biodiversity issues.

- ◆ **Agricultural and Natural Resources Research Strategies:** i) development of the medium-term aspects of a long-term research masterplan which defines optimum resource levels required for effective research including personnel, equipment and time; ii) development of more efficient crop production systems through coordinated and integrated disciplinary research efforts so that commodity research programmes are scientifically sound, cost-effective and all encompassing; iii) intensify crop protection, varietal screening and testing of rootstocks, water and fertilizer use efficiency, quality control and marketing; iv) development of appropriate technologies to modernize livestock production to meet the requirements of the growing population and that of the tourist industry and intensify production including the establishment of peri-urban dairy and rearing of short-cycle animal species by focusing on improvement of animal feed resources; improvement of genetic potential; and, studies of technical, environmental, socio-economic and financial feasibility of livestock production enterprises; v) research on greater protection of forests through the control of bush fires, sustainable utilization of forest resources, adaptation of agro-forestry techniques, industrialization of forest products and socio-cultural implications of community forests; and, vi) focus wildlife research on collecting baseline information on wildlife species, information on the effect of bush fires on wildlife, establishment of a threatened species programme, options for providing buffer zones, assessing the population of range and marine animals and ensuring that a balanced ecosystem is restored.

B. Measures Identified to be Undertaken within the Framework of the National Action Programme (NAP)

4.5. The preparation of the NAP commenced shortly after the ratification of the CCD in January 1996. The process of the elaboration of the NAP is in progress. Within the framework of the subsectoral policy objectives and strategies identified in section A above and the GEAP, the following NAP specific measures/actions are planned:

Institutional Framework and Local Government Reform

4.6. Considering the present institutional arrangements at the local and national levels and the experiences gained during the initial grass-roots consultations, it is planned that the following institutional arrangements be adopted for the implementation of the Convention:

- ◆ The existing ANR structure should be maintained at the National Level to ensure implementation of the CCD;
- ◆ The National Task Force on CCD should be re-designated into a National Sub-Committee in consideration of its long-term commitment to the implementation of the Convention. Similarly the other Task Forces on Biodiversity and Climate Change should be integrated into the National Sub-Committee;
- ◆ The memberships of both the ANR Working Group and the National Sub-

committee must be broadened to include the Farmer's Platform and the private sector, with the option to co-opt other stakeholders as and when necessary;

- ◆ On the issue of the involvement of the **NGOs** in the planning and implementation of the Convention, the following measures are planned to enlist their active involvement at all stages: i) Build the capacity of stakeholders (NGOs and CBOs) to assume effective responsibility in the implementation of the CCD; ii) The commitment of the NGOs in the implementation of the CCD to be ensured by signing Memoranda of Understanding (MOUs) with relevant agencies; iii) TANGO to provide a list of NGOs that are to be involved in the implementation of the CCD; and, iv) At the divisional level the Divisional Coordinating Committees should co-ordinate the effective implementation of CCD sectoral activities with NGO involvement within their respective divisions;
- ◆ For the effective involvement of the **Private sector** in the implementation of the CCD the following measures are planned: i) Development of appropriate tools for the participation of the private sector in CCD implementation; ii) Making it a legal requirement for the private sector individuals whose activities have negative impacts

on the environment to be obliged to plough back some of their profits in rehabilitation measures; iii) The Divisional Coordinating Committees (DCC) to be responsible for the sensitization of the private sector for their involvement in the implementation of the CCD within their respective divisions; and, iv) The Farmer's Platform to be represented in the DCC; and,

- ◆ In order to integrate the **implementation of the CCD, CBD and FCCC** in a holistic manner, the following institutional measures through which the elaboration of the NAD is being conducted are recommended for institutionalization: i) At the National Level the ANR Working Group should co-ordinate the effective linkages between all the conventions; ii) At divisional level the DCC should co-ordinate effective linkages between all the conventions; iii) At the divisional level, where a Focal point of a particular Convention is absent, focal points of other conventions should facilitate the activities of that convention; and, iv) The DCCs should ensure active involvement of NGOs in creating effective linkage for the activities of all the conventions.

Agriculture and Natural Resources

4.6. From consideration of the Divisional LEAP reports, the major agriculture and Natural Resources sub-sectors that have been identified by the grass-roots consultation for addressing in the efforts to combat Desertification are:

- Crops
- Livestock
- Forestry
- Wildlife
- Soils and Land
- Water Resources and Climate
- Settlement
- Fisheries

4.8 . To address the main causes of degradation/desertification in the foregoing subsectors the following actions are proposed for inclusion in the National Action Programme:

- ◆ **Crop Sector:** i) Promotion of conservation farming practices; ii) Expansion and strengthening of farmer training programmes; iii) Promotion of fruit orchards establishment; iv) Farmer empowerment; v) Stimulation of research; vi) Promotion of composting; vii) Establishment of farm boundaries; viii) Intensification of extension education; ix) Timely and affordable availability of farm inputs; x) Adoption of water harvesting systems; xi) Promotion of land reclamation activities; and, xii) Better pricing policies for farm produce;
- ◆ **The Livestock Sector:** i) Sensitization/awareness creation; ii) Popular participation in range resources management, feed production and conservation; iii) Establishment of intensive feed gardens; iv) Protection of cattle routes from encroachment; v) Construction of watering points; vi) Water harvesting and conservation for livestock production; vii) Improve management/production; viii) Trade, marketing and processing of livestock production to increase off-take; ix) Livestock Development Fund (LDF) and tax Area Councils; x) Development of rangeland and water and, livestock development projects; xi) Develop sheep and goat products; xii) Promote integrated livestock production systems; xiii) Strengthen the Women in Development livestock projects; xiv) Integrate livestock production into the overall Rural Develop programme; and, xv) Intensify sensitization and training programmes;
- ◆ **Forestry Sector:** i) Nationwide implementation of Gambia Forest Management Concept (GFMC); ii) Cross – Boarder dialogue on forest fires and tree planting; iii) Intensified public awareness campaigns; iv) Increase tree planting activities (road sides, farm boundaries, grave yard boundaries etc); v) Reduce forest exploitation licences; vi) Implement the Community Forestry, Forest Park Management and the establishment of Forestry Funds as provided for in the new forestry Bill;
- ◆ **Wild life Sector:** i) Plan and coordinate eco-tourism activities; ii) Encourage alternatives to the use of fires as a hunting tool; and iii) Plan and coordinate habitat protection with community involvement;
- ◆ **Soil Sector:** i) Development of farming systems that ensure better farming practices; ii) Preparation of national land suitability and soil fertility maps/plan; iii) Introduction and intensification of biological approach to soil fertility restoration and conservation methods and general land reclamation methods; iv) Apply integrated fertilizer technology to development; v) Expand and intensify dyke construction for salinity control and water harvesting; vi) Combined biological and chemical approach for problem soils; viii) Promote and strengthen the integrated watershed approach; and, ix) Strengthen the institutional capacity of the SWMU to adequately attend to the very serious land and soil degradation trends in the country.
- ◆ **Water Resources Sector:** i) Establishment of sufficient climatic and hydrological monitoring network; ii) Development of well-equipped hydrological and meteorological networks; iii) Develop capacity of the Department of Water

Resources; iv) Assess and regulate abstraction rate of water; v) Introduce water harvesting; vi) Establishment of Water Management Committees at community levels; and, vii) Sensitization and continuous educational campaigns on all aspects of water management for the Water Management Committees.

- ◆ **Human Settlement Pattern:** i) Planting and caring of trees; ii) Introduction of alternative building materials and sources of energy; iii) Sensitization for attitudinal change; iv) Discourage new settlements; and, v) Reduction of forest licence owners.
- ◆ **Fisheries Sector:** i) Awareness creation; ii) Encourage use of other boats than wooden ones; iii) Introduction of improved/efficient smoking stoves; and, iv) Intensify public education/awareness campaigns.

Population and Poverty and, Desertification and Poverty

4.9 Considering the linkages between desertification and poverty and population and poverty, the following measures are identified for adoption within the NAP:

- ◆ **Forestry:** i) Enforce the adoption of the new Legislation (the Forestry Bill/1998); ii) Re-forestation/afforestation (as deforestation method); iii) Promote community forestry concept and private forestry; iv) Promote border tree planting; v) Promote eco-tourism (Resorts, Parks); vi) Initiate genetic (Plant) resource conservation (Gene Bank); vii) Control of bush fires (Community based fire fighting brigades); and, viii) Promote large scale recycling of forestry products (paper) – i.e. establishment of recycling plants;
- ◆ **Soils:** i) Review land tenure system; ii) Promote proper land use planning (Countrywide); iii) Encourage the use of appropriate farming techniques such as Agro-forestry; Contour farming; Integrated watershed management; Soil fertility maintenance; and, Composting/organic farming; and, iv) Construction of anti-salt/water retention dykes, erosion control measures;
- ◆ **Water Resources:** i) Increase access to water (Portable); ii) Sensitization in water harvesting from roof tops and run-offs; and, iii) Legislation to control surface and underground water exploitation (Water Board Act);
- ◆ **Livestock:** i) Rangeland Development; ii) Feed conservation/utilization; iii) demarcation of stock routes; iv) Encourage controlled grazing within Forest Parks; v) Provision of strategic watering points; vi) Increase off-take; vii) Encourage value addition to the production of animal product (DKK Range Farm); viii) Increase/ expand cross-breeding programme; and, ix) Control of diseases;
- ◆ **Population and Desertification:** i) Government should intensify its efforts to increase school enrolment of girls and include population issues in the educational Curricular; ii) Implement the decentralization plan to improve social services and employment opportunities at the rural level; iii) A policy on refugee repatriation should be adopted for those political refugees whose country situations have improved; iv) Refugees should be educated on environmental issues; v) More stringent immigration policies/control should be implemented; vi) Enterprise development for rural youth/women should be encouraged to reduce rural-urban and rural-rural migration; vii) Family planning campaigns/education (“Fankanta”)

should be intensified; viii) Social security services should be expanded to cover all sectors of the population; ix) Border control should be enforced; x) Introduce producer

Cooperatives e.g. vegetable producers, livestock, cottage industries etc; and, xi) Support the existing poverty solving initiatives of the local population and NGOs.

C. Monitoring and Evaluation

4.10 The NAP will be monitored within the framework of the GEAP. The purpose of the GEAP M&E Strategy was to provide on-going feedback to decision-makers, GEAP implementing agencies and the Gambian public regarding the effectiveness of GEAP activities and programmes so that improvements can be made and future plans incorporate lessons learnt from current experience. The objective of the strategy was to develop a user-friendly monitoring and assessment system, presenting the relevant indicators, appropriate measures, baseline, targets, assumptions, and data sources and collection methods.

4.11 This strategy is based on the assumption that regular reviews will be conducted

which will provide essential monitoring information to decision-makers and feedback to the public at large. The data collected for these regular reviews would also be used to assess environmental quality and trends. This type of assessment, referred to as a **State of The Environment Report** is to be carried out in The Gambia every five years, and will provide a general overview of environmental conditions, highlighting outstanding issues and provide a framework for guiding environmental management. Periodic formal evaluations will also be carried out. Information collected on a routine basis for monitoring purposes will facilitate efficient and effective valuations. In order to ensure that data provided through routine data collection are accurate, and more importantly, reflective of the opinions and realities of local populations, periodic local level consultations are catered for in the Strategy. The approach being used is characterised by the following principles:

- ◆ Existing data sources are used to the extent possible;
- ◆ Established and accepted data collection techniques will be relied upon to the extent possible;
- ◆ Data are designed to fit into existing reporting structures and procedures; and, the indicators attempt to capture both process as well as physical impacts.
- ◆ Data sources are drawn from all aspects of Gambian society, including government, non-governmental organisations (NGOs), rural communities, and the private sector.

4.12 Equally important to what is contained in the M&E Strategy is how the Strategy is used. The results obtained would contribute to:

- ◆ Routine progress reviews
- ◆ A framework for questioning hypotheses about how to best conduct environmental

management in The Gambia

- ◆ The development of subsequent phases of the GEAP
- ◆ Analysis for the State of the Environment Report
- ◆ Enhanced coordination efforts by identifying key actors and roles and responsibilities for data collection
- ◆ Periodic evaluations.

4.14 The results from the various sectors form the **ANNUAL REPORT** and subsequently the data is put together for the **STATE OF THE ENVIRONMENT**. The major areas which are covered in the data collection design include:

- ◆ Natural Resources Management (including Forestry);
- ◆ Environmental Quality;
- ◆ Institutional Framework;
- ◆ Environmental Legal and Policy Framework;
- ◆ Environmental Planning;
- ◆ Environmental Education and Public awareness; and,
- ◆ Population, human Health and Development.

D. International Partnership Arrangements

4.15 The Federal Republic of Germany has had a long term partnership arrangement with the Gambia particularly in the areas of natural resources management such as natural forestry resource management, soil and water management, population and family planning etc. In this respect, the Government identified the Federal Republic of Germany as the lead country to serve as facilitator for the elaboration of the National Action Plan to Combat Desertification within the institutional framework of the GEAP process.

4.15 For the organization of the first national forum, UNSO through UNDP Office in Banjul provided a substantial amount of financial assistance for the co-funding of this workshop with the Federal Republic of Germany (GTZ).

4.16 UNDP also provided financial support for the financing of the multi-sectoral grass-roots consultations. Forestry Department through NEA benefited from Capacity 21 project in the area of capacity building. The department benefited in the following ways: i) funding made available for community and agro-forestry training in all divisions for a period of three days each, for the department staff and their collaborators(government, NGO and private sector representatives), ii) funding for environment education study tour for farmers to northern parts of Senegal for the realization of the actual effects of decertification and to Guinea Bissau for the realization of undisturbed natural forest types; and, iii) funding of the Focal Points

(for the implementation of the International Convention on Decertification) participation and leadership in the Local Environment Action Planning process which included grass-roots consultations for the planning of implementation strategies of the three conventions (the Conventions on Biodiversity, Climate Change and Decertification Control).

V. FINANCIAL ALLOCATAION IN SUPPORT OF IMPLEMENTATION OF THE CCD

5.1 The major local actors in the sphere of sustainable natural resource management and desertification control are the four technical departments (Departments of agricultural Services- DAS, Livestock Services - DLS, Cooperation - DOC and Planning - DOP) of the Department of State for agriculture; the four technical departments (Departments of Forestry, Fisheries, Wildlife and Parks Management and, Water Resources) of the Department of state for Presidential Affairs, Fisheries and Natural Resources; the National Agricultural Research Institute (NARI); and the National environment Agency (NEA). The main sources of funding available to these agencies for implementing their sustainable development mandates including desertification control are the National Budgets, dedicated sectoral funds and external assistance.

A. National Budgets

5.2 The major technical departments receive direct budgetary allocations from the government through the National Recurrent and Development Budgets for their overall natural resource management activities including the implementation of the CCD since its ratification in 1994. The overall annual budgetary allocation to the agricultural and natural resource sector since 1994 is summarised hereunder in Table 5.1.

Table 5.1 The ANR Budgets

1994/95	Approved	Actual	Total % Var.
Total Dev. Budget	82,769,987	38,038,634	
Total Recurrent Budget	30,330,240	30,408,992	
Total ANR Budget	113,100,227	68,447,626	-39.48%
1995/96			
Total Dev Budget	97,627,508	51,429,329	
Total Recurrent Budget	31,027,000	29,074,238	
Total ANR Budget	128,654,508	80,503,567	-37.43%
1996/97			
Total Dev. Budget	121,012,906	60,688,667	
Total Recurrent Budget	30,072,942	25,353,115	
Total ANR Budget	151,085,848	86,223,782	-42.93%
1997/98			
Total Dev Budget	55,799,368	NA	
Total Recurrent Budget	23,775,990	NA	
Total ANR Budget	79,575,358	NA	NA
1998/99			
Total Dev. Budget	663,892,000	NA	
Total Recurrent Budget	953,842,000	NA	
Total ANR Budget	1,617,734,000	NA	NA

Source: Department of State for Agriculture. (adapted)

5.3 The individual technical departments' allocations are made to their Directors through the Permanent Secretaries of the two Departments of State. The funds are

directly accessed by the Directors for their operations. While these funds are used to the benefits of the local communities, they cannot be directly accessed by them. Similarly the NGO partners cannot access these funds directly.

B. Dedicated Funds

5.4 The established dedicated funds are the Fisheries Development Fund and the National Forestry Fund. There are plans to establish a National Biodiversity Fund, Agricultural Research Fund and Desertification Fund as new forms of funding mechanism. While the Desertification Fund will be entirely available for the implementation of the CCD, the other two proposed funds and the existing ones will be only partly available for CCD related activities for their respective sub-sectors. As at date, the National Forestry Fund which stands at D2.348 million has been accessible for mainly natural forest resource management which is an integral component of CCD implementation measures. Communities which have signed the community forest agreement pay 15% of their proceeds into the National Forestry Fund.

C. External Assistance

5.6 A fair amount of external assistance has been received in support of the implementation of the CCD. This included:

- ◆ Support from the Federal Republic of Germany through GTZ amounting to 96,000 DM equivalent to D620,000;
- ◆ Support from the Secretariat of CCD amounting to FCFA 2,450,500 equivalent to D40,670;
- ◆ Support from the United Nations Sahel Office (UNSO) amounting to US\$50,000; and,
- ◆ Support from UNDP capacity 21 amounting to about D300,000.

5.7. The GTZ and UNSO supports were directly accessed by the Department of Forestry in its capacity as the Focal Point for the CCD to fund activities related to the elaboration of the NAD. Both NARI and NEA have external funding opportunities through their collaborative research programmes with institutions such as IITA and WARDA which can be available for approved desertification-related research activities.

VI. BENCHMARKS AND INDICATORS FOR MEASURING PROGRESS

6.1 As indicated in Chapter IV, Sector C, above the monitoring and evaluation of implementation of the National Action Programme to combat desertification will be carried out within the framework of the GEAP. Thus NAP will be monitored within the established national environmental monitoring and observation capacities of the NEA as indicated in Section C of Chapter IV.

6.2 The NAP specific implementation progress will be assessed through the analysis of the natural resources management monitoring results. Annex 1 summarizes the main desertification-related indicators/baseline data year source, targets and, data source and party responsible for collection with respect to forestry, soil conservation, wildlife management, livestock management, water resources management, energy and, agricultural production and marketing. The indicators are grouped into physical, process and process result indicators.

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**ANNEX 1: MATRIX OF BENCHMARKS AND INDICATORS TO BE
UTILIZED TO MEASURE PROGRESS IN THE IMPLEMENTATION
OF THE NAP**

1. FORESTRY				
	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
1.1 Physical Indicators				
1.1.1	Increasing forest cover (natural forests)	1980 = 43% ; 66 forest parks; 0 comm. Forests 1980; (GEAP) 1996 = % n/a; 66 forest parks; 20 community forests (CF)	Forest reserves cover 30% of total land area; 75% of that amount would be managed forests.	Forest Inventory; Dept of Forestry GGFP CF reports, Dept. Of Forestry
1.1.2	Reduction in bush fires	90 - 96% of the country biomass burned in 1994; Burn Scar Map 1994 N/A	No serious bush fires, especially in forested areas	Monthly reports from forest agents and communities; Dept of Forestry.
1.1.3		N/A	Increase in # of trees / specie per hectare	Monthly reports from DOF nursery tree planting programmes; Dept of Forestry
1.2 Process Indicators				
1.2.1	Increased community forestry management (CFM)	1 Pilot agreement launched 1991; GGFP CFM Rpt About 450ha. of forest under CFM 3 PCFMA signed by 1996. 1 CFM agreement signed.	Area under CFM 200,000 ha in year 2005	Monthly reports; Community Forestry Management Unit at GGFP/DOF
1.2.2	Increased capacity to extend community forestry principles to communities	Agents trained: Non-Prof; Professional; Year; -minimum of 40 no professionals (forestry staff) -Minimum of 60 professional trained (forestry staff and NGOs) -minimum of 15 village multipliers trained in CFM -14 forest extensionists, 2 CFM coordinators -1 forest officer (unit head) -2 experts and 7 EVPs	75% of forestry staff trained	Training Reports; Workshop proceedings; Dept of Forestry

1. FORESTRY				
	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
1.2.3	Increased awareness of communities on improved forestry management techniques (e.g. fire prevention, pruning/thinning, dead wood collection, etc.)	-6 training sessions were held by FD with GGFP assistance -4 field trips organized for CF villages First management plan approved in 1992 for Kasila -3 forest management plans signed.	Majority of the rural population heard about CFM and at least half participate in CFM.	FD, GGFP and CRD FP
1.2.4	Community management structures in place to effectively implement community forestry agreements	-3 management committees formed -3 years -3 community forests management by-laws developed.	-Increase the # signed CFMA	GGFP/CRBFP/URDFP; Forestry Dept.
1.3 Process Result Indicators				
1.3.1	Communities benefit directly from forestry management	Sales of timber and firewood started in Kasila in 1992 No sales of timber and firewood as a result of marketing difficulties. (1996)	Multiple use of forest in terms of: -controlled grazing -collection of major and minor forest products	Community forest management committees
1.3.2	Communities have authority and skills to manage the forest per forestry management agreement	CFMA granted to Kasila forest mgt. committee (1992) 1 CFMA and 3 PCFMA approved (1996)	All of communities have the authority and skill for sustainable forest mgt	Forestry Dept. and collaborating NGOs
1.3.3	Communities follow management plans	60% of management plan activities of Kasila carried out (1992) On average, 70% of management activities implemented in all approved of areas	100% implementation of management plans	Community forest management committees, Forestry Dept. and collaborating NGOs

2. Soil Conservation				
2.1 Physical Indicators				
	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
2.1.1	Reduced soil erosion from upland fields	N/A, 1996	< 15cm	SWMU
2.1.2	Increased soil fertility	0.11%,(1994, Soil test survey of The Gambia)	>2%	SWMU
2.1.3	Declining salinization in rice fields	407 ha, 1992, SWMU	3000 ha year (2003)	SWMU
2.2 Process Indicators				
2.2.1	Implementation of improved soil conservation practices	820m, (1989, SWMU) 11,910m, (1991, SWMU) 0- (1996, SWMU)	81,480m 81,480m Not determined	SWMU
2.2.2	Maintenance of improved soil conservation practices	6km, 1995, SWMU 78 dikes 1995, SWMU -0-, 1995 SWMU 52 dikes, 1996 22/20 meters 0 gully rehabilitation	150km by 2003 Not determined -ditto-	-ditto-
2.2.3	Increased awareness of the effects of soil erosion	63,(1995, SWMU) 3, (1995, SWMU)	200 annual requests	-ditto-
2.2.4	Increased community involvement	132 people, 1994, SWMU [548 - aggregated others], NGOs	1500 annual	SWMU/NGOs
2.2.5	Increased capacity to extend soil conservation techniques	N/A	300 farmers, 75 extension agents (annual)	SWMU
2.2.6	Increased efficiency of interventions, as evidenced by increased crop production	758 kg/ha, 1993, SWMU	> 1800 kg/ha	SWMU

2.3 Process Result Indicators				
	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
2.3.1	Increased community capacity to construct and maintain dikes and bunds	0 - 1996, SWMU	Not determined	SWMU
		0 - 1996	Not determined	
3. Wildlife Management				
3.1 Physical Indicators				
3.1.1	Increased protected areas for wildlife conservation	37,769 hectares/3.6% of land area; <i>SOURCE, YEAR?</i> <i>1996 N/A</i>	Representative samples of all eco-systems 5% of land area	DPWM
3.1.2	Reduced illegal activities within and outside of PAs (felling of trees, unauthorized hunting, cultivation, etc.)	No Data Currently available	Total control and co-operation	DPWM/GPF
3.1.3	Increasing species diversity and abundance	67 species of mammal; 561 species of bird; DPWM; <i>Year?</i> 1996	Stable population re-introduction of species	DPWM GOS
3.1.4	Increased Areas of Scientific Interest (ASIs) assessed outside of Pas	Not established; awaiting legislative review 1996	Legally protected areas of high ecological value outside Pas	DPWM;NEA
3.2 Process Indicators				
3.2.1	Improved management plans for Pas	1 Plan in KWNP 1996	Mgmt Plans for all Pas	DPWM
3.2.2	Effective community participation in PA management	KWNP NNP 1996	PA CMC in all Pas	DPWM

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
3.2.3	Establishment of a workable policy for park management and wildlife conservation	Draft 1994 1996	Viable policy	DPWM
3.2.4	Improved environmental awareness programmes	KWNP 1996	Programmes in place for all Pas	DPWN;CMC
3.3 Process Result Indicators				
3.3.1	Increased benefits from Pas to peripheral communities	N/A 1996	Eco-tourism potential % of park revenue	MFEA; DPWM, CMC/TAC
3.3.2	Increased buffer zone management	N/A 1996		DPWM CMC/TAC
3.3.3	Reduced (illegal activities within and outside of PAS (felling of trees, unauthorized hunting, cultivation, etc)	No data currently available 1996	Total control and co-operation	DPWM/GPF
3.3.4	Reduced conflict between Pas and peripheral farms	N/A 1996	Zero conflicts	DPWM; CMC/TAC
3.3.5 (N)	Reduced # of species under threat	N/A 1996	Viable population of all species	DPWM
4. Livestock Management				
4.1 Physical Indicators				
4.1.1	Herd quality improved	- Avg. Wt. Cows: 213.2 kg - Avg. Wt. Bulls: 227 kg - Avg. Age at first calving: 5 years - Calving interval: 24 mths. -Calving % : 41% (Sept. 1987, ITC-Research Project on product, of Ndama cattle in Senegambia- Third Annual Report pp 29-38)		Dr. Sulayman Sonko Principal Vet. Officer, Head Livestock Information Unit DLS Abuko.
4.1.2	Increased availability of feed and water resources	-Total area under range: 597,500 ha (Biomass productivity: 1.0 ha produces enough for 1 tropical livestock Unit (TLU) or 2,887kg		DLS/Mixed Farming Project Range Resources Inventory.

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
		of feed. (DLS/Mixed Farming Project Range Resources Inventory, 1986) ?# of livestock watering points ?# of and population of migrating herds. Baseline information on other two		
4.1.2		measures not available.		
4.1.3	Improved access to feed and water resources	- # of transhumanant herds ?population of transhumant herds. Baseline on the above not available.		DLS
4.2 Process Indicator				
4.2.1	Increased community participation in range management schemes	-4 (Sept !995) -Kunjatta Rangeland Association - Barjall Rangeland Association - Ballingho Rangeland Association - Alkali kunda Rangeland Association - N/A	N/A	Mr. Omar Njai Senior Range Management Officer, DLS, Abuko
4.2.2	Communities trained in improved range management techniques	N/A N/A N/A	N/A	Mr. Omar Njai Senior Range Management Officer, DLS, Abuko.
4.3 Process Result Indicators				
4.3.1	Nutrition improves with increase in dairy production	?Per capita consumption of fresh milk (in liters/annum: KMC 6, WD 12, NBD 18, LRD 16, CRD 8, URD 11 ?Per capita consumption of sour milk (in liters/annum: KMC 4, WD 2, NBD 6, LRD 5,	N/A	Director, Central Statistics Dept. Banjul.

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
		CRD 6, URD 5		
4.3.2	Increased diversity of livestock	-goat & Sheep population in, 000: -Goat: KMC 1.6, WD 42, LRD 23 , NBD 43.7, CRD 30.6 , CRDN 29.1 URD 43.7 -Sheep: KMC 2.1, WD 12.1, LRD 9.2 , NBD 20.6, CRD 22.05 , CRDN 28.5 URD 28.5 -Poultry & pigs population in 000: - poultry: N/A - pigs: N/A	N/A	Dr. B. Loum, Assistant Director, DLS, Abuko.
5. Water Resources Management				
5.1 Physical Indicators				
5.1.1	Increased ground water resource stock	Kombos 0, 1993 Niumis 0, 1993 Remainder 0, 1993; DWR - 19, 1996, DWR + 49, 1996, DWR + 21, 1996, DWR	CDV = 0	M Njie, DWR
5.1.2	Reduced saline contamination of ground water	Kombos 35, 1993 Niumis -N/A Remainder, 40, 1993; DWR Kombos 89, 1996, DWR Remainder 7, 1996, DWR	EC 1000 uS/cm	M Njie, DWR
5.1.3	Increased fresh water inflows into River Gambia	- max 259, 1994 - min 141, 1994; DWR -max 250, 1995, -min 84, 1995 DWR -max 260, 1996, -min 152, 1996 DWR	Limit held constant at 175 km (during dry season)	M Njie, DWR and P. O. Jarju.
5.2 Process Indicators				

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
5.2.1	Increased knowledge of water conservation technologies	N/A		
5.2.2	Improved well construction	N/A		
5.2.3	Improved knowledge of effective water management regimes	N/A		
5.2.4	Increased access to, and control of water supplies	1626, 1994, DWR 1421, 1996, DWR	All rural settlements by 2003 (~1871)	M Njie, DWR SWMU/DAS
5.2.5	Increases capacity to detect and diagnose water contamination	Technicians 2, 1996, DWR	8, AD 2000	M Njie and P. O. Jarju DWR

	Indicators	Baseline (Date; Year; Source)	Target	Data Source and Responsible Party
5.3 Process Result Indicators				
5.3.1	Increased rice cultivation due to anti salt-intrusion efforts	N/A		
5.3.2	Fewer cases of water contamination	Confirmed cases 25, 1996 DWR External requests for water analysis 7, 1996, DWR Disinfected wells 21, 1996, DWR 25, 1996, DWR 7, 1996, DWR 21, 1996, DWR	Disinfected of all reported cases during any particular year	P.O. Jarju DWR
5.3.3	Reduced incidence of water borne diseases			RVH, P.O. Jarju
5.3.4	Less soil erosion caused by flooding, water run-off			
5.3.5	Reduced physical damage caused by flooding			
6. Energy				
6.1 Physical Indicators				
6.1.1	Energy Consumed	(i) 81.19 (ii) 17.03 (iii) 1.42 (iv) 0.36 (v) 07 1993, DOSITE (i) 86.5 (ii) 11.25 (iii) 1.2 (iv) 0.8 (v) 0.01 1996	Reduce fuelwood consumption	DOSITE BWR DLF M&C GAS SHELL FORESTRY NAWEC GREC

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
6.2 Process Indicators				
6.2.1	Set up awareness campaigns on alternative energy sources	16 Radio shows, 1994, BGP 20 Newspaper articles, 1994, BGP 2000 t-shirts, 2 Newspaper articles	Continue introducing and demonstrating alternative energy devices. Reduced cost price	GREC
6.2.2	Promotion of alternative energy sources	3; 1996; DCD 20; 1991; GREC 8 GREC 1996 250 trained by Y. Kujabi 1996	Extend the # of people trained annually	Suncook Int. NARI/AGU GREC
6.2.3	Increased capacity to produce appropriate technology alternatives	(i) 10, 1993 BGP (ii) N/A (iii) 50, 1993 GREC (i) Nil (ii) 5 GREC, 320 trained by Y. Kujabi (1996) (iii) being surveyed	Increased move on the capacity to construction (i) butane gas (ii) Solar equipments (iii) cookstoves	BGP, DCD, DOSTIE; GREC.
6.2.4	Increased accessibility to alternative forms of energy for the population.	3, 1996 July, GREC 4 BGP 1996 3 GREC 1996 1 GREC 1996	1. Increased number of supplies 2. Build a gas terminal locally for larger volumes of imports for reduced cost in unit price 3. Trained Gambians to produce wind energy technology	V.M Ltd; AG Chambers, GREC
6.3 Process Result Indicators				
6.3.1	Increased utilization of alternative technologies	Study currently being undertaken at GREC	Encourage greater use of alternative technology	V.M. Ltd., Private solar wind, gas companies, BGP; GREC

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
6.3.2	Reduced unit cost of alternative energy sources	(i) D5 - 7,000, 1996 GREC (ii) - (v) being surveyed (vi) D232, 1996 (vii) D359, 1996 (viii) N/A (ix) D10/kg, 1996 BGP and Gamgas	Reduce unit price of these energy sources Create competition within the local market provided supply market price lowers.	V.M. Ltd., BGP; GREC
6.3.3	Improved technology to conserve fuel wood	26% of total of 448 households sampled 180 Mudstoves, AATG 1995 1. 3 kg gas - 15000 6 kg gas = 10000 12 kg gas = 5000	Increase circulation and usage of improved technology	Gas companies, DCS, DCD, GREC
7. Agricultural Production and Marketing				
7.1 Physical Indicators				
7.1.1	Increased crop production	Total production of G/nuts - 145,200 mT; Rice - 26,100 mT; E/millet - 6,800 mT (1974/75) Total production of G/nuts - 75,178mT; Rice - 18,952 mT; E/millet - 43,444 mT (1995/96)	Production by the year 2005 G/nut -126,000mt Rice - 89000mt E/millet-90000mt	DOP/NASS
7.1.2	Increased earnings from cash crops	G/nuts=D35.8m; Fruits&veg=D0.17 m; cotton=D3.53m 1984/85 G/nuts=D12.9m; Fruits&veg.=D2.7m ; Cotton=D0.2m 1992/92	N/A	DOP
7.1.3 (N)	Improved farming techniques	Animal traction used by cropping group (%area) G/nuts - 98% C/grain - 96%	N/A	DOP

	Indicators	Baseline (Data; Year; Source)	Targets	Data Source and Responsible Party
7.1.4 (N)	Reduced post-harvest losses	N/A	N/A	-ditto-
7.1.5	Role of women in agriculture	21% of G/nuts and 94% of rice prod. by women in 1995/6. (Women in Agriculture Study (1993); SDA Report N/A N/A N/A	N/A	DOP(NASS)
7.1.6 (N)	Reduced land pressure	N/A	N/A	-ditto-
7.1.7	Increasing credit availability	1987 = 10-27%; 1993 =19-26% D48.5m in 1985; D39m in 1993 Central Bank	N/A	Central Bank , quarterly/annual bulletin.
7.1.8	Development of Horticultural sector	1. Estimated production/mt; - mangoes 150 - 200,000 - lime 25 - 50,000 - oranges 10 - 20,000 - tomatoes 20 - 40,000 2. N/A 3. N/A 4. N/A 5. N/A	Export potential of 9000/ton/yr. Which would generate foreingn exchange earnings in excess of \$15million	Agric. Sector Review, 1997 DOP, market survey

Source: National Environmental Agency (adapted).