

REPUBLIC OF GHANA

**NATIONAL REPORT TO THE THIRD
SESSION OF THE CONFERENCE OF THE
PARTIES TO THE UNITED NATIONS
CONVENTION**

TO COMBAT DESERTIFICATION

MAY 1999

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**AND ADOPTED AT A NATIONAL VALIDATION WORKSHOP OF
STAKEHOLDERS HELD IN BOLGATANGA ON 17TH MAY, 1999**

1.0 SUMMARY

Ghana is located in south-central Western Africa, south of the Sahara and north of the Equator on the Gulf of Guinea. It is bounded on the north and north-west by Burkina Faso, on the west by Côte d'Ivoire, and on the east by Togo, and on the South by the Atlantic Ocean.

With an area of 238,537 square kilometres the country presently has a population of about 18 million, of which about 20-50% live in the relatively dry areas which are subject to moderate to high levels of desertification. These dry areas are found mostly in the Northern and Upper Regions and also in the coastal savanna. Overall, approximately 30-40% of the total land area of Ghana is subject to desertification.

It must also be pointed out that with the current trend in forest destruction in the forest belt through farming, logging, mining, charcoal burning and firewood fetching, the area could face the wrath of desertification if remedial measures are not put in place. In the savanna zone (covering about 15.6 million hectares), as much as 14.7 million hectares are unreserved and are being destroyed at an estimated rate of 20,000 hectares per annum.

Such is the scenario of land degradation in Ghana that has made the desertification threat to assume national proportions. Indeed, although development and environment issues are inextricably linked, the quest for economic growth has, for a long time, over-shadowed environmental concerns. Consequently, the process of development has often left in its trail, deterioration of productive lands, deforestation, desertification, air and water pollution.

The need to redirect Ghana's development efforts into the sustainable development process and sound environmental management was recognised early in 1973 with the creation of the Environmental Protection Council (which was transformed into an Environmental Protection Agency in 1994) to focus on the integration between development and the environment.

This process was given an added impetus in 1988 when the Government of Ghana initiated a major effort to put the essence of the intricate relationship between the environment and development on the priority agenda through the preparation of an Environmental Action Plan for Ghana which was adopted in 1991.

Changes at the international level towards promoting sound development and environmental sustainability have also been significant in propelling national efforts. As a follow-up to the United Nations Conference on the Human Environment (Stockholm, 1972), the United Nations Conference on Environment and Development (UNCED) was organised in 1992 to produce, among other things, an Earth Charter embodying basic principles regarding general behaviour towards the environment for bringing about sustainable development and an Agenda for Action for dealing with major issues in the socio-economic development process – "Agenda 21".

One of the major offshoots of the Earth Summit (UNCED) was not only the bring into being of the Convention on Climate Change and Biological Diversity, but also the

setting of the stage for the negotiation of an International Convention to Combat Desertification, which was adopted in June, 1994, and finally came into force in December, 1996.

2.0 STRATEGIES AND PRIORITIES ESTABLISHED WITHIN THE FRAMEWORK OF SUSTAINABLE DEVELOPMENT PLANS AND/OR POLICIES

2.1 Background

Ghana is endowed with a variety of natural resources which have been employed in the country's developmental efforts over the decades. The resources have provided the life-support system for the nation's people.

However, although development and environmental issues are inextricably linked, the quest for economic growth through the exploitation of natural resources seems to have overshadowed environmental concerns for a long time. Consequently, the process of development has left in its trail, a chain of environmental problems including the deterioration of productive lands, deforestation, desertification and the pollution of water and air.

The key elements of Ghana's response to the environment and development issues include:

- initiation of principles, policy guidelines, key goals and priorities of development in relation to environmental sustainability.
- development and implementation of specific approaches to address the problems of the integration of population development and the environment;
- creation of institutions with specific responsibilities for leading the crusade in addressing environmental issues;
- initiation of programmes and projects for bringing about sustainable development.

2.2 National Environmental Policy

Attempts in the past to address environmental problems in Ghana were largely ad-hoc and/or sector-specific and therefore, limited in scope. With time, it became evident that the body of existing legislation on the various aspects of the environment was inadequate and un-implemented; and many provisions had little or no bearing with realities on the ground nor with the aspirations of the people in the country. The need therefore arose for a new direction and thrust in a national development efforts to ensure that plans aimed at improving the standard and quality of life took due cognizance of environmental considerations.

Objectives: The ultimate aim of the National Environmental Policy of Ghana is to improve the surroundings, living conditions and the quality of life of the entire citizenry, both present and future. It seeks to ensure reconciliation between economic development and natural resource conservation, to make a high quality environment a key element supporting the country's economic and social development.

The success of all efforts to achieve sustainable development and also to combat desertification and drought depend primarily on a strong and continues political commitment by governments in support of them and the active participation of the people. In Ghana this political commitment and local participation have been shown to be stronger.

This is manifested in:

- a) the establishment of a Ministry of Environment, Science and Technology with cabinet status immediately after Rio to be responsible for environmental protection and management and the promotion of science and technology;
- b) the passing of the National Development Planning Commission Act 1994 (Act 479) which established the National Development Planning Commission to be responsible for socio-economic development initiatives;
- c) the passing of the National Development Planning Systems Act 1994, (Act 480);
- d) the passing of the Local Government Act 1993 (Act 462) which empowers the District Assemblies as the local planning authorities;
- e) the enactment of the District Assemblies Common Fund Act 1993 (Act 455) which provides the necessary funds for the development of localities; and
- f) the decentralization of administrative planning and executive functions to the local level as against centralization of critical activities.

Ghana's national sustainable development agenda has been influenced and informed by a number of consultations and workshops which were organised at various levels and involved all relevant stakeholders. These provided the platforms for the adoption of the various programmes that constitute our national sustainable development agenda.

2.3 The National Environmental Action Plan

The environmental aspect of Ghana's sustainable development agenda is found in the National Environmental Action Plan (NEAP) whose preparation was started in 1988 and adopted in 1991 by government and is currently in the implementation stage.

The National Environmental Action Plan has an implementation strategy which is found in the Ghana environmental Resource Management Project (GERMP).

GERMP is a major programme of institutional strengthening of the Environmental Protection Agency (EPA) and other relevant government and non-governmental organisations such as the Survey Department, the Ghana Wildlife Department, the Lands Commission Secretariat, the Crops Services Department of the Ministry of Food and Agriculture and the Green Forum with EPA as the coordinating agency. GERMP was designed to support the implementation of NEAP. Through GERMP, an Environmental Resource Management System as well as an Environmental Information System have been put in place.

The Socio-economic development aspects of the national sustainable development agenda can be found in the National Development Policy Framework (NDPF) which has been described as Vision 2020.

The NDPF is designed to facilitate the creation of an open and liberal market economy, founded on competition, initiative and creativity, that employs science and technology in deriving maximum productivity from the use of all our human and natural resources and in optimising the rate of economic and social development, with due regard to the protection of the environment and to equity in the distribution of the benefits of development (Ghana Vision 2020: The First Step: 1996-2000 page 1).

Other programmes or activities that constitute the national sustainable development agenda include:

2.4 National Poverty Reduction Programme

National Poverty Reduction Programme aims at enhancing the income-generation capabilities for rural communities, increased technological application in rural areas, increased community participation in development decision making and greater opportunities for women to participate in economic activities at the district level.

The National Poverty Reduction Programme is designed to lead to generating business and entrepreneurship among the rural community and facilitate the transformation of the rural economy by empowering the rural community.

2.5 Ghana Medium Term Agricultural Development Programme (MTADP); An Agenda for Sustainable Agricultural Growth and Development

In Ghana, Agriculture is a key priority sector in the economy, which attracts priority attention in the Government's development efforts. The sector constitutes the major source of income for about 60% of the population as well as contributing over 40% of the total GDP accordingly.

The MTADP seeks to Provide Ghanaians with food security through adequate and nutritionally balanced diets at affordable prices. The programme also aims at creating rural employment opportunities and also promoting balanced regional development through the promotion of regional agricultural growth based on comparative advantage and resource endowment (Ghana Medium Term Agricultural Development Programme, 1990).

2.6 National Livestock Development Programme

An important agricultural policy of significance to desertification is the National Livestock Development Programme. This programme seeks to:

- i. Improve cattle stock through multiplication and distribution of trypano-tolerant breed of cattle.
- ii. Control animal diseases by expanding the production and distribution of vaccines to protect cattle and poultry from the most common diseases.
- iii. Improve access to veterinary services
- iv. Promote the harvesting and processing of nutritious crop residues for animal feed during the dry season.
- v. Encourage crop farmers to engage in mixed farming (livestock and crops) and to convert gradually from shifting cultivation to release the less fertile areas of crop land for animal grazing.

2.7 National Population Policy

Ghana also has a National Population Policy, which has the objective of strengthening and enhancing services, which promote and support improved fertility management to reduce the growth of the population.

2.8 Natural Resources Management Programme

The objectives of this programme are to protect, rehabilitate and sustainably manage national land, forest and wildlife resources and to sustainably increase the income of rural communities who own the resources. The programme has been designed with five components which are:

- i) High Forest Resource Management;
- ii) Savananna Resource Management;
- iii) Wildlife Resource Management;
- iv) Environmental Management Coordination
- v) Biodiversity conservation.

This programme is also designed to continue the support for the implementation of the National Environment Action Plan which started under GERMP.

2.9 Capacity Building Development and Utilisation Programme

the programme embodies capacity building for development, management and use of science and technology in addressing developmental problems at all levels of government.

The capacities of women will be improved to increase their proportions involved in decision-making at the District and community levels in the design, development and implementation of policies and programmes for sustainable development.

2.10 Decentralization Programme

commitments by Government in the promotion of sustainable development in the country are seen in the various actions taken in transferring major development planning initiatives and responsibilities to the District Assemblies and the establishment of a District Assembly Common fund to provide District Assemblies with resources for development activities from the national coffers.

3.0 INSTITUTIONAL MEASURES TAKEN TO IMPLEMENT THE CONVENTION

The National Environmental Action Plan (NEAP), the National Development Policy Framework (NDPF) – Vision 2020, the national Poverty Reduction Programme, the national Electrification Programme, the Natural Resources Management Programme (NRMP), the National Population Policy and the Government's Decentralization Policy among others have linkages with the national efforts towards combating desertification and drought.

Activities aimed at combating desertification and drought have found expressions in all the programmes mentioned above.

The National Electrification Programme and the aimed at providing energy to all the District Assemblies and other communities so as to take off the pressure on trees and the forests as energy sources.

A national livestock management programme is also being implemented and it is aimed at managing grazing lands among others for the livestock industry so as to reduce the negative impacts of livestock's on land and the environment.

The Natural Resource Management Programme has a savanna resource management component which involves various disciplines – forestry, agriculture, land management and conservation. It also addresses poverty reduction and the combating of desertification.

Having actively participated in almost all the Intergovernmental Negotiating Committee on the Convention to Combat Desertification (INCD) sessions, Ghana was among the first group of countries to sign the International Convention to Combat Desertification at the signing ceremony held in Paris in the middle of October, 1994.

In July, 1996, the Parliament of the Republic of Ghana, acting in accordance with Article 75 (b) of the Constitution of Ghana, agreed and resolved that Ghana should ratify the Convention. In December, 1996, the President of the Republic of Ghana appended his signature and seal to the Instrument of ratification which was subsequently deposited at the United Nations Headquarters.

Following Ghana's ratification of the convention, and prior to its entry into force, a number of relevant measures have been and are being taken in the country in pursuance of the policies and priorities already established.

3.1 National Advisory Committee for the Implementation of Agenda 21 (NACIA 21)

in response to the requirements for the global implementation of Agenda 21, NACIA 21 was established with membership from all identifiable stakeholders and partners to help build the national capacity to implement the programmes contained in Agenda 21.

Institutional strengthening and human resource development at the district, regional and national levels is the utmost concern of NACIA 21.

In addition to the above, NACIA 21 is the Management Committee of the Capacity 21 Programme. NACIA 21 has the responsibility of monitoring the Progress of the programme at all levels through reports and field visits, evaluating these internally on a periodic basis and arranging external evaluations conducted by independent consultants.

3.2 National Committee On Desertification And Desertification Control Unit

At the national level, a National Committee on Desertification has been established. Membership of the Committee includes representatives from the Ministry of environment, Science and Technology, the Environmental Protection Agency, Research Institutions, Universities, relevant Government Departments, other Ministries and Government agencies, the Private Sector, NGOs, Women Groups and the National House of Chiefs.

The Committee is a policy organ whose policies will be implemented by the Desertification Control Unit of the environmental Protection Agency and all governmental institutions as well as non-governmental institutions whose mandates relate to making efforts to combat desertification. The Unit serves as the implementing body for desertification control programmes in Ghana. The Unit has a Field Operational office located in Bolgatanga in the Upper East Region.

3.2.1 National Desertification Fund

A National Desertification Fund is to be established to provide financial resources for desertification control activities particularly at the community levels.

3.3 Regional Inter-sectoral Networks

At the regional level the EPA has set up Regional Inter-sectoral Network (RISN) made up of between 12-17 members from Government Departments and NGOs.

These Regional networks are more or less technical in nature and multi-disciplinary in composition. They take care of three main issues: natural resource, built environment and environmental education.

As inter-disciplinary groups, they deal with cross-sectoral environmental issues tapping expertise from relevant technical personnel within the committee. Each committee serves as an advisory body to the Regional Coordinating Council (RCC) on matters of land degradation and reclamation and other environmental problems.

3.4 District and Community Environmental Management Committees (DEMCs and CECs)

The DEMCs have been established within the district Assemblies to advise the Assembly on local environmental problems and help find solutions to these problems. The DEMCs which are made up of Assembly members, relevant decentralized department and NGO representatives, assist to formulate policies and programmes including the enactment of local bye laws to protect the environment. The DEMCs are also empowered to form Community Environmental committees (CECs) at the community level to take local action on say, land degradation and rehabilitation activities, for bush fire control and desertification.

In the first half of 1996, most of the District Assemblies in the dry Regions of Ghana, in drawing up their medium-term Development Plans, included some desertification control activities/proposals alongside other proposals.

3.5 Legislations

A review of the existing national legislations and policies within the context of environmental management has been made. The legislations and policies regulate and protect the environment from degradation.

As a result of the review of existing legislations especially those of relevance to combating desertification, the local populations have now been given greater responsibility in the management of our land resources.

Under the Timber Resources Management Act 1997 (Act 547) of Ghana, no timber rights shall be granted in respect of land with forest plantations or timber grown or owned by any individual group or subject to alienation holding or lands with farms without the authorisation in writing of the individual, group or owner concerned. This is a departure from the previous situation where the local population did not have this power.

Government has also encouraged the formation of Community Forestry Management Committees to actively participate in the management of the country's forest resources.

Under Act 547 a timber utilization contract has been advocated under which the holder of a concession is by law required to execute a reforestation plan among others during the period of the contract to the satisfaction of the Chief Conservator of Forest (CCF).

Act 547, to all intents and purposes provides, for the grant of timber rights in a manner that secures the sustainable management and utilization of the timber resources of Ghana.

There are also in place laws and regulations on forestry and plants and these include the Forestry Commission Act 1993 (Act 453) which gives the Forestry Commission of Ghana the responsibility for regulation and management of the utilization of forest and wildlife resources of the country.

The Forest Ordinance (Cap 157) aims at the Conservation of Forest and also provides for the control of forest fire.

Named economic plants are protected under the Economic Plants Protection Decree 1979 (AFRCD 47). Section 1 of this law makes it an offence for any person who without the written authority of the Sector Minister of Agriculture, or who for purposes other than horticultural husbandry, intentionally destroys or causes the destruction of any specified plant.

The control and prevention of bush fire law, 1990 (PNDCL 229) also provides for the establishment of fire volunteer squads in every town, area or unit of the country to help in bush fire prevention and control activities. This law provides for the involvement of the whole community in the realization of the objectives of the law.

Ghana has also passed legislation to regulate various aspects of fauna. We have in place the Wild Animals Preservation act 1961 (Act 43) which was amended by PNDCL 55 in 1983 to control the export of wild animals. Many other regulations exist to protect and preserve wildlife. These include Wildlife Reserves (Amendment) Regulations, 1975 (L11022) and the Wildlife Conservation (Amendment) Regulations 1988.

The Constitution of Ghana, "The 1992 Constitution" contains important provisions on the environment. Under the Directive Principles of State Policy, Article 36 (a) enjoins the state to "take appropriate measures needed to protect and safeguard the national environment for posterity and seek cooperation with other states and bodies for purposes of protecting the wider international environment for mankind.

Responsibility for the conservation and sustenance of the environment extends beyond the state to all citizens. Article 41 (k) of the Constitution states that "it is the duty of every citizen to protect and safeguard the environment".

There is also in place the Land Planning and Soil Conservation Ordinance No. 32 of 1953, amended in 1957, which contains a number of provisions to control and abate land degradation and manage soil conservation. Currently, there is a draft land policy under discussion, which seeks to address land management issues.

A compliance and enforcement network has been established to enforce and seek compliance to environmental laws and regulations in the country.

Awareness has been created on the existence of environmental laws and regulations through the radio, television, seminars, workshops and conferences. Participatory Process in Support of the Preparation and Implementation of the Action Programme.

4.0 PARTICIPATORY PROCESS IN SUPPORT OF THE PREPARATION AND IMPLEMENTATION OF THE ACTION PROGRAMME

Ghana has started taking steps for preparing her national action programme to combat desertification. UNDP/UNSO has agreed to assist Ghana in the preparation of the action programme and has made some seed money available to start the process.

In line with the Ghana Government's policy of decentralization and community involvement in the design, preparation and implementation of projects as well as the methodology agreed upon at the sub-regional level for drafting National action programme the following will be pursued:

- All stakeholders would be identified and involved in the preparation of the national action programme. Some of these stakeholders include local authorities, community-based organisation, non governmental organisations, traditional authorities, private sector, academic institutions, women groups and youth;
- Setting up a national task force which will be multi-disciplinary, intersectorial and representative of all the operational actors to help in the preparation of the national action plan;
- Information awareness creation about the convention will be continued and all the actors and stakeholders nationwide would be involved; Effective participation and consultation would be enhanced during the process
- Reviewing the National Plan of Action to combat Desertification which was developed in 1987 through consultation and workshop at the district and regional levels taken into consideration the provision of the UNCCD;
- Drafting of the national action programme to combat desertification;
- Organising a national forum involving all the stakeholders including bilateral and multilateral donors to discuss the draft national action programme;
- Adoption of the NAP;
- Mobilization of funds for NAP implementation;
- Commitment to and implementation process would start involving all relevant stakeholders.

5.0 CONSULTATIVE AND PARTNERSHIP ARRANGEMENTS

with respect to partnership arrangements with developed country parties and other interested entities, it has to be stated that no firm agreements or arrangements have been established. However, the formation of the National Committee on Desertification, the organisation of the National Awareness Seminar and other public awareness and education programmes have served to bring some stakeholders together to begin reflecting on possible partnership arrangements at the local, national and international levels. Preliminary discussions are going on between Ghana and some bilateral and multilateral donors and agencies, with the view to establishing firm partnership arrangements to support enabling activities towards the preparation and implementation of a National Action Programme for desertification control.

Ghana has actively participated in Sub-Regional and Regional programmes organised by CILSS and ECOWAS, supported by the CCD Secretariat. UNDP/UNSO also organised a number of fora on desertification, which Ghana participated. All these fora and programmes have provided opportunities for enhancing consultations and partnerships between Ghana and prospective partners.

Ghana's approach to fulfilling these initial partnership arrangements is outlined in the following steps:

- i) Country-wide sensitization and education on the threat of desertification and the Convention to Combat Desertification. Following the National Awareness seminar to Combat Desertification, the next logical step will be to send the awareness and sensitization process to the doorsteps of all affected regions, districts and localities in the country. This would require, inter alia, that awareness and sensitisation days and programmes are organised in as many localities as possible;
- ii) More consistent organisation of a national consultative process with prospective bilateral and multilateral donors and also among local stakeholders;
- iii) Analysis of factors contributing to desertification, constraints and resources available as against what is required;
- iv) Development of practical measures, making full use of past experiences and relevant on-going efforts. This will involve, inter alia, a review of the National Plan of Action to Combat Desertification which was developed in 1987;
- v) Consolidation of the above steps into a National Action Programme;
- vi) Organisation of a national forum on the National Action Programme;
- vii) Review and up-dating of the National Action Programme in the light of the outcome of the national forum.

Ghana is being assisted by UNDP/UNSO to develop her national action programme for desertification control.

Granted that the right type of support is received, this process is expected to last between twelve and fourteen months.

6.0 MEASURES TAKEN OR PLANNED TO: IMPROVE THE ECONOMIC ENVIRONMENT, INSTITUTIONAL ORGANISATION, AND KNOWLEDGE OF DESERTIFICATION; CONSERVE NATURAL RESOURCES AND MONITOR AND ASSESS THE EFFECTS OF DROUGHT

6.1 Natural Resource Conservation

Whilst exploring ways of building partnerships and of intensifying the consultative process, it is worth mentioning that a number of programmes, projects and activities have been and are being carried out in various places in Ghana that seek to conserve natural resources and improve knowledge of desertification. Some of these projects and programmes are outlined below.

6.1.1 The Ghana Environmental Resource Management Project (GERMP)

The GERMP was designed to implement and operationalise the National Environmental Action Plan (EAP). The project was launched in June, 1993 and has the following features:

Project Rationale

The project is based on:-

- i) the inter-sectoral nature of many environmental concerns;
- ii) the fact that many areas of Government are being decentralised to District Assemblies;
- iii) the need to ensure that communities are involved in decisions about the use of environmental resources; and
- iv) the fact that significant portions of the EAP are to be implemented through planned or on-going sector-specific projects supported by the international community.

Project Objectives

The main objectives of the project are:-

- i) to put in place the institutional and technical capabilities required for effective environmental monitoring, policy formulation and coordination;
- ii) to support a pilot programme to combat soil degradation and erosion; and
- iii) to help prevent further destruction of the fragile resources in the coastal zone of Ghana.

Project Components

In line with the objectives above, the project has three main components:-

- i) Development of an Environmental Resource Management System;
- ii) Land and Water Management;
- iii) Coastal Wetlands Management.

Project Implementation

Four Ministries are involved in the implementation of the project. These are the Ministries of Environment, Science and Technology, Lands and Forestry, Food and Agriculture, and Roads and Transport. The Environmental Protection Agency acts in a coordinating and advisory capacity in relation to project activities carried out by the various Departments.

The network of organisations and Departments that are implementing the project activities are the Survey, Wildlife, Meteorological Services, Crops Services and Agricultural Engineering Services Departments; the Lands Commission Secretariat; the Soil, Crops and Water Research Institutes of the Council for Scientific and Industrial Research (CSIR); the Land Administration Research Centre (LARC) of the University of Science and Technology; and the Department of Geography and Resource Development of the University of Ghana.

Development of an Environmental Resource Management System

This component of the project deals with institutional support to EPA, human resource development, environmental education and the development of an environmental information system.

The environmental information system development involves the collection of information to monitor environmental quality against agreed threshold levels; the collection, interpretation and presentation of topographic, present land-use, land ownership and land suitability and meteorological information. The information is being geo-referenced to ensure compatibility and optimum utility.

Under this component capacity has been developed in the application of Geographic Information System (GIS) and related technologies in four key institutions in Ghana. These are the Remote Sensing Applications Unit of the University of Ghana (a direct output of GERMP), Land Commission, Survey Department, and Soil Research Institute.

Capacity for data management at the Meteorological Services Department has also been enhanced.

The Survey Department through the enhancement and building of its capacity has been able to produce the following among others:

- Conversion of existing 1:500,000 scale series of map sheets covering the whole country into a digital base; and
- Derivation of a 1:250,000 scale data set;

The digital topographic base provides a basic spatial framework.

The Remote Sensing Application Unit (RSAU) which was established under the project to produce digital and paper copy maps of current land use for the whole country has developed a land use data base.

The RSAU holds satellite (Land sat) data covering the entire land area of Ghana and has developed the capability to offer a range of client – oriented services. Land use bulletins will be prepared on the basis of the administrative regions of Ghana.

The Soil Research Institute was strengthened and it has been able to produce a digital coverage of the soil types of Ghana. A database of agronomic suitability indices for selected crops has been derived at the scale of 1:250,000. Land Suitability maps have been produced at a scale equivalent to 1:1,000,000 for 10 major land utilisation types. Agronomic Suitability bulletins are being prepared for all the administrative regions of Ghana.

A computerised database of climatological records for the period since 1930 has been produced by the Meteorological Services Department. Climatic variables contained in the database include rainfall, temperature, relative humidity and evapo-transpiration. To render the data sets compatible for integration with other geo-spatial data, “climate surfaces” have been generated for these variables using appropriate interpolation routines.

These achievements have been possible as a result of Government’s policy to provide relevant data and information for natural resources management as well as the policy of strengthening and building capacities for both institutional and human resource development.

Development of Community based land and water conservation measures

The land and water management component seeks to promote the sustenance of rural livelihoods through the prevention of land degradation in agricultural communities, to be achieved by the introduction of land and water conservation practices to a selected number of pilot areas.

This is a pilot scheme, and will run concurrently with a programme to improve land management on tractor cultivated lands on both large and small farms.

6.1.2 The Cooperative Integrated Project on Savanna Ecosystems in Ghana (CIPSEG)

Another very important and relevant project for which the Environmental Protection Agency has been responsible is the Cooperative Integrated project on Savanna Ecosystems in Ghana (CIPSEG). This project recognises that despite the numerous stresses impacting on the Northern Ghana Guinea Savanna (NGGS) landscape, religious beliefs and traditional values have preserved relics of the natural climax vegetation which the indigenous communities protect for sacred reasons.

The premise of this project is that as such relics have been preserved by traditional and religious bonds, the richness of the biotic diversity of the sacred groves needs to be properly understood with a view to restoring the degraded surrounding ecosystems by plant communities growing in the fetish groves which are well adapted to the climate and pedagological conditions of the new environment.

Project Interventions

A series of interdisciplinary studies were carried out which showed, inter alia, that the sacred groves were more luxuriant and had greater biodiversity than the degraded areas. To satisfy the basic philosophy of the project conceptual framework, seeds and other propagules from indigenous plants growing in the groves were nursed and used alongside other plants for enrichment planting of the buffer zones of the groves.

In situ conservation or natural regeneration of indigenous plant species has also been encouraged through the containment of bush fires, and restricted harvesting of wood for fuelwood and poles by the people themselves.

For planting in degraded areas, the micro-catchment technique was introduced. This technique resulted in about 80% survival of seedlings planted.

In all, over 360 acres of agroforestry, multipurpose woodlots and fodder banks have been established by farm families and community groups and individuals.

A significant strategy of CIPSEG has been that as a natural resource, land is seen to be owned by somebody. As such, no environmental conservation or sustainable land use effort can succeed if the resource owner is not properly and carefully identified, targeted and integrated into such efforts. Furthermore, it has been found necessary to harness the traditional knowledge of, say, the medicine men who are seen as the traditional custodians of savanna flora.

Information Sharing, Education and Training as a Tool for Successful Project Implementation

Through the creation of awareness of the problems of land degradation, sensitisation of the people about the need to conserve biological diversity and above all, education for the people to acquire the necessary knowledge and skills for the management of their degraded areas, or changing their attitudes to appreciate the environmental problems and become actively involved in their solution, the project was able to chalk remarkable success.

The channels of communication used in reaching out to the target audiences have been group training activities on themes and topical issues, workshops/seminars, meetings, mass education through radio programmes in the local language, video documentaries, film shows and village level focus group discussions, durbars, etc.

6.1.3 Environmental Restoration Unit of the Irrigation Company of Upper Region (ICOUR)

The largest irrigation schemes in Ghana are located in the Upper East Region which is the most degraded part of the country. These schemes are managed by the Irrigation Company of Upper Region (ICOUR), which also runs an environmental restoration programme alongside. The programme started in 1988 against the background that even though tree cover in the irrigation areas (Vea and Tono) is less than 30% of the total land area, there is overexploitation of trees and other vegetal resources, while natural regeneration does not act fast enough to restore the ecological balance.

Non irrigable lands lie bare and continued to be degraded through sheet and gully erosion, leading to fast sedimentation and siltation of the Vea and Tono reservoirs.

With this background, it was justifiable to institute soil and water conservation measures in the irrigation areas to reduce or possibly halt the degradation of the environment while providing the communities with much needed firewood, poles, fruits and fodder.

The programme has been running all these years targetted at erosion control on non-irrigable areas, lake shore protection to reduce the rate of siltation and sedimentation and encouragement and assistance to small holders to establish their own woodlots, practise agroforestry and amenity planting.

6.1.4 Rural Pilot Project in Food and Energy Self-Sufficiency

The environmental restoration project of ICOUR started at about the same time as a Rural Pilot Project in Food and Energy Self-Sufficiency in four representative villages of Ghana (popularly called the Villages Pilot Project – VPP). The EPA coordinated the project, with collaborators like the Forestry Department, the Department of Rural Housing, the Irrigation Development Authority, the Department of Community Development, the Ministries of Health and Food and Agriculture actively working with the District Assemblies and the communities in the project activities.

The project was fashioned out to address the major concerns of the African Ministerial Conference on the Environment (AMCEN). Of the four pilot villages, the project activities carried out in three of them (representing the coastal savanna, the semi-arid and the transitional ecological zones of Ghana) appeared critical for desertification control.

Such activities as vegetal cover protection and improvement through the establishment of tree nurseries and growing of trees, water resources development and pasture development and improvement, were quite germane. Even though the goal of “food and energy self-sufficiency” turned out to be too ambitious to attain, the project chalked significant achievements and stood out as one of the success stories on the continent by helping the communities to adopt positive attitude towards the environment.

6.1.5 The Natural Resources Management Programme (NRMP)

The overall goal of the natural Resource Management programme (NRMP) is to protect, rehabilitate and sustainably manage Ghana’s land, forest and wild life resources and to sustainably increase income for the rural communities who own the resources.

The NRMP comprises five components as follows:-

- i) High forest resource management;
- ii) Savanna resource management;
- iii) Wild life resource management;
- iv) Biodiversity conservation;
- v) Environmental management co-ordination.

The high forest management component seeks to address: a) policy and legislative reform, b) sector institution reform, c) integrated forest reserve management, d) forest resource management off-reserves, e) Plantation development, and f) wood industry development.

The wild life resource management component will address: -

- a) Wild life Department capacity for resource management,
- b) Implementation of plants for selected protected areas,
- c) Private sector capacity development, in, say, ecotourism and game ranching,
- d) Public education in wild life conservation

The biodiversity conservation component seeks to address: a) the biological conservation and management capacity of the Ghana Forestry Department, b) protection of special areas inside forest reserves, c) activity to generate revenue from non-logging operations, eg., ecotourism, and (d) protection of non-timber forest products (NTFPs).

The environmental management co-ordination component will address: a) the Environmental Protection Agency’s five-year strategic plan b) support to the District

Environmental Management Committee (DEMCs) to prepare environmental action plan for their district.

The savanna resource management component has its focus in the three regions of Northern Ghana and aims at: a) rehabilitation of degraded natural resources and ensuring their sustainable management b) poverty alleviation. The component also focuses on savanna woodlands management by initiating pilot projects to develop the needed capacity and the most effective measure to achieve the desired rehabilitation and management programmes. The savanna component of NRMP focuses further on organizing and planning with interested local communities or stake holders in the non-reserve areas on integrated catchment management and conservation programmes towards sustainable use of land and water resources.

6.1.6 Community Savanna Rehabilitation Project (CSR)

The Environmental Protection Agency has also been collaborating with local Chiefs and community-based associations in implementing a Community Savanna Rehabilitation Project (CSR) in the Jirapa Traditional Area of the Jirapa/Lambusie District of the Upper West Region.

The long-term objective of this project is to promote a sustained improvement in the economic well-being of rural savanna communities. The specific purpose is the sustainable development and management of savanna zones natural resources through community development led by local initiative and self-help activities in rural and small town communities.

The main thrust of this project is that the benefits from these interventions would be sufficiently valuable to encourage sustained and continued maintenance of environment.

6.1.7 Forestry Department (FD)

the Forestry Department of the Ministry of Lands and Forestry has, over the years, reserved and set up a system of forest reserve which have much relevance for desertification control. Besides a few cases of encroachment for mining and farming, these forest reserves have been successfully protected. In the dry savanna areas they have proved quite crucial for environmental protection with regard to soil, water and wildlife conservation.

Wood still constitutes the primary energy source for over 70% of the Ghanaian population and the forest reserves are the main wood energy banks in addition to their important roles in the provision of food, fodder, construction material and a number of other basic products and services.

Reserved Areas

The development and ecological management of the forest reserves are of extreme importance. The operational thrust of the Forestry Department is therefore centred on their protection from annual bush fires, farming and mining activities. This is intended to help natural regeneration and to improve tree cover.

Bush fire and drought are the most degrading environmental factors constraining forest management. Their effects are particularly felt in the transition zone and the savanna areas.

Where the forest reserves have become poorly stocked because of incessant annual bush fires, over grazing and other negative environmental factors, such reserves have been rehabilitated through programmes of reforestation. This programme was particularly active in the Northern and Coastal savannas in the early 1970s.

Because of the great bias for wood production, exotic species dominated the list of plantation species selected for the afforestation and reforestation programmes across the country.

Such species included *Tectona grandis*, *Gmelina arborea*, *Senna siamea*, *Azadirachta indica*, *Eucalyptus* spp. And so on.

Among the few indigenous species tried *Anogeissus leocarpus* and *Khaya senegalensis* are the most prominent.

Unreserved Areas on Community and Village Lands

Since the inception of the national tree planting programme in 1982 by Government, many communities in the wood deficient areas have been collaborating with the Forestry Department and other Government and Non-Governmental Organizations for the supply of free seedlings for planting on their own lands.

The main objectives for planting have been to meet community and individual needs for: fuelwood, construction wood, fodder, food and ecological functions of trees such as the enhancement of local micro-climate, farm fertility (agroforestry systems) erosion control, catchment management and the provision of shade and amenity.

The forestry Department has provided leadership in the national tree planting programme through public education, technical advice and supply of free seeds and seedlings to members of the public, institutions and individuals desirous of any kind of tree seedlings for planting.

Many communities now own nurseries and receive regular advice and support in the form of nursery tools from the department.

Institutional Transformation of the Forestry Department

The basic strategy of this programme is the promotion of popular participation in the planning evaluation, implementation and co-ordination of the diverse activities involved in natural resources management. The programme approach is multi-sectoral. The agencies involved at the Regional and District levels include: the Forestry Department, Crop Production Department, Extension Services Department, Animal Production Department, Energy Division of the Ministry of Mines and Energy and the District Assemblies.

The District Assemblies would play the lead role in galvanizing the skills, resources, expertise and knowledge of the different partners to improve natural resources management within the different spheres of land use activities.

At the national level the Programme Co-ordinating Committee has membership from the Ministries of Land and Forestry, Mines and Energy, Local Government and Rural Development, Food and Agriculture, Environment, Science and Technology as well as representatives of Non-Governmental Organisations, bilateral Donors and the Universities and Research Institutions.

Under the programme, solutions would be sought principally by participatory approaches to the better management of the natural resource base and existing resources to address wood energy, soil and water conservation issues.

Since natural resource management is crucial for the economy of the savanna areas, improved supplies through better stewardship and husbandry practices would play a major role in poverty alleviation, which is an important objective of the programme.

Collaborative Forest Management Unit

The Unit which has been on the ground for the past four (4) years has been instrumental in raising public awareness on forest management issues and advising on forest legislation to make farmers who nurture trees share in the benefits accruing from such ventures. Mechanisms for partnerships with forest dwelling communities for management of their forests both on and off-reserve and the equitable sharing of the benefits to be derived from the sound management of such resources are also being worked out in pilot areas for adoption when successful.

Forest Policy, Legislation and Instrument

The 1994 Forest and Wildlife Policy together with the Timber Resources Management Act, (Act 547) and the Timber Resources Management Regulations (1998) provide the basis for sustainable forest and wildlife management and regulation of timber harvesting inside and outside forest reserves. Public education and awareness raising are emphasized as important tools for ensuring rational resource use and conservation.

Forestry Development Master Plan

The National Forestry Development Master Plan prepared in 1996 describes the social and economic factors of importance to development in the Forestry sector and is the main blue print for guiding all Forestry operational plans and programmes.

Environmental protection is quite basic in the kind and level of Forestry operations, which may be conducted in pursuit of sound forest management.

6.1.8 Ministry of Food and Agriculture (MOFA)

The Ministry of Food and Agriculture's Agroforestry Unit has established tree nurseries in all Regions of Ghana for the production of seedlings of various tree species for both demonstration and distribution to farmers.

MOFA has also reformed its structures at the regional and district levels by abolishing the separate units (i.e Animal Production, Animal Health, Agricultural Extension, Crops Services, Engineering and Mechanisation) and fusing these together into a single Department/Unit headed at the regional and district levels by the Regional Director of Agriculture and the District Director of Agriculture respectively.

With these transformed structures the various extension units have been unified under the regional and district directorates. MOFA hopes, through this exercise of restructuring, to achieve food security by increasing production whilst at the same time protecting land and water resources.

The Ministry has adopted an agricultural development strategy as an agenda for sustainable agricultural growth and development. The strategy that recognised issues like price deregulation, withdrawal of subsidies, privatization, agricultural trade liberalization and production modernization has been subsumed by the Medium-term Agricultural Development Programme (MTADP). The MTADP aims at:

- ❑ Provision of food security
- ❑ Creation of rural employment opportunities
- ❑ Enhancement of agriculture-industry linkages
- ❑ Promotion of environmentally sound agricultural resources use and protection
- ❑ Increased productivity

The sector, in collaboration with other sectors and non-governmental organisations, are formulating policies on soil fertility enhancement and conservation to guide farming activities and resource harvesting in order to ensure sustainable natural resources (land and water) management.

6.1.9 Ghana National Fire Service (GNFS)

Bush burning is one of the contributory factors of land degradation in the savanna areas of Ghana. To help in the prevention and control of bush fires, the Ghana National Fire Service has recently established a Rural fire Department whose duty is to educate the public on the effects of bush burning and the formation to trained fire volunteer squads in village to help prevent bush fires.

The Department does not only train the volunteers, but also makes follow-up visits to the volunteers from time to time to see how effectively they are operating. Other new roles that have been assigned to the fire volunteers squads include the education of the rural communities on fire belt construction to safeguard crop farms and plantations against bush fires and physically arresting culprits found to start bush fires for prosecution by the traditional leaders or court. The volunteers are also engaged in educating other community groups about tree planting, woodlot and agro-forestry establishment by community groups and individuals.

National anti-bush fire campaigns are launched every year to create awareness about bush fires and the need to prevent them. Prizes are awarded to communities that do not experience out-breaks of bush fires over a period.

6.1.10 Ministry of Mines and Energy

One of the aims of the Ministry of Mines and Energy is to improve the development and use of renewable energy, particularly woodfuels and other biomass resources which not only bring socio-economic benefits to the country, but also help in checking the rate of deforestation and desertification.

In this connection, the Ministry is implementing a number of projects aimed at:

- i) conserving forest resources through improved methods of charcoal and firewood production;
- ii) reducing the consumption of firewood and charcoal by introducing more efficient cook stoves;
- iii) expanding the production and use of existing bio-energy sources such as biogas and briquettes from logging and wood processing;
- iv) planting for the security of biomass supply through the implementation of a sustained programme of forest regeneration and afforestation.

6.2 Improving Knowledge Of Desertification

6.2.1 Targeted Workshops, Seminars and Public Awareness

Efforts to improve knowledge of desertification in Ghana date back to the mid-1980s when the country was included in the list of countries that should benefit from UNDP/UNSO support for desertification control. A national workshop on Combating the Effects of Drought and Desertification was organised in January, 1986. This workshop was followed by a series of sensitisation activities which culminated in the drawing up of a National Plan of Action to Combat Desertification (NPACD) in 1987 and subsequently, the establishment of a Desertification Control Unit within the Environmental Protection Agency in 1987.

The Unit carried out a number of educational programmes including the organisation of study tours to Burkina Faso and Senegal and a workshop for Desertification Monitoring Assistants in 1991.

In more recent years, the following educational and sensitisation programmes have been organised:

- a) In October, 1994, a seminar on Drought and Land Degradation was organised. This was the first time that the adopted Convention to Combat Desertification was brought to the attention of the Ghanaian public. As part of the seminar programme, there was a presentation on the Convention, followed by a press interview.

The proceedings of the seminar were given wide publicity in the press. Radio discussions were also organised in some local languages.

- b) Beginning from 1995, Ghana has been joining the rest of the world in celebrating the World Day to Combat Desertification and Drought, which normally falls on 17th June.
- c) In October, 1995, a seminar on Environment was organised for the Press in Ghana. As part of the seminar, a presentation on desertification was made with special emphasis on the Convention.
- d) From 24-25 June, 1996, a National Awareness Seminar was organised with full sponsorship from the CCD Secretariat and active collaboration from the UNDP. Even though participation at the awareness seminar was cross-sectoral and nation-wide, a majority of the participants were drawn from the dry Regions of Ghana. Press coverage for this event was also quite wide.

6.2.2 Institutional Training and Research

Apart from the targeted workshops, seminars and public awareness programmes, Ghana has a wide range of training institutions that run courses on specific aspects of desertification. These institutions include the Regional Institute for Population Studies (RIPS) and the Department of Geography and Resource Development of the University of Ghana, the Institute of Renewable Natural Resource (IRNR) and the Faculty of Environmental and Development Studies of the University of Science and Technology, the Ghana School of Forestry and the University for Development Studies.

The training institutions are backed up by an equally wide range of research organisations. These include the Soil Research Institute (SRI), the Water Research Institute (WRI), the Forestry Research Institute of Ghana (FORIG), the Savannah Agricultural research Institute (SARI), the Remote Sensing Application Unit (RSAU) and the Land Administration Research Centre (LARC). The RSAU does both training and research.

6.2.2.1 Savanna Agricultural Research Institute (SARI) Contribution Toward Controlling Desertification In Ghana

The institute which, until 1994 was known as the Nyankpala Agricultural Experimental Station, has built up an effective and efficient research establishment covering Northern Ghana, involving the creation of the requisite infrastructure. The impact of SARI currently extends beyond Ghana. Most of the institute work is done in collaboration with both national institute (such as MoFA, EPA, NGOs, SRI, ARI, CRI, PGRI, UST, University of Ghana, FORIG etc) and international institutes (such as IITA, ILRI, WARDA, ICRISAT, Clemson University etc.)

The Institute has chalked significant achievements in various fields of agricultural research that help in controlling or preventing land degradation or desertification. These include:

Agro-forestry: Use of leguminous trees such as *Gliricidia* and *Leucaena* tree spp. For sustaining soil productivity, providing fodder for supplementary feeding of livestock,

sticks for yam staking, firewood and material for construction. The use of fibre crops (such as kenaf and roselle) for life staking of yam has contributed to reduction in uncontrolled cutting of trees.

Soil tillage: Most of the work done in this area is geared towards water and soil conservation. This involves the use of animal traction, contour ploughing and land forms (such as ridges, tied ridging and mounds).

Breeding: The institute has done enormous work in the field of breeding. It has come out with early maturing and drought tolerant varieties of cowpea, groundnut, soyabean, maize sorghum, millet, and cassava that are able to escape terminal drought and withstand mid-season dry spells. It has produced cowpea, groundnut, sorghum that have high fodder yield to supplement livestock feeding in the dry season. This has significantly reduced overgrazing and hence land degradation.

Crop-livestock Integration: Considering the integrated nature of crops and livestock in Northern Ghana, the institute has taken a look at farming holistically. Preliminary investigation has shown that it is important to retain that at least 50% of the residue on the field as much to protect the soil against erosion, harsh weather conditions and sustains soil microbial activities. The remainder of the residue is fed to livestock and the dung of the livestock returned to the soil.

Cover crops: The use, of calopogonium, Peuraria and Mucuna spp. For maintaining vegetation cover in the dry season. This minimizes soil erosion and improves soil fertility.

Soil fertility: From over a decade of sustained research, the institute has brought to light crop rotation and inter-cropping system that allows continuous cropping on the same piece of land. The use of pigeon pea as a short fallow, composite and organic manure use to sustain soil productivity has also been well researched.

Agrometeorology: The institute has well-equipped meteorological station at Nyankpala and Manga. It has up to date data on rainfall, temperature, humidity, evaporation and sunshine hours. Analysis of the weather data has helped farmers to plant at the appropriate time so as to evade drought.

Through training, the institute has managed to impart these technologies to farmers through extension staff and NGOs. This has significantly assisted in controlling land degradation.

6.3 Women in Natural Resource Management

Women in Ghana play a critical role in natural resources management. In line with this, various activities have been undertaken by women's groups, which have direct relevance for desertification control. Some of the women's groups are: -

The Kumbunyili-Katariga Women's Nursery Group, which produces seedlings for supply to nearby communities; the Rural Women's Association, which engages in tree growing and tracing for women; and the 31st December Women's Movement that is also active in tree nursery and growing activities in many rural areas.

Given the important role that women play in natural resources management, it has been planned to organise training programmes on current sustainable development issues and strengthen the role of women's groups at the District and community levels on sustainable development activities. Technologies employed by women in their day to day activities would be improved to make them environmentally friendly. This is more critical in the areas of agriculture and energy utilization.

6.4 Non-Governmental Organisation (NGOs)

Measures to conserve natural resources and to improve knowledge of desertification are being carried out not only by organisations in the Government sector, but also by NGOs and community groups. These NGOs and community groups and even individuals collaborate with and reinforced the efforts of the Government sector organisations.

7.0 FINANCIAL ALLOCATION FROM NATIONAL BUDGETS IN SUPPORT OF IMPLEMENTATION AS WELL AS FINANCIAL ASSISTANCE AND TECHNICAL CO-OPERATION RECEIVED AND NEEDED

The Ministries, Department and Agencies whose activities relate to combating desertification and mitigating and effect of drought are allocated funds on an annual basis for their operations.

The Ministry of Environment, Science and Technology, for instance, has the Environmental Protection Agency, The Council for Scientific and Industrial Research and its component Institute (eg. Crop Research Institute, Animal Research Institute, Soil Research Institute, Savanna Agricultural Research Institute, Forest Research Institute of Ghana, Water Research Institute) playing various roles which have relevance for desertification control.

For the 1998 financial year, the Government of Ghana made an allocation of ₵11.7 billion for the overall development expenditure of the Ministry with which the Constituent Departments, Institutes and Agencies were to carry out their planned activities including desertification.

Under the NRMP (Savanna Component) some financial allocations have been proposed for desertification control and related activities at the district and community levels including funds for the development of the NAP process.

National Desertification Fund (NDF) And Task Force

With the support of UNDP/UNSO, Ghana has put together a Task Force to work out the modalities for the establishment of a National Desertification Fund.

The Task Force has held several meetings and is currently considering various options for determining the nature, scope structure, legal status and functions of the fund. Some of the possible options under consideration are the establishment of the Fund by

an act of Parliament as a statutory corporate body, or under a trust deed, or a Company limited by guarantee.

In considering these options, the Task Force intends to learn from relevant experiences on the subject and related arrangements from other jurisdictions.

7.1 National Population Fund

The National Population Council is also working towards establishing a National Population Fund. This Fund, when established, will also help address desertification issues.

8.0 REVIEW OF THE BENCHMARKS AND INDICATORS UTILISED TO MEASURE PROGRESS AND AN ASSESSMENT THEREOF

Ghana is in the process of establishing benchmarks and indicators for sustainable development which would be applicable to desertification activities.

A National Committee on Sustainable Development indicators has been established to develop benchmarks and indicators that would be used to measure progress in the implementation of the National Action Programme (NAP).

Various government organisations and Agencies are engaged in environmental monitoring and observation as part of their responsibilities to the people of Ghana.

The key agent to the environmental monitoring are the environmental Protection Agency which engage water air quality, and land degradation monitoring. The agency has set out baseline data for some important parameters and establishment permanent monitoring sites through out the country. The Water Resource institute is responsible for the management of water resource for water quality studies and monitoring on large scale as well, as monitoring waterweeds and water related diseases.

The Soil Research Institute provides data on land and soil suitability, soil types, soil fertility status and maps.

Meteorological service department stores data on agro-meteorology and help to predict weather conditions and drought.

Other indicators to be established by the various actors in the preparation of the NAP will be utilised for the monitoring and evaluation of the programme activities.

9.0 CONCLUSION

Among the environmental problems facing Ghana is desertification, which is caused by factors such as deforestation, soil erosion, bush burning and inappropriate agricultural practices.

The government of Ghana recognises that generally, environmental degradation is occurring in the country as a result of the boost given to economic activities by the Economic Recovery Programme (ERP). Measures have therefore been put in place in recent years to stem the tide of environmental degradation. A new Ministry of Environment, Science and Technology (MEST) has been established and the Environmental Protection Council has been transformed into an Agency (Environmental Protection Agency) with enforcement and regulatory powers. MEST, and EPA work in collaboration with other Government and non-Governmental organisations for purposes of protecting the environment, including desertification control activities.

In 1988, the Government of Ghana initiated a major effort to put environmental issues on the priority agenda. The exercise culminated in the preparation of a strategy document – the Environmental Action Plan – to address the key issues relating to the protection of the environment and to ensure better management of natural resources. The EAP provides a coherent framework for interventions deemed necessary for safeguarding the environment. The Ghana Environmental Resources Management Project (GERMP) has been the main tools for operationalising the EAP.

Apart from GERMP, other projects are being carried out by other sectoral agencies which have great relevance for desertification control. These projects include the Forest Resources Management Project, the Natural Resource Management Project and many more.

Ghana needs financial and technical support from bilateral and multilateral partners to be able to bring all the on-going activities, and many others yet to be planned, along lines of the U.N. Convention to Combat Desertification. Specifically, assistance is urgently required to prepared and implement a comprehensive National Action Programme (NAP) for desertification control in Ghana.

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APPENDIX

GROUPS AND ORGANIZATIONS WITH TREE NURSERIES IN THE NORTHERN, UPPER EAST AND UPPER WEST REGIONS OF GHANA

NAME OF GROUP/ORGANISATION	CONTACT PERSON/ADDRESS	TREE SPECIES	AVERAGE PRODUCTIVITY CAPACITY
1. <u>NORTHERN REGION</u>			
1. Amasachina Self-Help association	Mr. A. Salifu, Amasachina, Tamale	Teak, Leucaena, Cassia, Mango	8,000
2. 31 st December Women's Movement	Mrs. Bukari	Teak, Leucaena, Mango, Cassia	6,500
3. CIPSEG Women's Group Kumbunyli	Mrs. Rabi Alhassan, c/o CIPSEG, Box 620, Tamale	Cassia, Cashew, Leucaena, Teak, Mango	12,800
4. TIDA, Tamale	Mr. Alhassan, TIDA, Tamale	Teak, Mango, Cassia	4,500
5. Taimako Nursery	Mr. Taimako, Tamale	Mango, Teak, Cassia, Neem	13,000
6. Collaborative Community Forestry Initiative (CCFI) Nurseries (6) in Tamale, Golinga, Salaga, Chereponi Tolon and Najon	Regional Representative, ADRA, Tamale, and the Nursery Managers of the various Nurseries	Teak, Cassia Mango, Neem, Cashew, Leucaena	85,980
7. Rural Forestry Unit of the Forestry Department, Nurseries located in Tamale, Damongo, Walewale and Yindi	Regional Officer, Rural Forestry Unit, Forestry Department, Tamale	Cassia, Teak, Mango Mahogany, Leucaena,	40,000

NAME OF GROUP/ORGANISATION	CONTACT PERSON/ADDRESS	TREE SPECIES	AVERAGE PRODUCTIVITY CAPACITY
8. Boforo Nurseries, Savelugu	Mrs. Mary Borofo, Savelugu	Cassia, Mango, Cashew, Teak	5,000
9. PAPADEV Nursery	Mr. James Boronsum, P. O. Box 8 Bole	Mango, Cashew, Teak	4,800
II. <u>UPPER EAST REGION</u>			
1. Bongo Collaborative Community Forestry Initiative (CCFI)	C/o Bongo District Assembly Private Mail Bag, Bongo	Teak, Cassia, Mango, Neem, Cashew, Guava, Sheanut	39,598
2. Sandema CCFI	C/o The Dist. Ext. Officer, MOFA, Sandema	Teak, Cassia, Mango, Neem, Cashew, Guava, Dawadawa, Sheanut	83,798
3. Paga CCFI	C/o Paga Chief's Palace, Paga	Teak, Cassia, Mango, Guava, Cashew, Neem	11,695
4. Kandiga CCFI	C/o A. A. Mainoo, ADRA, Box 135, Bolgatanga	Neem, Dawadawa, Sheanut, Mango, Guava, Cashew	4,662
5. Tempani CCFI	C/o Garu Agric. Station, Box 44, Bawku	Teak, Cassia, Neem, Mango, Guava, Cashew, Dawadawa	39,088
6. Tongo CCFI	C/o A. A. Mainoo, ADRA, Box 135, Bolgatanga	Teak, Cassia, Dawadawa, Sheanut, Guava, Cashew	44,985
7. Kulungugu CCFI	C/o A. A. Mainoo, ADRA, Box 135, Bolgatanga	Teak, Cassia, Dawadawa, Sheanut, Guava, Cashew	11,099

NAME OF GROUP/ORGANISATION	CONTACT PERSON/ADDRESS	TREE SPECIES	
8. Yelwoko CCFI	C/o A. A. Mainoo, ADRA, Box 135, Bolgatanga	Teak, Neem, Cashew, Cassia, Guava, Mango	
9. Zebilla CCFI	Bawku West District Assembly Private Mail Bag, Zebilla	Teak, Neem, Cassia, Cashew, Guava, Mango, Dawadawa	
10. District Crop Services Dept. Bolga.	District Crops Officer, MOFA, Bolgatanga	Teak, Cassia, Guava, Flamboyant, Cashew, Eucalyptus, Albizia, Mango, Cashew	
11. District Crop Services Dept. Bongo	District Crops Officer, MOFA, Bongo	Teak, lam	
12. District Crop Services Dept Builsa	District Crops Officer, MOFA, Sandema		
13. District Crop Services Dept., Bawku West	District Crops Officer, MOFA, Zebilla		
14. District Crop Services Dept., Bawku East	District Crops Officer, MOFA, Bawku		
15. District Crop Services Dept., Kassena/Nankana	District Crops Officer, MOFA, Navrongo		