



REPUBLIC OF GHANA

## ***MANAGING GHANA'S WETLANDS:***

### ***A NATIONAL WETLANDS CONSERVATION STRATEGY***

MINISTRY OF LANDS AND FORESTRY

1999

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#### **FOREWORD**

Until recently, wetlands were virtually considered as "waste lands" or areas that only served for breeding mosquitoes. As such, in the past, they were dredged to facilitate drainage of the water, reclaimed for other uses, or simply considered as dumping grounds for all types of refuse. Wetlands resources, such as fish, reeds, mangroves and thatch materials were harvested indiscriminately without any attempt to regulate their exploitation.

However, since 1971, when the Convention on Wetlands of International Importance (Ramsar Convention, 1971) came into force, wetlands have been internationally recognised as ecosystems of considerable importance, comparable to our forests, rangelands and marine ecosystems.

The Government of Ghana recognises the importance of wetlands as habitat for wildlife, in the maintenance of the water table, mitigation of flood conditions and water purification. Wetlands resources are also known to be of socio-economic importance and have been harvested for construction poles, fuel-wood, timber for

furniture and craft work. Furthermore, wetlands are of importance as fishing, hunting and grazing areas, and play an important role in crop production and domestic water supply.

To ensure the judicious use of the nation's land and all its natural resources, the Ministry of Lands and Forestry launched the National Land Policy in June 1999. The policy recognises wetlands as environmental conservation areas and precludes the following practices:

- physical draining of wetland water;
- draining of streams and water courses feeding the wetlands;
- human settlements and their related infrastructural developments in wetlands;
- disposal of solid waste and effluents in wetlands, and
- mining in wetlands.

The policy also seeks to promote the use of wetlands for farming, grazing, fishing, timber production and salt-winning, provided that such uses also serve to conserve the ecosystem, biodiversity and sustainable productivity of the wetlands.

The Government of Ghana, through the implementation of the Ghana Environmental Facility, funded Coastal Wetlands Management Project from 1993 to 1999; carried out public education and awareness-creation programmes to enlighten the general public on the values, benefits and functions of wetlands and the need for their conservation and sustainable use. In order to integrate wetlands issues into national land-use planning and decision-making in other sectors of the Ghanaian economy, the Ministry of Lands and Forestry has, in consultation with key stakeholders, prepared this document – *Managing Ghana's Wetlands: A National Wetlands Conservation Strategy* – to promote participation of the local communities and other stakeholders in the sound management and sustainable utilisation of Ghana's wetlands and their resources.

The Government of Ghana wishes to acknowledge the financial support of the Global Environment Facility and the World Bank, which facilitated the formulation of the wetlands strategy. We are also grateful to all those who, in diverse ways, have assisted in the formulation of the strategy.

We hope that all Ghanaians will co-operate in the implementation of the strategy to ensure the conservation and sustainable management of the wetlands of Ghana for the benefit of present and future generations.

(Signed)

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## PREAMBLE

Ghana has been a signatory to the Ramsar Convention, an international treaty focusing on the conservation of wetlands of international importance, since 1988. A major obligation under the Convention is the implementation of the principle of 'wise use' of the wetlands resources, where "wise use" is understood to mean "***their sustained utilisation for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem***". Contracting Parties to the Convention are also required to integrate wetlands conservation issues into their national land-use planning policies.

The Government of Ghana has overall responsibility for perpetuating wetland areas, and also administers a range of social, economic and environmental programmes which impact on wetland management throughout the country. However, local communities are directly responsible for the management and "wise use" of wetland resources in their localities.

In fulfilling its obligations as a Contracting Party to the Convention, Ghana has already integrated wetlands issues into the National Land Use Policy. The Government of Ghana sees its role in wetlands management as best performed through partnership and co-operation with local people, governmental and non-governmental organisations and the private sector. The Government will lead by example and is committed to move forward national and international efforts in wetland management through the demonstration of best practice and the provision of expertise.

The term 'wetland' groups together a wide range of habitats that share common features, the most important of which is continuous, seasonal or periodic standing water or saturated soils. Formal management of wetlands sites started in 1988 and is still in its infancy.

Wetlands are distributed over the entire country and have been traditionally used by the local populations as a source of the basic necessities of life, ranging from building materials, hunting and fishing areas, as well as sources of water. Local populations have developed traditional knowledge systems and practices, which govern the management of wetlands.

*The Ramsar Convention describes wetlands as "areas of marsh, fen, peat land or Water, whether natural or artificial, permanent or temporal, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six metres" (Ramsar Convention, 1971).*

The purpose of this document, "*Managing Ghana's Wetlands: A National Wetlands Conservation Strategy*" is to document the strategies for incorporating wetlands management, into the day-to-day activities of Government, organisations, traditional authorities, communities and individuals within the broader context of environmental management,

The strategy which seeks to implements Government's policy on wetlands as stipulated in Ghana's National Land Policy, is based on background materials prepared by five working groups established by the Wildlife Division of the Forestry Commission (Ramsar Administrative Authority in Ghana) to work on:

- a. Wetlands Faunal Diversity,
- b. Wetlands Floral Diversity,
- c. Wetlands Typology,
- d. Socio-economic and Land-use, and
- e. Education, Policy and Legal Issues.

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## **PART I: BACKGROUND**

### **1. Ghana's Wetland Resources**

Wetland ecosystems in Ghana constitute about ten percent of the country's total land surface. Based on the criteria of the Ramsar Convention, three main types of wetlands are identified in Ghana. These are:

- marine/coastal
- inland and
- man-made.

#### **1.1 Marine/Coastal Wetlands**

The wetlands within the coastal zone of Ghana are mainly saltwater ecosystems. They are primarily associated with flood plains of estuaries of large rivers and watercourses. The major coastal wetlands or salt-water ecosystems are:

<b>Marine/ Coastal Ecosystems</b>	<b>Location/Examples</b>
1. Rocky Marine Shores	Senya Bereku, Cape Three Points etc.
2. Estuarine Waters	Mouths of Volta, Pra, Butre,
3. Mangrove/tidal forest	Ankobra
4. Brackish/Saline Lagoons	Lower reaches of Volta, Oyibi, Kakum, Ankobra
	a. Open Korle, Amisa.
	b. Closed Songor, Muni

Marine wetlands include the open coasts not subject to the influence of river water and lagoon systems. It extends to marine waters, the depth of which at low tide does not exceed six metres. This is exemplified by areas such as the sandy beaches and shallow waters along the Brenu Akyim seashore in the Central Region.

## **1.2 Inland Wetlands**

Inland waters are mainly freshwater ecosystems. They occur wherever groundwater, surface springs, streams or run-off cause saturated soils, frequent flooding or create temporary and/or permanently shallow water bodies. Included are the following:

<b>Inland Wetlands</b>	<b>Location/Examples</b>
1. Permanent river/stream	Densu, Afram, Oti and Ankobra
2. Permanent freshwater lake	Bosumtwi

- |                            |                            |
|----------------------------|----------------------------|
| 3. Freshwater swamp forest | Amansuri                   |
| 4. Freshwater marshes      | Black, Red and White Volta |

Inland or freshwater wetlands, especially freshwater marshes are the most widespread and important world-wide. In Ghana, this is the most extensive as it encompasses all the natural drainage systems as shown in Figure 1 (page 8; but 5 in original text).

### 1.3 Man-Made Wetlands

The Ramsar Convention also recognises four categories of man-made or artificial wetlands. These are wetlands constructed for aquaculture, agriculture, salt exploitation, water storage and urban/industrial purposes. In Ghana, these are exemplified as follows:

<b>Categories Of Wetlands</b>	<b>Location/Examples</b>
1. Irrigated land	Tono, Veve, Dawhenya , Anum Valley
2. Salt Pans	Elmina Salt Pans, Songor, Densu Delta
3. Reservoirs	Volta Lake, Kpong head pond, Brimsu reservoir
4. Urban/Industrial	Tema Sewerage Treatment Plant

In addition, there are wetlands, which are widespread and found in many places, e.g. Gravel pits, fish-ponds and mining pools.

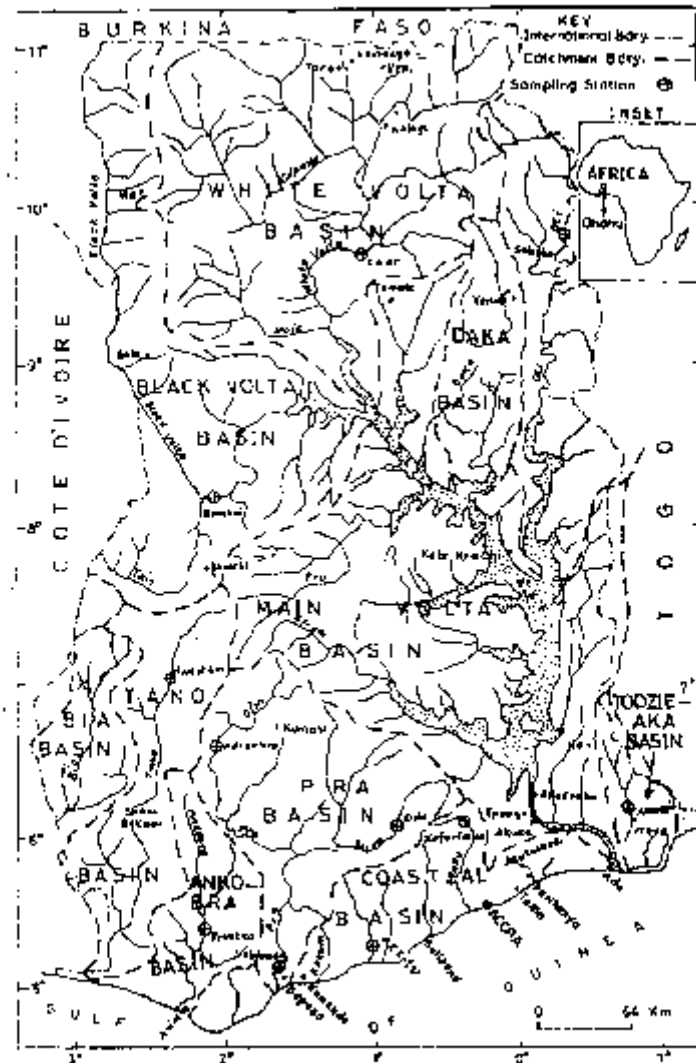


Figure 1: Drainage Map of Ghana

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## 2. WETLAND VALUES

### 2.1 Functions, Products and Attributes

All wetlands are made up of a mixture of soil, water, nutrients as well as plants and animals. The interactions among these components allow the wetlands to perform certain **ecological** or **natural function** and generate **products** that are of socio-economic importance. The combination of these **functions** and **products**, together

with the value placed upon biological diversity and cultural/heritage **attributes**, make wetlands important to society.

### **2.1.1 Functions of Wetlands**

Wetlands perform functions that of great importance to society. They include:

#### ***2.1.1.1 Maintenance of the water table***

Wetlands facilitate the movement of large volumes of water into the underground aquifers, resulting in the recharge of the water table. This process maintains a high water table, supports healthy plant growth and may also be drawn for human consumption and industrial activities.

#### ***2.1.1.2 Flood and Erosion Prevention***

Wetlands prevent surface run-off from moving swiftly and overflowing the river banks downstream thus preventing erosive flood conditions.

#### ***2.1.1.3 Storm Protection***

Wetlands, such as mangroves and other forested coastal areas, act as windbreaks and help to mitigate the impact of coastal storm surges. A greater part of the eastern shoreline of Ghana, especially at Keta and Ada, is vulnerable to storm surges due to lack of such a natural protective system. Hence, the frequent storm surges and sea erosion in these areas.

#### ***2.1.1.4 Water Purification***

Wetlands remove sediments, nutrients, toxic substances and other pollutants in surface run-off. This improves the water quality and prevents the siltation of downstream watercourses.

### **Micro-climate Stabilisation**

Wetlands vegetation may also evaporate or transpire water into the atmosphere. This falls as rain in the surrounding area and helps to maintain stable climatic conditions. This, in turn, supports stable agriculture and other resource-based activities.



### **2.1.1.5 The Wetlands as a Habitat**

Wetlands provide habitat for high concentrations of birds, mammals, reptiles, amphibians, fish and invertebrates species. Thousands of waterfowl, many of them migratory, visit Ghana during the northern winter. About 60% of all fish catches from the sea spawn in coastal wetlands. The west African Sitatunga (*Tragelaphus spekei*), thought to be extinct in West Africa, has been discovered recently in the Volta Delta.

### **2.1.2 Product of Wetlands**

The products of wetlands refer to those components that are subject to human exploitation, and therefore of socio-economic importance to society. These include:

#### **2.1.2.1 Plant Products**

Traditionally, mangroves and other wood product are harvested for fuel-wood, timber and medicinal purposes. Mats, baskets and thatching material are derived from grasses and reeds in the wetlands.

#### **2.1.2.2 Fish**

Wetlands constitute an important fish habitat and support large populations of fish. Many local communities depend fish sources from wetlands for their livelihood.

#### **2.1.2.3 Forage**

Wetland grasslands provide critical areas for livestock grazing, especially during the dry season.

#### **2.1.2.4 Water Supply**

Because of their ability to purify and retain large volumes of water, wetlands provide clean and reliable sources of water for human consumption, agriculture and industry. Many rivers flow throughout the year because the wetlands, like our rain forest, release their stored water slowly into them, thus extending the period when water is available in dryer times. Wetlands are, therefore, important in maintaining perennial rivers and streams.

#### **2.1.2.5 Agricultural Resources**

Some important agricultural resources, such as the wild variety of plant materials, are derived from wetlands. Rice, for example, which is a common wetland plant, is the staple diet of more than half of humanity.

#### ***2.1.2.6 Recreation/ Tourism***

The spectacular concentration of different species of animals and plant in wetlands provide opportunities for tourism and recreational activities. These include bird-watching, game-viewing and sport fishing.

#### **2.1.3 Attributes**

The attributes of wetlands refer to the value placed on their biological diversity. It also includes their importance to cultural heritage.

##### ***2.1.3.1 Biological Diversity***

Most wetlands support spectacular concentrations of a variety of plants and animals. This attribute is of value in itself as it contributes immensely to the maintenance of their ecological processes for the benefit of the present and future generations.

##### ***2.1.3.2 Cultural/Heritage Value***

Many wetlands, such as Sakumo lagoon, are regarded as the abode of "gods". They are therefore revered and protected through various traditional practices aimed at maintaining and preserving them.

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### **3. THREATS TO GHANA'S WETLANDS.**

#### **3.1 Sources of Threats**

The demand for goods (products) and services (ecological functions) of wetlands determines the level of their exploitation. Mainly, human pressures engineered by over-exploitation, drainage, conversion, pollution and other conflicting land-use practices threaten many wetlands in Ghana. The underlying factors of these threats and conflicts are varied and include society's lack of perception of the ecological functions and socio-cultural values of wetlands. They may be attributed to incompatibilities between existing resource activities and the objectives of

protection and conservation. Established right and privileges of ownership, concerning the use of wetlands also constitutes a major source of threat.

## **3.2 Major Threats**

The major threats to wetlands include:

### ***3.2.1 Water Loss***

Drains and channels may be constructed to divert or increase water out-flow from wetlands. Such drainage causes loss of water to the water table and vital plant life. Consequently, the wetlands dry out, resulting in the loss of the goods and services provided by wetlands.

### ***3.2.2 Loss of Run-off Control***

When wetlands lose their water as a result of drainage, their soils dry out and are no longer able to store large volumes of water. As a result, there is increase surface run-off and frequency of floods. Annual flow period of the river is reduced and many water courses dry up. This is already being experienced in many part of Ghana, especially the Volta Basin.

### ***3.2.3 Wetlands Conservation***

Wetlands may be reclaimed or filled for residential and industrial development, road construction. They may also be converted for aquaculture. This reduces the extent of wetlands and impacts negatively on the associated species. Many areas may experience increased frequency of flooding, as wetlands are unavailable to control surface run-off. Traditional harvesting of fuel-wood, timber, fish and good water supply are lost when wetlands are converted to other forms of land use.

### ***3.2.4 Regulation of Water Supply***

Construction of dams, dykes and sea walls for the regulation of water supply deprives many downstream wetlands of their normal water regimes. For example, the construction of dams on the White Volta in Burkina Faso is perceived to be the cause of the dropping water levels in the Volta Dam at Akosombo; the construction of the Akosombo Dam has also drastically reduced the water availability to the

downstream communities, disrupting the livelihood of local communities dependent on valuable fisheries productivity and water supply systems.

### ***3.2.5 Saltwater Intrusion/Soil Salinisation***

In the coastal areas, the reduction of the input from upstream sources leads to increase intrusion of sea water into the water table, and hence, soil Salinisation. The result is change in species composition as salt sensitive species are replaced by more salt-tolerant ones.

### ***3.2.6 Soil Degradation***

When wetlands soils are exposed due to drainage or the destruction of their vegetation through bush fires, lumbering and fuel-wood harvesting, leaching of soil nutrient take place and the sulphides in the original soils are converted into sulphuric acid leading to acidification. The soil may shrink upon drying and can no longer support good agriculture or plant life.

### ***3.2.7 Pollution***

The dumping of refuse, discharge of industrial and domestic sewerage, as well as agricultural run-off into wetlands increases the organic loading of the wetlands waters. This increases the biochemistry oxygen demand (BOD) of the water body, leading to inadequate oxygen supply to support plant and animal life. This may seriously contaminate the water, endangering the plant, animals and people living in or near to the water. Typical example of such polluted systems can be found in the Densu and subin river basins and the Sakumo and Korle Lagoon.

Discharge of untreated toxic materials, such as heavy metals and other organic chemicals from industrial and mining activities, and leachate from hazardous waste, when discharged into nearby wetlands and other water-bodies, cause mortality of aquatic life. If the discharge persists, it destroys the wetlands as a habitat. The Pra and Ankobra rivers typify this state of affairs.

### ***3.2.8 Over-Exploitation***

During times of draught, people tend to migrate into wetland areas. Increased demand on wetland resources, such as livestock grazing, fuel-wood, timber, water abstraction and fisheries lead to over-exploitation. This leads to the disruption of the

ecological and socio-economic functions of the wetland, resulting in the loss of livelihood for many local communities.

### ***3.2.9 Deforestation***

Deforestation upstream of wetlands result in increase surface run-off, as well as sediment load of water that flow into the wetlands. This reduces light penetration in wetlands waters and result in loss in primary productivity.

### ***3.2.10 Sediment and Nutrient Diversion***

Dams and other impoundment prevent sediment from reaching down-stream water courses. Deficiency in nutrients and sediment reaching deltas results in coastal erosion and reduction in the natural productivity of some aquatic life forms. For example, the normal nutrient and sediment supply circle for the Lower Volta Basin downstream of Akosombo was disrupted with the construction of the dam and has resulted in increased sea erosion in the Keta and Ada-Foah areas of the coast line.

### ***3.2.11 Disruption of Stable Climatic Conditions***

The loss of water and vegetation reduces evapo-transpiration from wetlands. This leads to the disruption of the stable climatic conditions leading to drought, and under extreme conditions can lead to the disappearance of the wetlands.

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## **4. OPPORTUNITIES**

Several opportunities exist for the management and conservation of wetlands in Ghana. These stem from the sectoral policies, traditional management practises and available scientific knowledge that have encouraged both utilisation and conservation of wetlands.

### **4.1 Government Policies**

The following policies, which are already in existence or have been enacted into laws, are among those that have widely affected wetlands usage: Fisheries Law, Environmental Policy, Wildlife & Forestry Policy, Medium-Term Development policy (Ghana Vision 2020), Water Resources Commission Act (522) and the Land Policy.

## **4.2 Traditional Management Practices**

A strong traditional base for protection of wetlands through indigenous management systems exists in Ghana. Most wetlands and their resources have protected and regulated in the past through varied traditional practices, depending on the beliefs of the traditional area that claims ownership. These traditional practices involve customary laws or taboos, which determine rights to land and resource use. They include the enforcement of sanctions for violation by the responsible authority.

Traditional management practices, which underscore socio-cultural values, are accepted as means of regulating the utilisation of wetland resources. Practices, such as the ban on fishing in the Sakumo lagoon, are important in ensuring that fish in water bodies would grow to maturity and breed effectively.

Traditionally, every river, lagoon or special water body has a god or goddess with its set of unique regulations. Though these rules and regulations are steeped in traditions, their effect is to control resource use and are generally observed by local populations.

## **4.3 Socio-economic Demands**

The socio-economic demand for wetland resources and products is in itself an opportunity. With increasing scarcity of the wetlands resources, there will be pressure from users to ensure their sustainable exploitation.

## **4.4 Scientific Knowledge**

There exists a significant body of scientific information on wetlands in several parts of the country. For example, scientific reports are available on shorebirds, sea turtle and fish resources of some wetlands. There also exist in Ghana a substantial number of experts in wetlands ecology and management.

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## **5. INITIATIVES/RESPONSES**

The Government of Ghana, as well as concerned individuals and organisations' have made several initiatives to address the problem of wetlands management.

## **5.1 Conventions**

Ghana is a party to a number of international conventions which deal with and/or are of relevance to wetlands. However, provisions of these conventions have not been incorporated into national legislation to give them maximum in Ghana. The fact that the Government has ratified them is an indication of commitment. The most relevant of these conventions is the Ramsar Convention on Wetlands.

## **5.2 Policies and Laws**

Several national policies and legislation affect wetlands. These pieces of legislation are scattered throughout the statute books, and though outmoded and failing to address adequately the problem of wetlands in their entirety, do provide a starting point for the formulation of appropriate laws. Such policies and laws include the Fisheries Decree (1972), the Land Policy, the Water Resources Act, Ghana Vision 2020 and the Decentralisation Policy.

## **5.3 Institutions**

The protection and conservation of wetlands resources involve a number of activities. These include data collection, monitoring, standard setting and execution of projects and programmes. They are carried out by a number of government and non-governmental institutions including: Wildlife Department, Ministry of Environment, Science and Technology (MEST), Environmental Protection Agency (EPA), District and Metropolitan Assemblies, Ministry of Food and Agriculture, Survey and Meteorological Services Department, Ministry of Lands and Forestry, Forestry Department, Universities, Council for Scientific and Industrial Research (CSIR) as well as NGOs. One major initiative is the proposed establishment of the Centre for African Wetlands Management; an institution to be located in Ghana, which will co-ordinate wetlands research for the West African sub-region.

## **5.4 Sub-regional Initiatives**

Several West African sub-regional initiatives exist which relate to wetlands, e.g. the Large Marine Ecosystem of Gulf of Guinea Programme, funded by Global Environment Facility and administered through UNIDO, which aims at assisting several West African States to manage their coastal resources sustainably. Other initiatives, such as the West and Central African Regional Seas Programme (WACAF) of UNEP, have also helped establish sub-regional collaboration.

## **5.5 Projects**

Ghana has undertaken a number of projects which have had bearing on wetlands. The Ghana Coastal Wetlands Management Project (CWMP), funded by GEF and implemented by the Wildlife Department as a component of the Ghana Environmental Resource Management Project (GERMP), was aimed at establishing and managing five Ramsar sites along the coast. The Lower Volta Mangrove Project (LVMP) funded by the Department for International Development of the United Kingdom investigated in detail the problems related to excessive exploitation of mangroves in the south-eastern part of the country and made recommendations as to how they could be solved. The Natural Resource Management Project has the primary objective of establishing the institutional and operational framework within the public and private sectors for sustainable and participatory management of natural resources.

## **5.6 Restoration of Wetlands**

Government is already committed to the restoration and protection of wetlands. Apart from the local initiatives at wetlands restoration within the Ramsar sites, the Korle lagoon rehabilitation project and the proposed Chemu lagoon restoration project are examples of these initiatives.

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## **PART II: GHANA'S WETLAND CONSERVATION STRATEGY**

### **6. PRINCIPLES**

Ghana's Wetlands Conservation Strategy is aimed at achieving the guiding principles of ensuring sustainable land use within the general context of Ghana's Land Policy. The Policy seeks to promote the judicious use of the nation's land and all its natural resources by all sectors of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable resource use and maintenance of viable ecosystems.

#### **6.1 Purpose**

The purpose of National Wetlands Wetland Strategy is to build wetlands management, within the broader context of environmental management, into the



day-to-day activities of Government, organisations, traditional authorities, communities and individuals.

## 6.2 Guiding Principles

Recognising traditional perceptions, local needs, national aspirations, as expressed in Ghana's Vision 2020, as well as international guidelines, conventions and agreements, the following principles will guide Ghana's Wetlands Conservation Strategy:

- i. the principle of **wise use**, emphasising on managing wetlands within biological and physical constraints, to ensure that future generations have access to the same resources as the present generation.
- ii. the principle of **interdependence** between physical, biological, social, cultural, economic, technological and environmental conditions of wetland ecosystems;
- iii. the **precautionary principle** by avoiding activities which would affect the integrity of wetlands and subjecting all development activities to environmental impact assessment process;
- iv. the principle of "**polluter pays**" will apply to all development activities in wetland habitats;
- v. the principle that **local knowledge and traditional management strategies** play a role in the management of wetlands;
- vi. the principle that the livelihood of local communities within the catchment area is **inter-linked** with the ecological integrity of wetlands;
- vii. the principle of **participatory approach** by the involvement of traditional authorities, local communities and all concerned people and organisations at levels of decision-making in the sustainable management of wetlands;
- viii.. the principle that provision of **incentives and disincentives** are effective means of managing the use of wetlands and wetland resources;
- ix. the principle that **international co-operation** is essential in the conservation and management of shared wetland resources.

## 6.3 Aim of the Strategy

The National Wetlands Conservation Strategy of Ghana recognises that wetlands are an important component of the country's natural resources and aims at ensuring the wise use of wetlands for the benefit of the country and its people, present and future.

#### **6.4 Objectives of the Strategy**

The specific objectives of the strategy are:

6.4.1 to promote the participation of local communities, traditional authorities, and other stakeholders in sound management and sustainable utilisation of Ghana's wetland resources;

6.4.2. to maintain the ecological, cultural, recreational and aesthetic values of wetlands;

6.4.3 to ensure that national policies, local knowledge, regulations and activities contribute to the wise use and sound management of Ghana's wetland resources;

6.4.4 to ensure that national capacity-building, and appropriate legal and institutional frameworks are put in place for effective wetland conservation;

6.4.5. to create awareness among the people of Ghana on the importance of wetlands and solicit their commitment to conservation and wise use.

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### **7. POLICY STATEMENTS**

The following statements constitute the policy framework intended to guide the Government of Ghana in the implementation of the Strategy. They are aimed at ensuring the sustainable land use practices in wetlands so as to contribute to the fulfilment to Ghana's overall Land Policy:

#### **7.1 Participatory Approach**

To involve all the concerned people and organisations in wetlands management, the Government of Ghana will co-ordinate a wetlands conservation programme that will facilitate popular participatory of traditional authorities, local communities, NGOs, women's groups, youth and private sector.

## **7.2 Wise Use**

Government will promote sustainable use and discourage inappropriate use of wetlands by ensuring that only non-destructive uses are carried out in and around wetlands.

## **7.3 Wetland Site and Species Protection**

Government will take measures to identify and conserve wetlands that harbour plants and animals of conservation interest or of particular value to the local people and national and international communities.

## **7.4 Wetland Restoration**

Government will ensure the restoration of degraded wetland habitats as far as it is ecologically possible.

## **7.5 Traditional Rights and Government Policies**

Government will respect the rights of traditional authorities and communities to the use of wetlands and strengthen traditional norms and regulations for wetlands conservation. The Government will provide the appropriate legal and institutional framework for the sound management of wetlands. This will include enacting of national regulations and bye-laws and ensuring that all activities in wetland areas would be subjected to Environmental Impact Assessment process in line with Act 490 of 1994.

## **7.6 Wetland Research**

Government will initiate a co-ordinated research programme to provide basic information and knowledge on wetlands. Areas of research will include, but not limited to:

- i. ecological inventory and mapping;
- ii. wetlands assessment in terms of socio-economic and environmental aspects;
- iii. ecological monitoring and evaluation.

## **7.7 Wetland Information**

Government will promote the generation and dissemination of information on wetland resources and their use to the public as a means of raising awareness and achieving sound management of these resources.

### **7.8 Institutional Structures**

Government will establish appropriate institutional structures, including NGOs and provide resources required to manage the wetland resources of Ghana on a sustainable basis.

### **7.9 Capacity Building**

Government will promote and provide the means for the development of human resources and necessary institutional capacity required to manage the wetlands resources of Ghana on a sustainable basis.

### **7.10 Networking**

Government will encourage networking among institutions working on all aspects of wetlands, with the aim of promoting synergy.

### **7.11 Funding Mechanisms**

Government will ensure that the necessary funding mechanisms are in place, e.g., establishment of a trust fund, as a means of providing adequate funds for the management of wetlands resources.

### **7.12 International Co-operation**

Government will promote international co-operation, with both government and non-governmental organisations, in the management of wetlands and wetland resources.

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## **PART III – STRATEGY**

### **8.0 INTRODUCTION**

The following strategies are designed to address the top priority cross-sectoral issues associated with wetlands management in Ghana. It is expected that the identification of these strategies will provide an opportunity for a more detailed expression of other relevant actions as the wetland management process progresses. The actions prescribed are defined in terms of the purpose, (broadly covering what needs to be done at a given time), and the implementation arrangements, including roles and responsibilities of each implementing agent.

The time frame for the implementation of the various strategies is defined in terms of "short-term"(1-2 years) "medium term" (3-5 years) and "long-term" (more than 5 years).

## **8.1 Programme Areas**

### ***8.1.1 Participation in Wetlands Resource Management***

For broad-based and effective participation in wetlands resource management, local communities and stake-holders including NGOs, women's groups, etc., must be empowered to make decisions involving their environment. These groups will, therefore, be involved in the process of wetlands management and, in particular, the following activities:

**Identify local opinion leaders and key stakeholders:** Each local community has its traditional rulers and opinion leaders. These influential people should be identified and made to participate in the design and implementation of wetland management activities. The existing decentralised administrative structure in the country (beginning from the Unit Committees through District Assemblies) is a useful framework within which the participation of traditional authorities and local communities will be solicited.

**Create opportunities and enhance capabilities for participation:** Traditional authorities and local communities, NGOs and all key stake-holders will be provided with skills through training and resources to enhance their capacity to participate in the management of the wetlands in their locality.

#### **Time Frame**

These activities will be undertaken within 1 - 2 years, i.e. in the short term.

## **Implementation Arrangements**

The agency responsible for the overall management of wetlands, together with local communities, NGOs, women's groups and District Assemblies will be the main implementing agents.

### **8.1.2 Wise use**

Pursuant to the 'wise-use' concept, Government will apply the following specific wetland guidelines to its policies, programmes and activities:

**Active support for efficient wetland use:** The environmental impact of policies and programmes on wetlands will be constantly evaluated and appropriate action taken to support economical and efficient use wetlands, so as to and provide a high quality physical and social environment for communities.

**Minimise the conversion of wetlands to uses incompatible with sustainability:** The impact of policies, programmes and projects on wetlands will be considered under existing environmental laws and appropriate action will be taken to ensure that all requirements, i.e. Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP) are strictly adhered to.

**Enhance the perception of wetland as national heritage:** Appropriate action will be taken to conserve or enhance wetlands values as a national heritage, through promoting and encouraging those cultural and traditional practices which encourage sustainable wetlands management.

Incorporate wetlands into local land use plans: Local government organisations, would be encouraged to include wetlands conservation and management issues in their land use plans.

### **Time Frame**

These activities will be implemented during the short to medium term of the plan period. (It is understood that certain actions need to be initiated immediately, but will have to be continued over a period).

## **Implementation Arrangements**

Various Ministries and agencies are to be involved in these activities These include Regional Co-ordinating Councils, District Assemblies, Ministry of Communications, the Media etc.

### **8.1.3 Wetland Site and Species Protection**

Action will be designed to protect identifiable wetlands sites and floral and faunal species they contain. These include:

**Legal designation of major wetland sites:** Provide legal protection for key wetland sites to regulate human use of resources (plants, animals, etc.) within that area. The selection of specific sites will be guided by accepted criteria, which reflect the value/importance attached to these sites by local communities and national and international experts.

**Effective management of designated sites:** enforcing strict management oversight and control of development on protected wetland sites is a key element of any wetland protection policy and for sustainable development. In the short term, such a control is a precondition for safeguarding and restoring the wetlands ecosystems. In the long term, it is the only way to limit the economic losses, which would be incurred by uncontrolled use of the wetland resources.

**Empowerment of Traditional Authorities and Local Communities:** Legal instruments designed to protect wetland sites and species shall not alienate, but rather strengthen the hands of the traditional authorities and local populations to manage the resources of the wetland in a judicious manner and derive benefits from the management of the resources. This will be done through education and public awareness, capacity-building and networking initiatives.

#### **Time Frame**

Designation of key wetland sites will be undertaken during the short-term. Management of the designated sites will be accomplished in the long-term.

#### **Implementation Arrangements**

The legal designation of key wetland sites and their effective management are the responsibilities of the line ministry through the co-ordinating agency, local

communities and various national institutions. For example, the Attorney-General's Department and District Assemblies will be involved when necessary.

#### ***8.1.4 Wetland Restoration***

This activity is required to resuscitate those wetlands ecosystems have been degraded. These wetlands have lost their biodiversity in the process and therefore require specific actions to enable them regain their ecological balance. Action will include the following:

**Identify degraded and threatened wetlands:** All degraded wetlands will be identified and listed and appropriate measures instituted to restore or prevent further damage.

**Develop Restoration Plans:** Based on existing knowledge and resources restoration plans should encourage multi-sectoral participation. These plans should reflect the interest of all stakeholders.

**Develop Capacity:** To develop capacity all stakeholders will be encouraged to participate in the restoration initiatives.

#### **Time Frame**

Medium to Long-term activity. Severely degraded wetland sites will be accorded priority treatment.

#### **Implementation Arrangements**

Various local, national and international institutions are involved in the restoration process and these will be co-ordinated by the lead agency.

#### ***8.1.5 Traditional Rights and Government Policies***

Existing policies and laws dealing with wetland management are directed at various ecosystems, such as, water bodies and forests. There is a need to review and rationalise these laws and policies and make them specific and relevant to the management of wetlands. The following activities will be undertaken:



***Provide Legal backing for relevant traditional practices and beliefs:*** Local communities maintain a number of belief systems and traditional practices, based on age-old experiences. The present decentralisation of government administration provides a unique opportunity for District Assemblies to enact by-laws to support relevant traditional practices useful for wetlands management programmes.

***Translate Relevant International Conventions and agreements into National Laws:*** Ghana is party to many international conventions and treaties which are relevant for national wetland management programmes. Knowledge and participation in international conventions and initiatives have the potential to locally strengthen wetland management. It is, therefore, planned to make use of methodologies and guidelines developed internationally. The necessary legal framework will be developed and strengthened to facilitate the use of these mechanisms associated with international conventions and treaties.

***Rationalise Existing Laws:*** Existing legislation on wetlands is scattered and old. In some instances, prescribed penalties are woefully inadequate by present standards and therefore do not serve as deterrents. All relevant legal instruments relating to wetlands will be collated and reviewed. New and relevant legislation will then be enacted to reflect existing conditions and be of direct relevance to an integrated wetlands management programme.

**Implement and Enforce Laws:** Legal instruments are only relevant if they are effectively implemented and enforced. Efforts will be made through education and information to increase public understanding of the relevant laws, and thereby facilitate enforcement.

## **Time Frame**

Medium -to- long term.

## **Implementation Arrangements**

Various Ministries and agencies, are to be involved in these activities, e.g. Attorney General's Department, Traditional Authorities, Ministry of Communications, District Assemblies, the Media, etc.

### ***8.1.6 Research, Monitoring and Evaluation***

This is a basic activity required to improve the knowledge and understanding of the mechanism of the wetland ecosystem. The following priority activities are identified.

**Wetland Inventory:** Take stock of Ghana's wetland resources including floral and fauna resources, as well as, socio-economic status. Activities will include collection of all available information on wetlands through field studies and literature search.

**Assessment:** detailed description of the ecological character of wetlands based on information provided by the inventory will be carried out. The perceptions and attitudes of local communities, who interact with Ghana's wetlands, will be evaluated.

**Monitoring and Evaluation:** Develop simple monitoring and evaluation techniques to be used by non-specialists, including students, communities (local land users) and NGOs to determine changes in the wetland ecosystem and also provide long term data series. This will augment databases and track long-term trends.

**Criteria to determine importance:** Wetlands are of importance at different levels, e.g. local, national and international. There is the need to develop acceptable criteria to determine the importance of each wetland, especially from the utility point of view.

### **Time frame**

Some wetland research activities e.g. inventory, will be designed for the short-term. Other activities will necessarily be implemented over the medium to long-term period. It is recognised that research outputs will provide essential inputs for other programme areas.

### **Implementation Arrangements**

The co-ordination of wetland research would be the responsibility of a lead agency. However, other research and academic institutions have major contributions to make (e.g. Universities/CSIR/EPA, etc).

#### ***8.1.7 Wetlands Information***

Education and the creation of public awareness are critical for achieving the goals of the wetlands strategy. Activities relating to the education and public awareness programme include the following:

**Develop a wetlands database:** The national wetlands inventory to be conducted will identify wetland sites, their locations and boundaries, floral and faunal characteristics and the socio-economic conditions which will constitute the basis for a database. The database will be managed by the lead institution and information derived therefrom will be made available to all stakeholders. Modern technological systems such as remote sensing and satellite imagery, global positioning systems (GPS) and geographic information systems (GIS) will be used in the management of data and dissemination of information.

**Development of Educational Materials,** design and prepare relevant educational materials for use in the formal and non-formal education sectors. Special attention should be paid to the needs of local (illiterate) communities, NGOs and other users of wetland resources who do not benefit from the formal education programme.

**Review of School Curricula:** issues and materials relevant to wetlands management should be integrated in the school curricula at appropriate levels. This will promote the teaching of courses beneficial to the understanding of wetland issues.

**Media Programmes:** provide regular information on values and status of, and threats to, wetland resources. This will foster effective education and public awareness.

### **Time Frame**

Medium to Long-term activities. Programme to be reviewed at the appropriate intervals.

### **Implementation Arrangements**

Education and public awareness for wetland management is the responsibility of several government and NGO institutions including the Ministries of Education, Communications, Environment, Science and Technology, Lands and Forestry, Local Government and Rural Development, the Universities, CSIR, NGOs, etc.

#### **8.1.8 Institutional Structures**

Effective institutional arrangements are crucial for the successful implementation of action plans that address issues that cut across several sectors. Some inter-sectoral action plans often employ the "one-window" management approach, whereby several different institutions form a committee empowered to act for all. The following actions will be put in place:

**Identify key players and assign roles:** wetland management at the national level is characterised by fragmentation of responsibility, with many line ministries and departments participating in the process. The key institutions whose mandates currently involve them in wetland management will be identified and their roles evaluated. This will facilitate co-ordination of programmes designed for the management of wetlands.

**Assign co-ordination role to an existing institution:** presently, there is no single authority responsible for the development and management of wetlands in the country. However, there is the need for a shift from the present sectoral approach to management towards a multiple-use system of management. This approach emphasises co-ordination of policy development objectives and stakeholder interests. It is recommended that in the short term a National Wetlands Committee (NWC) be established as a technical committee within the Ministry of Lands and Forestry. The NWC will act as the lead agency for the management of Ghana's wetlands and will be decentralised to the District Assemblies level.

**Identify levels of Co-ordination:** between and within government and non-governmental organisations. What is required is a structural adjustment within the national administrative system to facilitate inter-ministerial, inter-departmental, inter-district level and other forms of collaboration and co-ordination. The Ministry of Lands and Forestry will be mandated to facilitate this process.

#### **Time frame:**

These are short-term activities and will be carried out with the launching of the policy document.

#### **Implementation Arrangements**

All line ministries and departments, local communities and NGOs involved in the wetlands programme will be brought on board. The Ministry of Lands and Forestry will be responsible for the establishment of the National Wetlands Committee.

### **8.1.9 Capacity Building**

The appropriate steps will be taken to enable individuals and institutions to acquire the necessary tools and skills to manage wetland resources. Activities include:

**Human Resource Development:** Improve and increase skills within the public and private sectors and among the NGO community. Provide requisite training (formal and non-formal) among local communities. Where necessary make use of private enterprise, encourage part-time work, promote NGO participation and use volunteers to supplement skilled manpower.

**Institutional Support:** Provide necessary equipment, e.g. office, laboratory and communications equipment and transportation facilities for public and private institutions engaged in education, awareness and research activities related to wetlands.

#### **Time Frame**

Medium to long term.

#### **Implementation Arrangements**

Capacity building is the responsibility of government, the lead agency and individual institutions involved in the wetlands management programme. However, there is a need for co-ordination to avoid duplication and wastage of human resources. The co-ordination role rests with the lead agency.

### **8.1.10 Networking**

The promotion of working relationships or networks at the local, national and international levels is required for the successful implementation of a wetlands programme. Related activities include:

**Identify Stakeholders:** The first step towards the creation of a viable network is the identification of the relevant local, national and international stakeholders or partners. Implementation of an action plan for a delicate ecosystem such as wetlands will only be successful if the plan is "owned" by all stakeholders. These stakeholders include local residents, district, regional and national administrators, academic and research personnel, international institutions and private sector.

Appropriate networks will be developed and strengthened among these various stakeholders at different levels to facilitate programme implementation and information exchange.

***Develop modalities and structures for information exchange:*** Various stakeholders will benefit from an information exchange programme to be co-ordinated by the lead agency. Information on wetland issues will also be disseminated among the general public as a means of achieving wetlands management objectives. NGOs will play an important role in the process of information exchange. Appropriate means of information dissemination will be employed for the benefit of local communities e.g. posters, video shows etc.

### **Time Frame**

Short to medium-term activity, when priority activities are in place.

### **Implementation Arrangements**

Relationships between stakeholders are the responsibilities of the respective members of the networks. Multi-level interactions will be promoted through the lead agency. Various institutions participating in the wetland management programme will generate data for the wetlands database. Information derived from the database will therefore be shared among all stakeholders, including national and international institutions and individuals.

#### ***8.1.11 Funding Mechanism***

The range of activities designed for implementation under these action plans can only be realised if adequate funding is available. It is accepted that financial support from bilateral, multi-lateral and financial organisations is crucial for the development and implementation of the action plans, but government will ensure that domestic resources are mobilised to supplement foreign contributions.

The following funding strategy will be adopted:

***Mobilize local or domestic financial resources:*** The usual Government strategy is to make budgetary allocation for projects approved by the Ministry responsible for Finance. Respective line ministries and departments will be encouraged to access this mechanism to raise funds for approved projects. Government will make efforts

to ensure prompt release of the approved funds for projects and institute a surcharge system for mobilizing funds.

***Mobilize external financial and technical support:*** Donor funding is a general term used to refer to support from both development assistance agencies and lending institutions/banks. The donor community is considered as participants in the strategy from the inception of the process. Donor participation in the process will be co-ordinated by the lead agency and donor interest and the availability of financial support will not deflect the activities from their planned strategic focus.

***Establish a National Wetlands Trust:*** this will be a publicly constituted Trust which will solicit and manage funds from public and private sources, and make grants to support activities related to wetlands development. The Trust will be managed through a participatory process that will involve different sectors of the Ghanaian society, i.e. government, NGOs, academics, private sector etc. Efforts will be made to seek contributions from the private sector and local communities.

The National Wetland Trust (NWT) mechanism will promote self reliance and local control and will become a core source of funding for the strategy and action plans.

### **Time Frame**

Funding arrangements will be undertaken during the short to medium term to ensure successful implementation of the various approved activities.

### **Implementation Arrangements**

The major contributors to the funding mechanism, including government, private sector and the donor community will be involved in the management of funds.

#### ***8.1.12 International Co-operation***

Knowledge and participation in international approaches and initiatives can strengthen the wetlands management programme in Ghana. Activities will include:

***Strengthen participation in Ramsar Convention and Enforcement of its Protocols:*** Ghana's membership of the Ramsar Convention and other relevant international treaties will be strengthened and effectively utilised.

***Utilise facilities provided by international Organisations:*** Information provided by regional and international institutions will be used in the wetlands programme. Foreign donor grants and technical assistance will be solicited to supplement local resources. The experience and resources of international NGOs will be solicited for the wetlands programme in Ghana.

### **Time Frame**

Long term activity; international co-operation will be maintained for the successful implementation of the wetlands programme.

### **Implementation Arrangements**

Ministries of Finance, Foreign Affairs, Lands and Forestry, Environment Science and Technology, Water Resources Commission and NGOs will be involved in the programme.

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## **9. IMPLEMENTATION OF THE STRATEGY**

In order to attain the objectives of this strategy, the Government of Ghana will formulate an action plan for the implementation six months after the completion of the adoption process.

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### **DEFINITIONS**

- 1. Sustainable utilisation:** The level of resource use that will enable the wetlands to maintain their ability to continue to yield benefits for the present and future generations.
- 2. Wise use:** Sustainable utilisation for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem.
- 3. Wetlands drainage:** Conversion on wetlands into other land use practices that destroy the ecological functions of the wetlands and thus, loss of benefits.



4. **Wetlands benefits:** The services that wetlands provide, e.g., water purification, supplies of portable water, fishes, plants, building materials and water for livestock, outdoor recreation and education.

5. **Wetlands values:** The roles wetlands play in natural ecosystem functioning, e.g., flood attenuation and control, maintenance of underground and surface water supplies, sediment trapping, erosion control, pollution abatement and provision of habitats.