



MANAGING WETLANDS IN ACCRA, GHANA

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Cities, Ecosystems and Biodiversity
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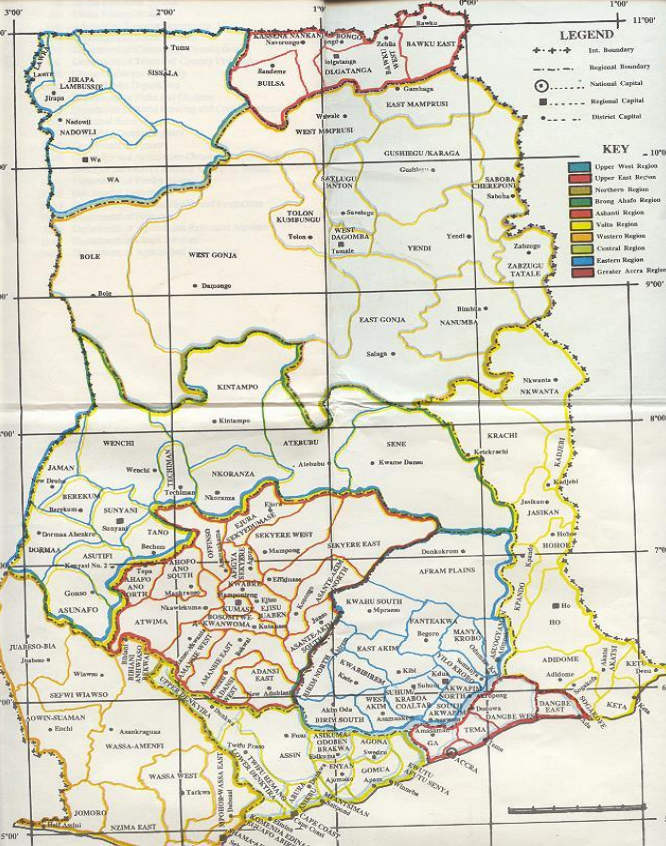
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PRESENTATION OUTLINE

- **Some Basic Facts on Ghana and Accra**
- **Introduction**
- **Importance of Wetlands**
- **Wetlands in Accra**
- **Why Pressure on Accra's Wetlands?**
- **Threats and Challenges to Wetland Management**
- **Policy Response and Strategies**
- **Lessons Learnt and Recommendations**
- **Conclusion**

SOME BASIC FACTS ON GHANA AND ACCRA



- Ghana has a total land area of 23.9 million ha.
- Urban Population - 8,274 million
- Rural Population - 10,637 million
- The City of Accra lies within the coastal plains of Ghana, 80 km west of the Volta River.
- It covers a total land area of 2,054 Km², comprising the whole AMA (1,520 Km²).
- About 64% of Accra's total urban land (i.e. 26,350 ha.) or 68% of the built uses was estimated to be under residential use in 1990.
- With an assumed population growth rate of 4.4% per annum, and an average gross residential density of 80 persons per hectare, it has been projected that an extra 15,600 ha. will be needed for residential purposes by 2010.

View of part of Accra





INTRODUCTION

The Wetlands of Ghana form an ecologically valuable resource providing feeding, roosting and nesting sites for thousands of migratory and resident birds; marine turtles; many species of fish; plant genetic materials for research; and a major source of income for especially poor communities.

The wetland ecosystems are distributed over the entire country and constitute about ten percent of the country's total land surface. More than fifty lagoons and estuaries mark Ghana's 550 km. coastline.



IMPORTANCE OF WETLANDS

- **Water Purification**

Wetlands remove sediments, nutrients, toxic substances and other pollutants in surface run-off. Thereby improving the quality of water.

- **Micro-climate Stabilisation**

Wetlands vegetation may also evaporate or transpire much of the water into the atmosphere and help to maintain stable climatic conditions.

- **The Wetland as a Habitat**

Wetlands provide habitat for high concentrations of birds, mammals, reptiles, amphibians fish and invertebrates species.



Importance of Wetlands (Con't)

- **Maintenance of the water table**

Wetlands facilitate the movement of large volumes of water into the underground aquifer resulting in the recharge of the water table.

- **Flood and Erosion Prevention**

Wetlands prevent surface run-off from moving swiftly downstream and overflowing. Thus they prevent erosion and flood conditions

- **Storm Protection**

Wetlands such as mangroves and other forested coastal areas act as wind-breaks and help to dissipate the forces and impact of coastal storm surges.



TYPES OF WETLANDS IN GHANA

- **MARINE/COASTAL** - 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.
- **INLAND WETLAND** - 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.
- **MAN-MADE** - These are wetlands constructed for aquaculture, agriculture, salt exploitation, and water storage and urban/industrial purposes.

MAJOR COASTAL WETLANDS IN ACCRA

Sakumo Wetlands



▪ The Sakumo Ramsar wetland is situated north of the coastal road between the cities of Accra and Tema, approximately 3 km from Tema township. The wetland comprises an open lagoon, a floodplain (7 km²) and a freshwater marsh. The lagoon is separated from the sea by a narrow sand dune on which the Accra – Tema road is built. The Sakumo wetland is the third most important site for shorebirds on the Ghana coast.

Korle Lagoon



▪ The Korle Lagoon Wetlands with surface area of about 595,000m² is the major drainage basin into which the greater proportion of floodwaters of the Accra Metropolis flow before entering the sea. It receives discharges from the river Odaw, Onyasia and Nima streams and tributaries.

Densu Delta Lagoon



▪ The Densu Delta Lagoon and salt pans complex is located 11 Km. West of Accra. The wetland comprises sand dunes, open lagoon, salt pans, marsh and scrubs, which provide extensive suitable feeding, roosting and nesting grounds for seashore birds.

Why Pressure on Accra's Wetlands?



1. **Recreation/Tourism** These include bird watching, game-viewing, fishing and swimming.
2. **Agricultural Resources** such as plant genetic materials
3. **Plant Products** harvested for fuelwood, timber, mats, baskets and thatching material.
4. **Fishing** - Many local communities depend on the harvest of fish in such wetlands for their livelihood.
5. **Source of Water Supply**
6. **Urban Agriculture**
7. **Salt Production**
8. **Sand and Gravel winning**





THREATS TO WETLANDS IN ACCRA

The wetlands in Accra are threatened mainly by human and natural factors. Existing literature reveals that in Ghana, urbanization, high population growth, fuel wood gathering, salt and sand winning are among the major factors threatening mangrove and wetland ecosystems along the coast. These threats include:

- Rapid Conversion of wetlands for Housing Development
- Development of slums
- Mining, land and soil degradation
- Sanitation and Water Pollution

1. Conversion of Wetlands for Housing Development



- ◆ Rapid conversion of wetlands and agricultural lands for housing development and excessive urban sprawl and its associated problems of inefficient use of land.



- ◆ Annual Flooding of houses and destruction of life and property.

2. Urban Space and development of Shanty Towns/ Slums



◆ Low-income populations building on marginal and wetlands with its associated public health risks - such as diarrhoea, cholera, guinea worm and hook worm malaria. (e.g. Sodom and Gomorrah)



3. Mining, Land and Soil Degradation



- When wetland soils are exposed due to mining or the destruction of their vegetation, sulphides in the original soils are converted into sulphuric acid leading to acidification

- Deforestation resulting in increased surface run-off and sediment load of water that flow into wetlands.



4. Sanitation and Water 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 biochemical oxygen demand (BOD) of the water body, leading to inadequate oxygen supply to support plant and animal life.



The discharge of the various forms of wastes into the water bodies create two major environmental health problems. First, they create a fertile environment for microbiological and biological agents to flourish and allow the spread of disease pathogens. Secondly, the chemical constituents in the waste create various health problems for humans and aquatic organisms.



POLICY RESPONSE AND STRATEGIES

- ◆ Wetlands Policy, Institutions, and Legal Framework
- ◆ Coastal Wetlands Management Plans
- ◆ Coastal Zone Management and Land use Planning
- ◆ Projects and Programmes
- ◆ EIA as Tool for Wetland Management
- ◆ Coastal Sensitivity Mapping
- ◆ Environmental Awareness Program
- ◆ Greenbelt Proposal for Accra

Wetlands Policy, Institutions and Legal Framework

- The Wetlands Policy of Ghana (1999) recognises that wetlands are an important component of country's natural resources and aims at ensuring their wise use for the benefit of the country and its people, present and future. The objectives of the policy are specifically:
 1. to promote sound management and sustainable utilization of Ghana's wetlands
 2. to maintain the ecological and life-support functions of wetlands
 3. to ensure that national policies, local knowledge, regulations and activities contribute to the wise use and sound management of Ghana's wetland resources through capacity building, appropriate legal and institutional framework, and
 4. to ensure that the people of Ghana are aware of the importance of wetlands and committed to their conservation.



Policy, Legal and Institutional Framework

- Other policies, which have been enacted into laws and have implications for wetland usage include: Fisheries Law, Environmental Policy, Wildlife & Forestry Policy, and the Land Policy.
- Ghana has also ratified a number of international agreements and participates in regional programmes (WACAF) with the view to supporting her coastal and marine resources. (e.g. RAMSAR Convention (1988))
- National institutions have been set up to regulate and generally manage wetlands. (e.g. Environmental Protection Agency (EPA), District, Municipal and Metropolitan Assemblies, Ministry of Food and Agriculture, Forestry Department, Council for Scientific and Industrial Research (CSIR) as well as NGOs.



Coastal Wetlands Management Plans

- Ghana has prepared (1991) a Coastal Wetlands Management Plan. The plan is aimed at establishing and managing five Ramsar sites along the coast and the CWMP also creating awareness on wetlands management to traditional authorities, communities and individuals.



Programmes and Projects

- Ghana has undertaken a number of projects, which have had bearing on wetlands. These include:
- Korle Lagoon Ecological Restoration Project
- Survey of urban birds in the Accra metropolis as a tool for urban development and planning (Ghana Wildlife Society, (2002)
- 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.
- The Lower Volta Mangrove Project (LVMP) funded by DFID investigated in detail the problems related to excessive exploitation of mangroves.
- The Natural Resource Management Project had the primary objective of establishing the institutional and operational framework within the public and private sectors for sustainable and participatory management of natural resources

EIA as a Tool for Wetland Management



It is a legal requirement in Ghana that all development proposals be subjected to EIA before implementation. EIA was applied to the Tema Sewerage Treatment Plant and the EPA advised strongly against the channelling of the treated effluent into the Sakumo Ramsar site. GEF assisted the Tema Municipal Assembly to rechannel the effluent into a sea outfall. The plant has been out of order for some time now.



Environmental Sensibility Mapping for Coastal Areas

Ghana has prepared Environmental Sensibility Maps for her coastal areas supported by UNDP, with financial assistance from the Fund for Danish Consultancy Services administered by UNOPS.

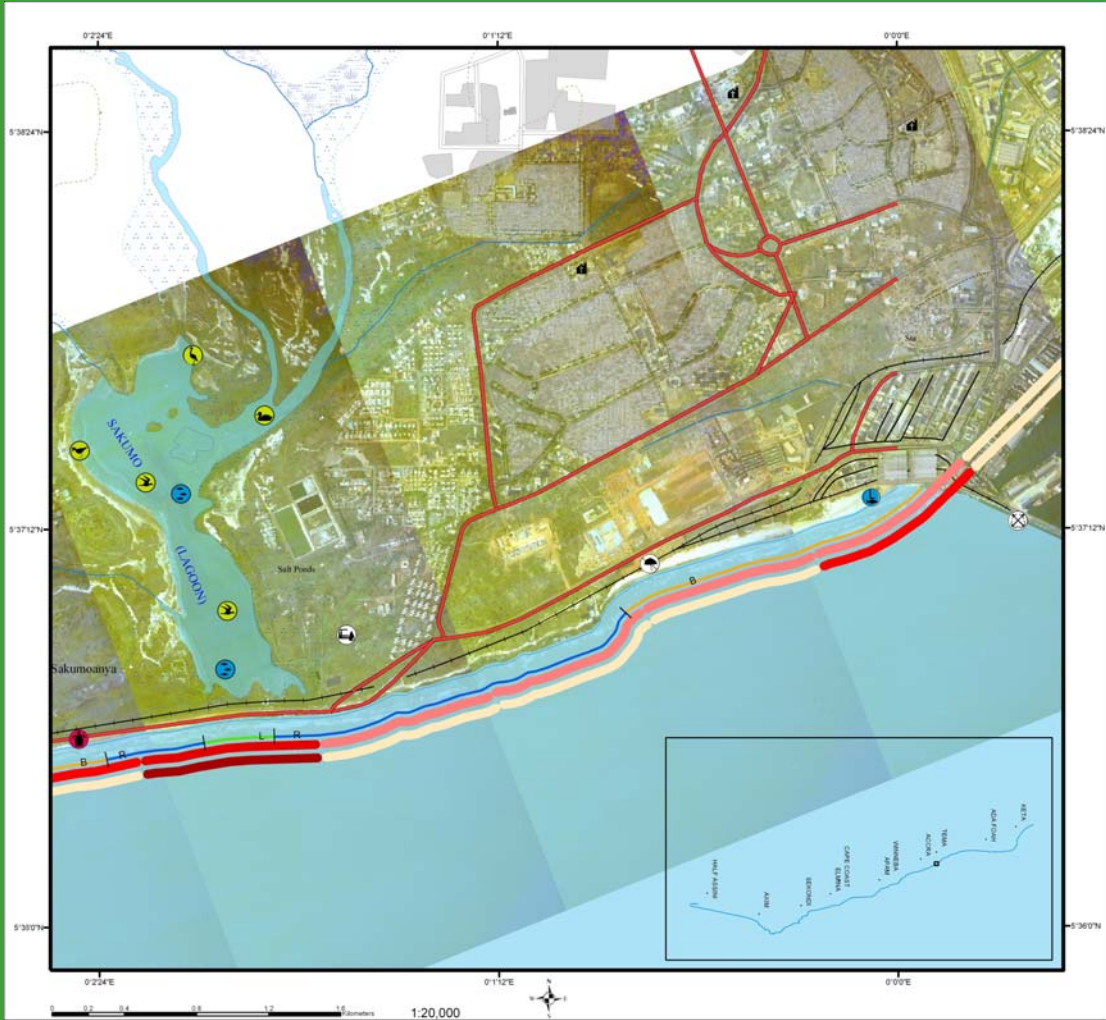
The aim of the project is:

- i) to develop a GIS based environmental planning tool for coastal zone management, I
- ii) to develop a management tool for use in planning and implementation of oil spill response, and
- iii) to train the EPA staff in operating the GIS system

Legend

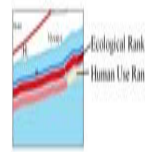
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|-----------------------------|-----------------------------------|--------------------------------------|-------------------------------------|
| Landing Sites | Other Human Use Activities | Birds | Coast type |
| No. canoes | Industrial water intake | Poisoning birds | Sandy beaches |
| 0-9 | Power generation | Waterfowl | Mouth at open or semi closed lagoon |
| 10-29 | Mangrove | Waders | Rocky shores |
| 30-49 | Ports/Harbours | Shorebirds | |
| 50-100 | Boat Ramp | Bird of Prey | |
| 101+ | Navy | Pelagic birds | |
| Beach Seine | Domestic Water Intake | Gulls and Terns | |
| No. nets | Swamp Farming | Diving Birds | |
| 0-5 | Jetties | Fish and shrimps | |
| 6-1 | | Spawning areas | |
| Aquaculture | Land use | Nursery areas | |
| Aquaculture | Salt Ponds | | |
| Fish traps | Houses and buildings | Reptiles and lizards | |
| Fish traps | City and villages | Crocodiles | |
| Tourism | Sand Mud flat | Turtles | |
| Public bathing beach | Mangrove | Lizards | |
| Eco-tourism | Marsh | Mammals | |
| Water sports | Lake/Lagoon | Manatees | |
| Camping | Island | Dolphins | |
| Recreational fishing | Flooded areas | Big Whales | |
| Harbour Waterfront | Transport lines | National Protected Sites | |
| No. Boats | Ferry | Forest Reserve | |
| >20 | Railways | Game Production Reserve | |
| >30 | Road, Motable all year | Forest Reserve | |
| | Road, Occasionally closed | Game Production Reserve | |
| | Road, In dry season only | International Protected Sites | |
| Historical monuments | Siding | Ramsar Site | |
| | Track | Ramsar Area | |
| Cultural Points | Trail | | |
| Church | Airstrip | | |
| Hospital | Rivers | | |
| Mosque | | | |

Coastal Sensibility Maps of the Korle Lagoon Wetland areas, Accra

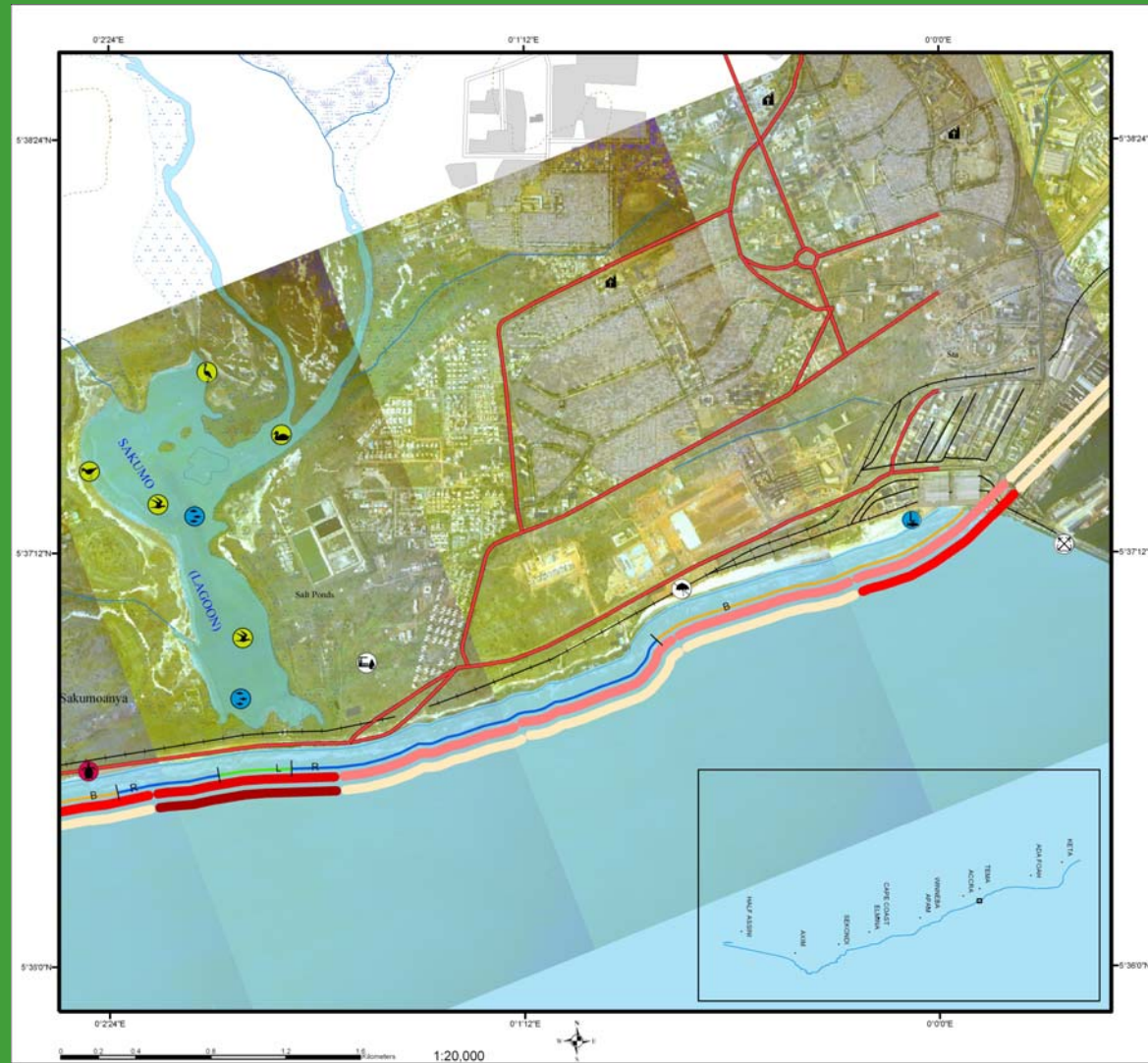


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Coastal Sensibility Maps of the Sakumo RAMSAR Site



Coastal Sensibility Maps of the Densu Delta Wetlands Areas

Legend





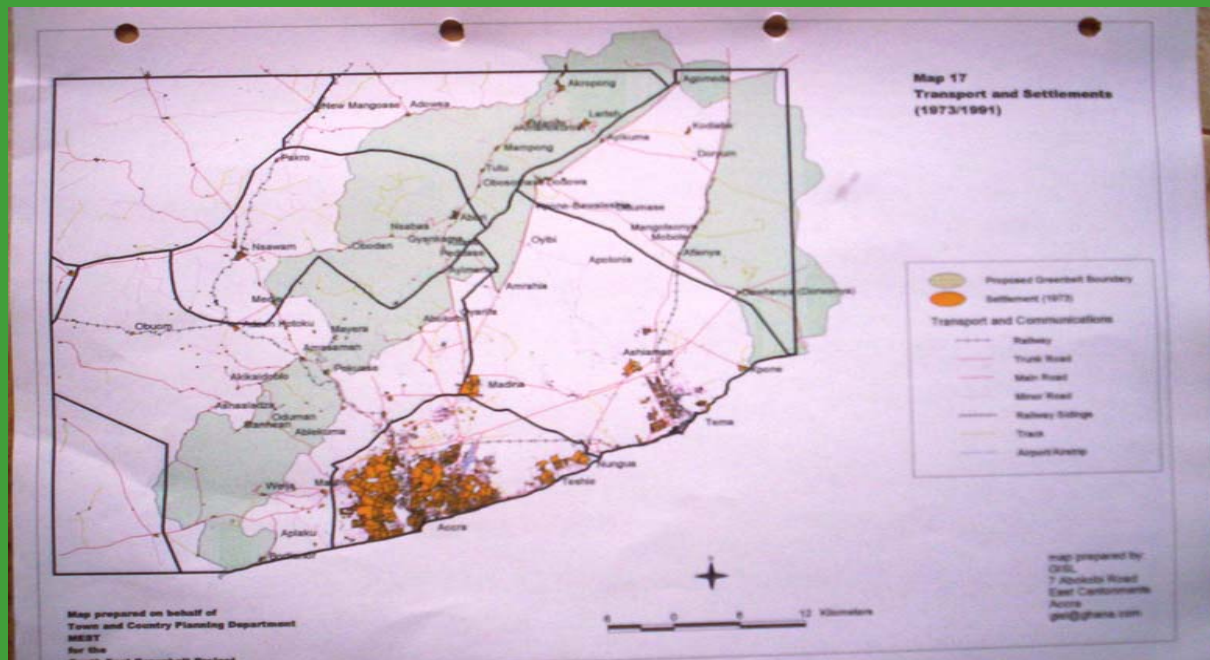
Traditional Management Practices

- A strong traditional base for protection of wetlands through indigenous management systems exists in Ghana. Most wetlands and their resources have been 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. Many wetlands have cultural and heritage value. Sakumo lagoon, for instance is regarded as the abode of "gods". They are therefore revered and protected through various traditional practices aimed at maintaining and preserving them.

Greenbelt Proposal for Accra

To serve as an environmental area in which planning, environmental, socio-economic and other relevant issues are addressed for long-term solutions.

- To impose a barrier consisting of selected physical features reinforced by planning controls to check the outward sprawl of the Accra-Tema conurbation.
- To ensure that land use within the green belt is consistent with the maintenance of a predominantly rural landscape, and the conservation of soils, water sources, vegetation and scenic and historical areas.





CONCLUSION

Wetlands ecosystems are complex but valuable assets in every nation. To be able to manage them effectively and efficiently requires the understanding of the dynamics of human and environmental parameters at play. The success of any wetlands management programmes will depend on the involvement of communities whose life styles are interlinked with the wetlands and whose activities directly affect the wetland ecosystem. Protection of wetlands should therefore be “for” the people and not “against” them.

Thank You

