



This project is funded  
by the European Union



**“reflecting the values of ecosystem  
& Biodiversity” - the Liberian experience**  
**TEEB LIBERIA Project**

**TEEB Workshop in Cancun/Mexico**  
**On 6<sup>th</sup> December 2016**



***LATE CBD FOCAL POINT –“JD”  
Ecosystems and Biodiversity g Policy and  
Management Reviews of Mangroves in  
Liberia***



This project is funded  
by the European Union



## **PRESENTATION CONTENTS**

**(A) BACKGROUND/LIBERIA**

**(C) THE TEEB STUDY**

**(D) RESULTS AND DISCUSSIONS**

**(E) DEVELOPMENT OF SCENARIOS**

**(F) NEXT STUDY PHASE (BIOPHYSICAL)**

**(G) CONCLUSION**

# BACKGROUND

- Liberia Landscape
- flat rolling coastal plains running into interior plateaus, and mountains in the north-eastern, northern and north-western parts of the country.
- Ecosystems & biodiversity
- Liberia lies in Upper Guinea Rainforest in western Africa
- Major ecosystems : Wetlands (Coastal/marine & inland), terrestrial forest, mountain, dry (savannah woodland) and agriculture..
- Liberia is diverse with high rates of fauna and flora endemism (including over 2,000 plant species, 193 mammal species 38 amphibian species , 67 reptile species, 590 bird species, several species of fish, mollusks and ants) some of which are threatened.



This project is funded  
by the European Union



## BACKGROUND: SCOPING WORKSHOP-MONROVIA

- UNEP fielded a mission to Liberia in June, 2014 to conduct a two-day stakeholder workshop.
- Liberian stakeholders agreed that TEEB Liberia should focus on Mangrove ecosystem for number of reasons;
- mangroves provide ecosystem functions and services to local communities such as shoreline stability in the face of sea level rise cause by climate change;
- mangrove serve as sponging ground for fish which is the major source of protein for more than 60% of the 4 million population of Liberia;
- Stakeholders agreed continuous degradation of mangrove ecosystem will have direct & indirect impacts on local communities livelihood activities;
- The fisheries subsector contributes 3.2% to GDP and 12% of Agriculture GDP and 1.5 million people who live in coastal communities principal source of protein is the fisheries subsector (FAO 2007) ;



This project is funded  
by the European Union



# TEEB LIBERIA

This study is clustered in three phases:

- Activity A, **Scoping exercise which includes assessment and scenario development.**
- Activity B, **Biophysical study that consider various mangrove species and other characteristics of mangroves; ,**
- Activity C, **third Development** of scenarios based on data collected from the first two phases and may inform the development of future actions on marine ecosystems specifically mangroves.



This project is funded  
by the European Union



## Policy Consideration

- The Environmental Policy of Liberia provides the policy direction for sustainable mangroves and wetland management;
- Environmental Protection and Management Law provides Section 2 75-82 provide legal basis for the EPA to take actions to protect this vital ecosystems like Mangrove;



This project is funded  
by the European Union



## GIS MAP OF STUDY AREAS





This project is funded  
by the European Union



## STAKEHOLDERERS

- By law, EPA, FDA, LMA, MOA, MIA
- Local coastal/fishing communities
- Local, national and international NGOs( CI, FFI);



This project is funded  
by the European Union



## METHODOLOGY OF SCOPING

- Desk review of sectoral policy & legal instruments & management regimes in place for management;
- Profile each of the five pre-selected sites;
- Hold discussion with local authorities ( counties superintendents, district commissioners, chiefs) to get their political buy-in;
- Engage local community people to share their experiences with the study team on what they know about traditional/customary codes for mangroves management ;
- Document land use practices and livelihood activities; Document mangrove species found in particular site and it associated fauna and flora species;
- Test soil and water quality

## Methodology cont.

- Determining the extent of mangrove forests in study areas;
- Determining extent of human pressure on mangrove forests;
- Document existing land-use practices & livelihood activities;
-

# FINDINGS OF SCOPING STUDY

- The study reveals there large exist mangrove forest in coastal Liberia and locals regard as economic and cultural assets;
- There little evident exist of any governance and management regime in place;
- The study further revealed little effort has been made to provide alternative livelihood options to local people;
- That carving of a robust governance structure and management regime with all of the policy and management instruments in place with the full participation of local people will lead to sustainable management of mangrove forests in the study areas;

# STUDY IDENTIFIED MANGROVE SPECIES & IT ASSOCIATED FAUNA AND FLORA SPECIES

- *Avicenia germinans* ,
- *Rhizophora racemosa*,
- *Conocarpus erectus*,
- *Acrostichum aureum* (Golden Leather Fern ), mangroves grabs,
- mollusks (Gatropoda species),
- *Periophthalmus barbarus* (Muskipper).

# Scenario options to Address SITUATION

- Scenario A: Business As Usual assuming further degradation of mangroves;
- Scenario B: Community based natural resource management of mangroves, with 'moderate' access (to be defined), based on the following activities:
  - Identify areas important for protection vis-à-vis reducing shoreline erosion and/or the impacts of flooding;
  - Identify areas that may be suitable for mangrove restoration ; especially around villages;
  - Identify areas that may be included in a scheme for sustainable use of mangroves (timber).

- Identify suitable areas and methodologies for establishing community timber plantations as alternative for harvesting mangroves;
- Identify alternative livelihood options, as benefits from the ecosystem services provided by mangroves. Alternative livelihood options may include ecotourism, apiculture (beekeeping), and aquaculture (fish breeding ponds).
- Identify options for a levy system on fishery activity with adequate benefit sharing for local communities.
- Identify options for a levy system on fishery activity with adequate benefit sharing for local communities.

- Scenario C: Marine Protected Areas (MPA) with 'highly restricted' access (to be defined). This is a no-use mangrove conservation scenario, including an assessment of the impacts of international fishing boats on coastal fish stocks (and potential impacts on coral reefs from bottom trawlers).





This project is funded  
by the European Union



## PHASE II: BIOPHYSICAL & ANALYSIS

- The biophysical phase include socio-economic survey targeted sites;
- The methodology has been developed;
- Implementation to start after COP;



This project is funded  
by the European Union



## BIOPHYSICAL STUDY

- Data collection methodology;
- Development of plot design;
- Each of the sites is considered as a block;
- Three plots are contained in a block;
- A plot size : 10m x 10m;
- Development of templates for recording data;



This project is funded  
by the European Union



## BIOPHYSICAL STUDY

Data to be collected:

- Soil Quality
- Water quality
- Plant growth characteristics ( height and diameter.....);
- Describe mangrove habitat around the plot as far as possible;
- Identify and describe mangrove associated fauna and flora species inside blocks and plots;
- Testing of methodology in a training environment before applying it;



This project is funded  
by the European Union



## SOCIO-ECONOMIC (SE) STUDY

The SE study and biophysical study will be done simultaneously using the following:

- Focus Group Discussion (FGD);
- Key informant Interviews (KII);



Big  
thanks for  
your  
attention.  
Bye bye.