

# Exploring Linkages between Ecosystem Accounting and NDCs in Liberia

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**Miroslav Honzák, Kyrssa Kasprzyk, Maggie Comstock, Rosimeiry Portela, Mahbubul Alam, Timothy Wright, Trond Larsen and Daniel Juhn**





# Contents

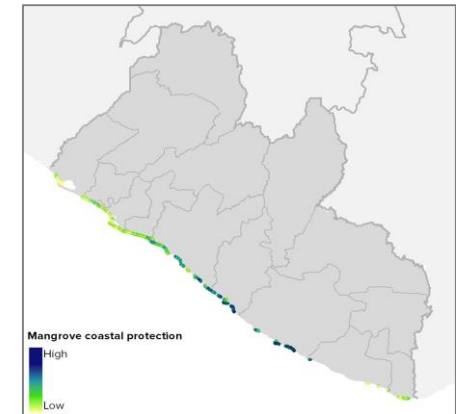
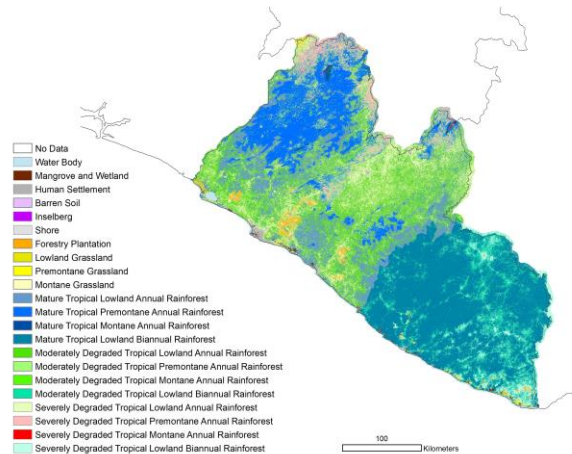
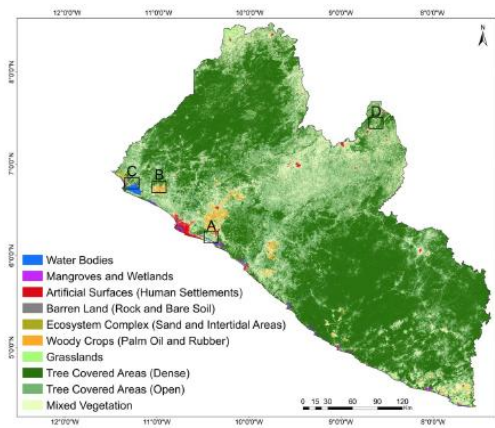
- Ecosystem accounting in Liberia
- How can ecosystem accounting contribute to Liberia's ability to design and implement NDCs?
- Opportunity at the global level



# Liberia



# Implementing ecosystem accounting in Liberia



Land Account



Ecosystem Extent  
Account



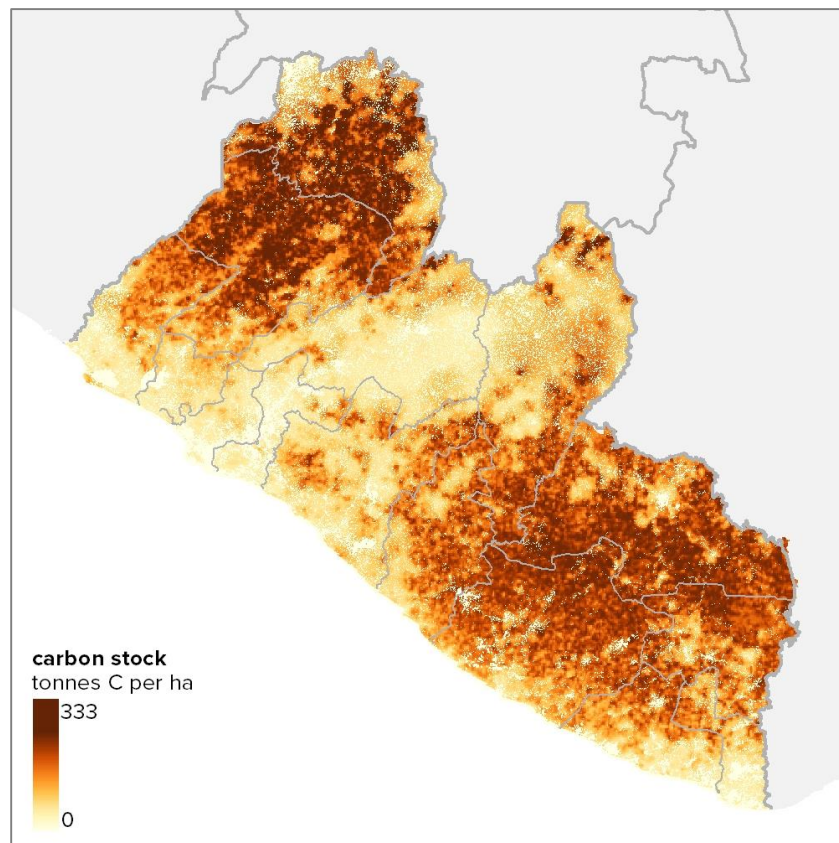
Ecosystem Services  
Account  
(GEF-NCA Mangroves  
Project)



# Policy applications of ecosystem accounting in Liberia

Revision of Liberia's Initial NDCs:

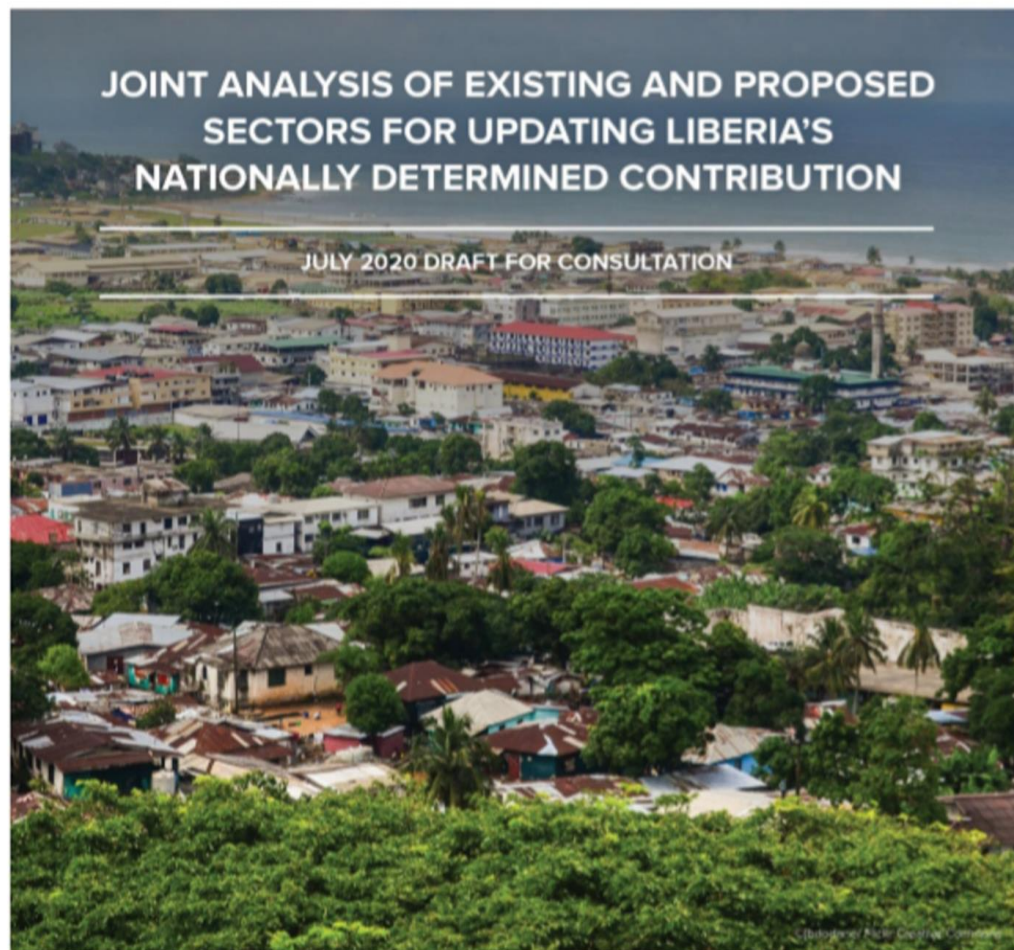
- Measuring sectoral contributions of CO<sub>2</sub> emission and sequestration
- Supporting design, planning and monitoring of NDC targets, activities and indicators
- Measuring co-benefits and human wellbeing



Avitabile et al. 2016  
Global Change Biology 22:1406–1420



# Revision of NDCs in Liberia



CONSERVATION  
INTERNATIONAL



EU-LIBERIA CLIMATE CHANGE ALLIANCE+  
LONG TERM TECHNICAL ASSISTANCE TO  
THE EPA OF LIBERIA



Empowerment here.  
Abundant nations.



# Sectors considered

ENERGY	7 AFFORDABLE AND CLEAN ENERGY	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	15 LIFE ON LAND
WASTE	6 CLEAN WATER AND SANITATION	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
TRANSPORT/ INFRASTRUCTURE	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	11 SUSTAINABLE CITIES AND COMMUNITIES	13 CLIMATE ACTION	15 LIFE ON LAND
SHORT-LIVED CLIMATE POLLUTANTS	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	13 CLIMATE ACTION
AGRICULTURE	2 ZERO HUNGER	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	15 LIFE ON LAND
FORESTS	2 ZERO HUNGER	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	15 LIFE ON LAND
GREEN CORRIDORS	6 CLEAN WATER AND SANITATION	11 SUSTAINABLE CITIES AND COMMUNITIES	13 CLIMATE ACTION	15 LIFE ON LAND
COASTAL ZONES	6 CLEAN WATER AND SANITATION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND
FISHERIES	2 ZERO HUNGER	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER
HEALTH	3 GOOD HEALTH AND WELL-BEING	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	13 CLIMATE ACTION



# Linkages identified between ecosystem accounting and NDCs in Liberia

Sector	No. Linkages
Energy	3
Transportation	2
Agriculture	3
Forests	3
Coastal	3
Fisheries	2
Health	1





# Linkages identified in Liberia: Energy sector

## NDCs

- Household energy use is dominated (>90%) by biomass energy, i.e., burning of firewood and charcoal
- Conserving water catchments for production of hydropower

## Ecosystem Accounting

- Monitoring and evaluation of firewood and charcoal production
- Monitoring degradation of ecosystems used as source of firewood and charcoal production
- Locating suitable degraded areas for energy plantation schemes
- Targeting areas for conservation and restoration to reduce sedimentation upstream of hydropower production



# Linkages identified in Liberia: Transportation

## NDCs

- Target is to use 5% of biofuel for transportation
- Using green infrastructure to protect coastal highways and communities

## Ecosystem Accounting

- Locating suitable degraded areas for energy plantation schemes
- Identifying existing green infrastructure providing protection and vulnerable areas for green-grey infrastructure development



# Linkages identified in Liberia: Coastal

## NDCs

- Monitoring GHG emissions of coastal zones
- Mangrove protection and value of mangroves related co-benefits and adaptation

## Ecosystem Accounting

- Quantifying and valuing the importance of mangroves in the provisioning of long-term storm protection, erosion control
- Estimating adaptation co-benefits
- Spatial planning and restoration for climate resilience





# Conclusions and next steps

- Ecosystem accounting is an effective vehicle for planning, implementing and monitoring natural climate solutions
- Ecosystem accounting is applicable to NDCs for many sectors In Liberia, e.g., energy, transportation, forests, agriculture, coastal, fisheries, health
- Core, standardized structure of ecosystem accounting makes it applicable to development and implementation of NDCs in many other countries
- Potential avenues to harmonize accounting data with other efforts monitoring GHG emissions, e.g., UNFCCC, CLRTAP, SDG
- Next step: Finish the work and provide the results to the Government of Liberia by the end of March 2021





**THANK YOU!**

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**CONSERVATION  
INTERNATIONAL**





# Linkages identified in Liberia: Forests

## **NDCs**

- Protection of forest and biodiversity
- Reforestation and forest restoration
- Increase awareness in forest conservation

## **Ecosystem Accounting**

- Assessing degradation to guide restoration efforts
- Assessing co-benefits and alternative livelihoods, such as non-timber forest products and bushmeat
- Monitoring carbon emissions and sequestration from climate change thematic accounts





# Linkages identified in Liberia: Agriculture

## NDCs

- Intercropping, irrigation and the optimization of lowland/swamp farming
- Climate resilient crop, agroforestry and livestock production systems

## Ecosystem Accounting

- Prioritizing sites for agriculture and optimizing trade-offs
- Enhancing natural capital in agricultural/agroforestry landscapes
- Spatial planning and restoration for climate resilience



# Linkages identified in Liberia: Fisheries

## NDCs

- Role of mangroves as nursery service for fisheries sector
- GHG emissions from clearing mangrove and burning mangrove to smoke fish

## Ecosystem Accounting

- Biodiversity field surveys for the can provide the information necessary for estimating role of mangroves conservation for fisheries sector
- Household survey data on firewood use from mangroves for smoking fish



# Linkages identified in Liberia: Health

## **NDCs**

- Lack of indicators and causes of poor health

## **Ecosystem Accounting**

- Household surveys can ask questions about health and identify potential drivers





# What are NDCs?

- Nationally Determined Contributions (NDCs) are the main vehicle created under the Paris Agreement for countries to define national goals, policies and finance strategies to contribute to global climate efforts, regularly updated over five-year intervals.
- NDCs primarily cover national mitigation targets, but many countries chose to include adaptation, resilience and financial priorities, and to use their NDCs to define their climate change policy commitments more broadly.
- The first Intended Nationally Determined Contributions (INDCs) were submitted in 2015, and these were converted into NDCs as countries joined the Paris Agreement. Now, countries are preparing updates to their NDCs, as new guidance has been agreed upon and implementation of the Agreement begins.



# How important is nature for climate regulation?

 -30%

NATURE IS AN  
ESSENTIAL PART OF  
OUR RESPONSE TO  
CLIMATE CHANGE







YET, NATURE IS  
UNDERVALUED AND  
UNDERREPRESENTED  
IN GLOBAL CLIMATE  
ACTION





# NATURAL CLIMATE SOLUTIONS

HARNESS ECOSYSTEMS AND THEIR SERVICES  
TO REDUCE GHG EMISSIONS AND  
CONSERVE/ENHANCE NATURAL  
CARBON SINKS



SECURING  
INTACT HIGH-  
CARBON  
ECOSYSTEMS



AVOIDED  
DEFOREST  
ATION



RESTORAT  
ION



SUSTAIN  
ABLE  
AGRICUL  
TURE