

The MANCOGA Project – co-designing NbS using mangroves against coastal hazards in Ghana

MANCOGA

Mangroves as Nature-based Solutions to Coastal Hazards in Eastern Ghana

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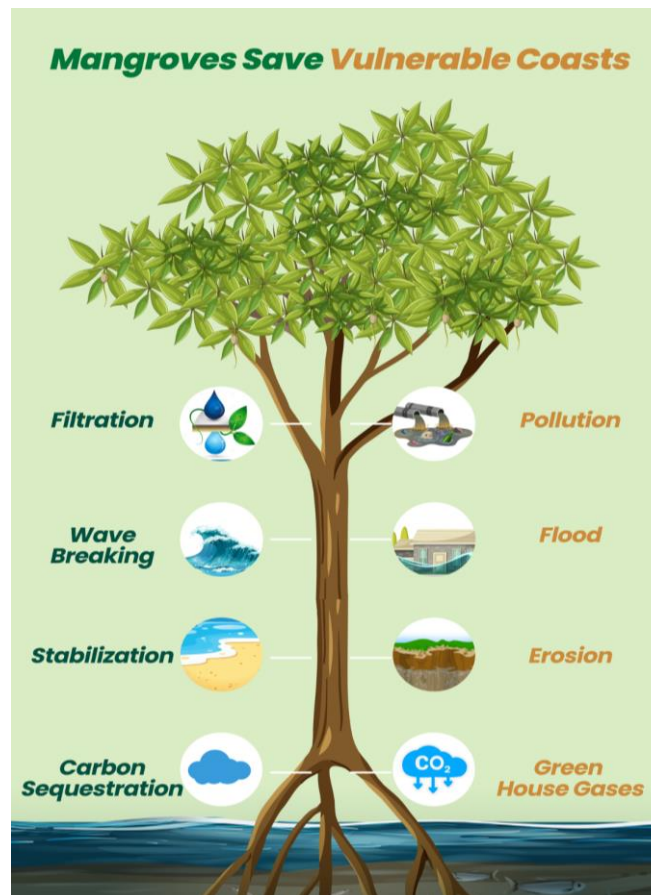


MANCOGA – the WHY Project Background

Ghana's coastal hazards



We believe that



But

- **lack of data,**
 - **insufficient communication structures between stakeholders and**
 - **missing pathways to informed decisions with sustained impact**
- hamper managing and improving these issues

MANCOGA – the WHAT

Scope and Objectives



Collect **data** on

- climate change,
- flooding,
- coastal erosion,
- pollution,
- ocean acidification,
- biodiversity loss
- Blue Carbon

What else?

Create model / scenario
data

Restore healthy mangrove systems

Identify economic opportunities & risks

Policy formulation and implementation

Identify suitable restoration sites

Promote alternative livelihoods

Build **connections** between

- community leaders,
- politicians,
- administrators,
- technocrats,
- neutral media,
- civil society,
- NGOs

Who else?

Facilitate **decisions** on

- mitigation options
- policy reforms

Which else?

Stakeholder dialog!

MANCOGA – the HOW

Measure: Digital Twin for Coastal NbS

Questions

Can we reconstruct local mangroves to reduce

- wave action,
- coastal erosion,
- coastal flooding,
- ...



Problem and Solution to be tested

Problem:
Ghanaian coast flooding and coastal erosion

Solution:
Coastal Mangroves: potential NbS for coastal protection

Digital Twin Modelling framework

Wind-wave model with vegetation

Hydrodynamic model
Coastal erosion model

Calibration/ Validation with local observations

What if scenarios

wave action reduction by mangroves?

Mangrove's role in climate change, extreme events, human/pollution impact?

MANCOGA – the HOW

Measure: Digital Toolbox

for intuitive use of archived & new data

Different sources

cleanup

Meta data

merging data

manual input

summary & visualization

export

common	.xlsx
data	.csv
output	.dat
files	.ncdf

knowledge-based

decision-making

open source

promote & share

sustain usability

Icons from flaticon.com

MANCOGA – the HOW

Co-Design and the Stakeholder Process



Community input

- 3 stakeholder workshops
- virtual collaboration tool
- social media groups

some outcome

Field survey

- mangrove exploitation
- eroding coastline
- ❖ with local stakeholders

- shifted priorities – e.g., erosion is biggest issue, other mangrove services rather “nice to have”
- alternative livelihoods very important – must involve multiple disciplines & stakeholder classes
- credibility in community work is imperative – local acceptability of any NbS must be assessed
- strong sense of community – slogan „MANCOGA, Mia tɔe!” means „MANCOGA, our own!”



Thanks for your attention and connect with MANCOGA online!!!

 @mancoga

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