Climate Rationale in GCF Water Projects

Experiences from Enhancing the Climate Science Basis of GCF Funded Activities National Workshops in St. Lucia, DRC and Cabo Verde

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WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

Outline

- Background- Climate Science Basis for Action
- Guiding steps to assemble the climate science basis and key tools
- Two examples from the water sector
- Achievements to date

WMO-GCF partnership- Enhancing the climate science basis

Indicators (past/ present & future)

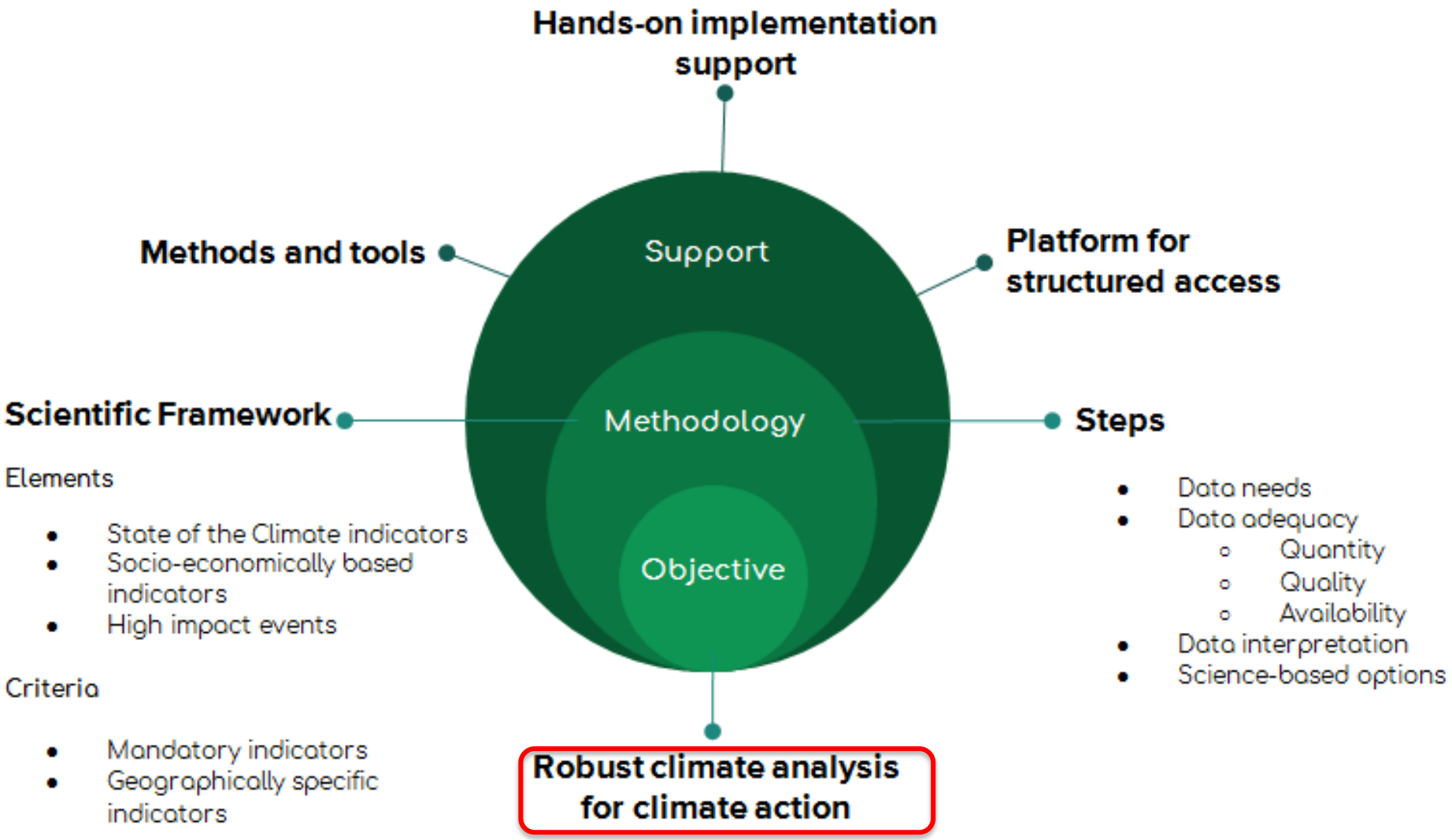
Implementation support

- **State of the Climate indicators**
  example: temperature
- **Socioeconomically relevant indices**
  example: soil moisture
- **High impact events**
  example: drought, flood

Data sets

Methods and tools

Technical resources for enhancing the climate science basis



Elements

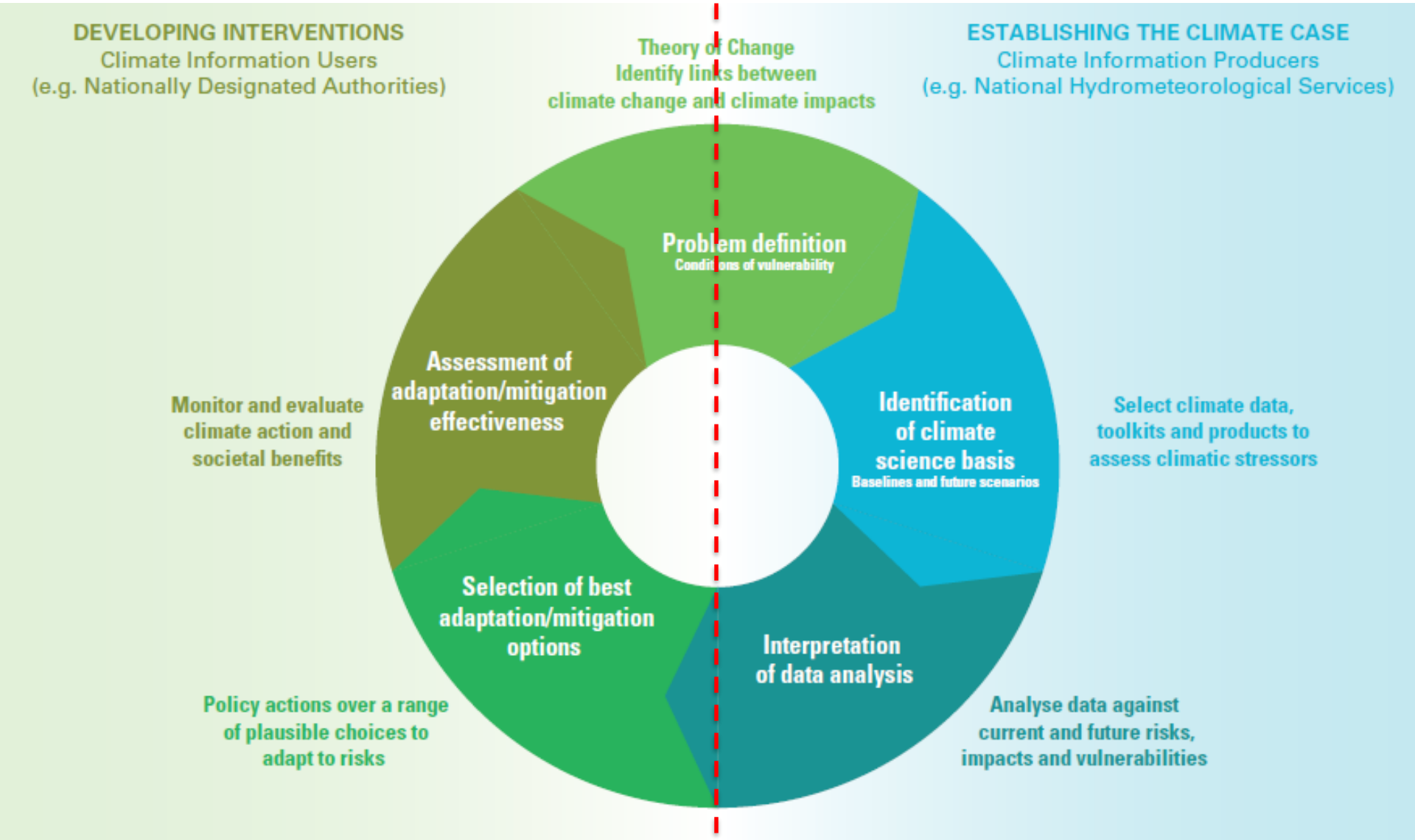
- State of the Climate indicators
- Socio-economically based indicators
- High impact events

Criteria

- Mandatory indicators
- Geographically specific indicators

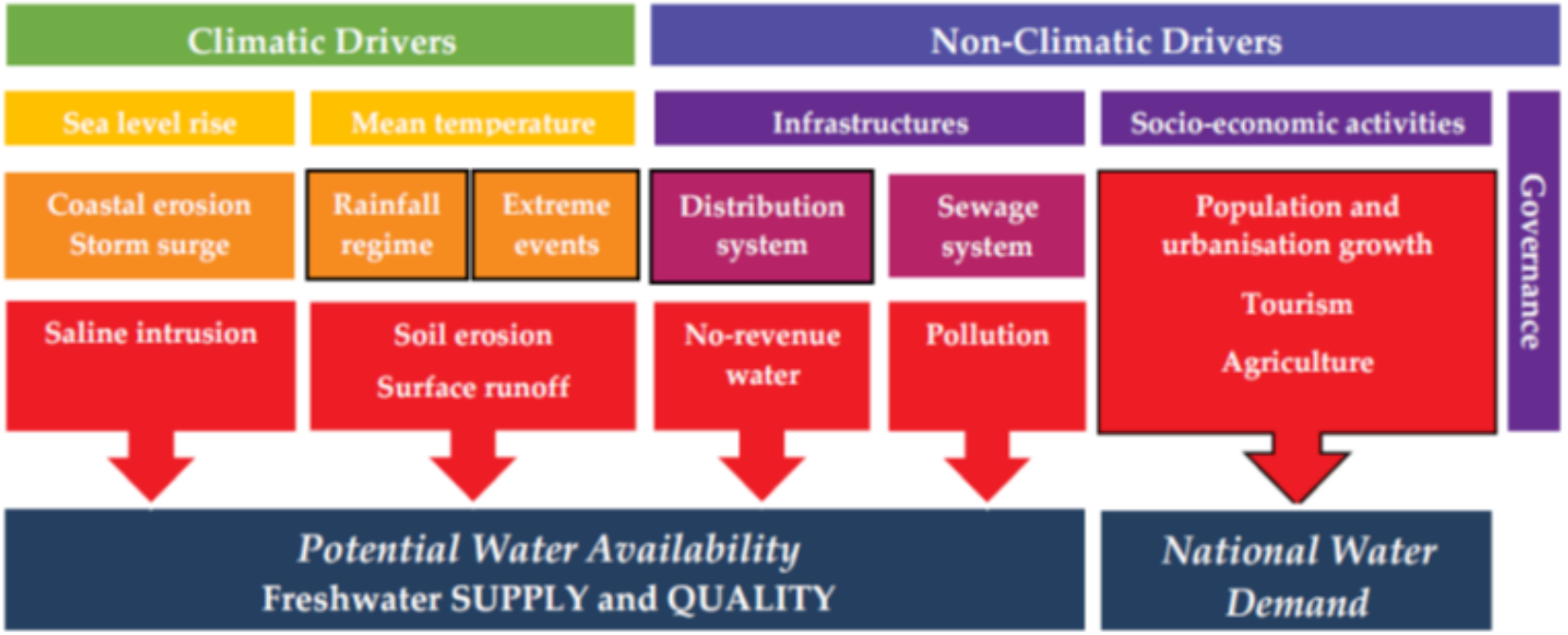
- Data needs
- Data adequacy
  - Quantity
  - Quality
  - Availability
- Data interpretation
- Science-based options

Climate action ← climate science



Workshop scientific outputs in the water sector - St. Lucia

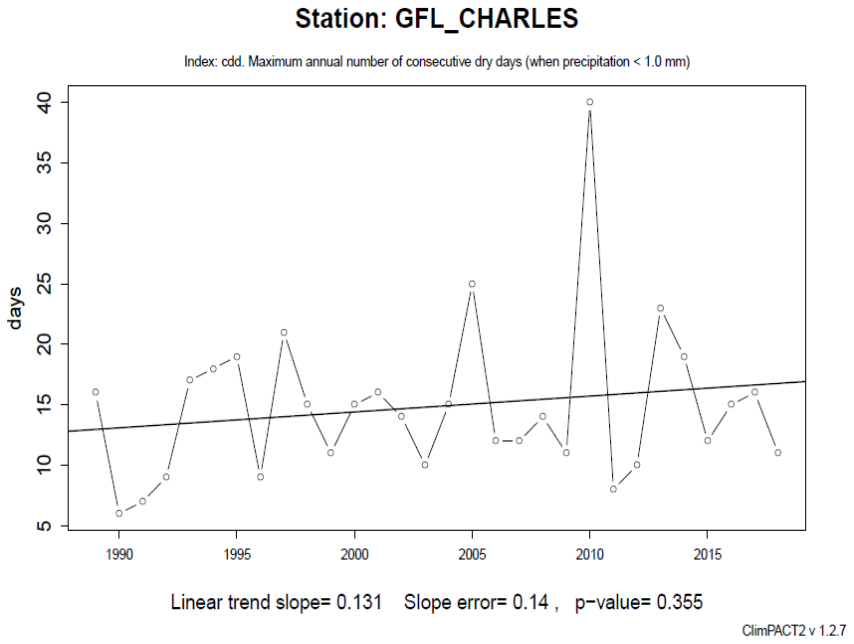
1. Problem identification: characterization of the climate system at national level and, identification of the main climatic impacts and the specific climatic variables affecting the water sector.

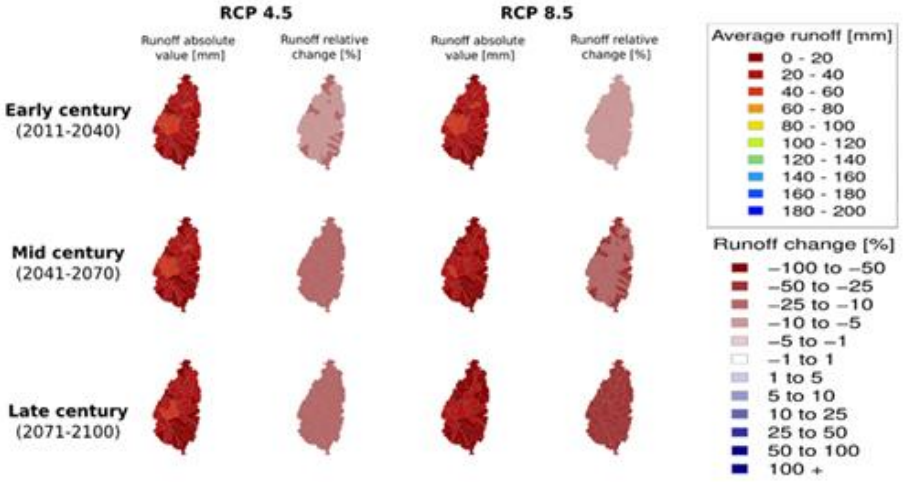


Saint Lucia relies almost exclusively on **surface water resources** to supply the socioeconomic needs. The quantity and quality of surface water is directly determined by the interplay of climatic variables interacting with the physical environment.

Water sector - St. Lucia

2. Identification of specific climatic factors, data needs and assessment methods to document and analyze the climate variability and trends from historical observations and potential future climatic changes





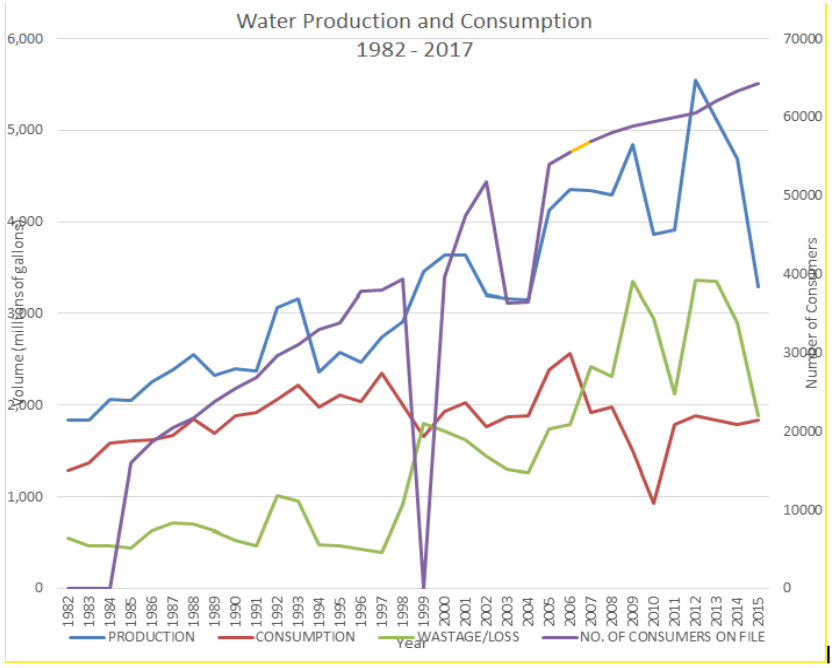
Evidence from the monitoring of climatic variables over the last three decades detected changes in precipitation patterns as well as increasing maximum and minimum daily temperatures. There is evidence of decreases in stream-flows.

Changes in precipitation patterns leading to decreases in rainfall and increases in temperatures will directly impact water yield and availability from catchments. Indicators of water yield and run-off under future conditions show a significant decrease.

Water sector - St. Lucia

3. Identification of solutions leading to proposals for adaptation and mitigation pathways that address the past, present and future behavior of climate indicators

- Forecasting the ratio of water supply to demand
- Riverbank assessment and reforestation
- Renewable energy installation at pumping stations and water supply assets
- Rainwater harvesting for farms and households and public assets
- Water tank and rainwater harvesting subsidization



The paradigm shift for this initiative is given by the application of demand and supply models for scenario forecasting and decision making and by the mainstreaming of renewable energy into the operations of the national water utility largely dependent on power from the electrical grid.

Coastal sector – DRC

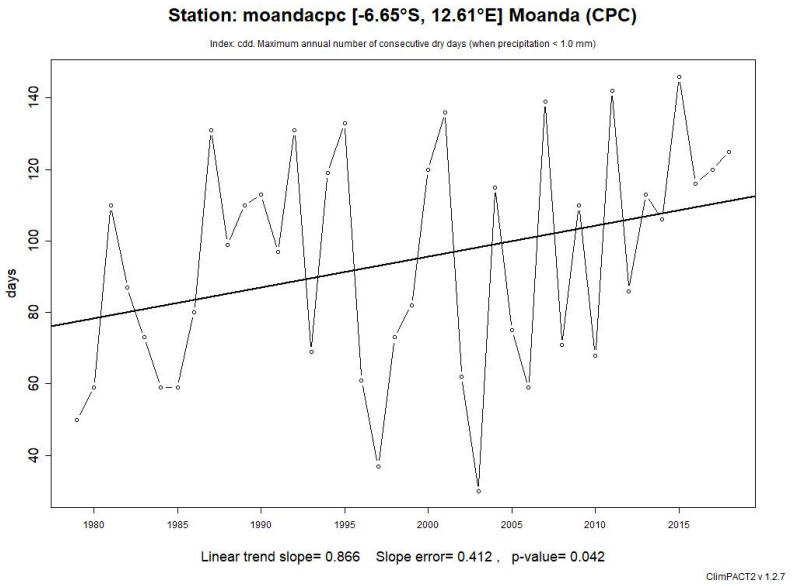
1. **Problem identification:** The coastal area of the Democratic Republic of the Congo is suffering from erosion intensified since 1988. Soil, biodiversity, socio-economic infrastructure and community livelihoods are currently threatened by flooding and violent waves.

The coast has lost 37 m. over the past 30 years and is likely to lose 65 m. by 2025. The main climatic factors identified as having the greatest impact on coastal erosion are sea level, wave regime, rainfall intensity, river water flow and runoff.

2. Identification of specific climatic variables, data needs and assessment methods

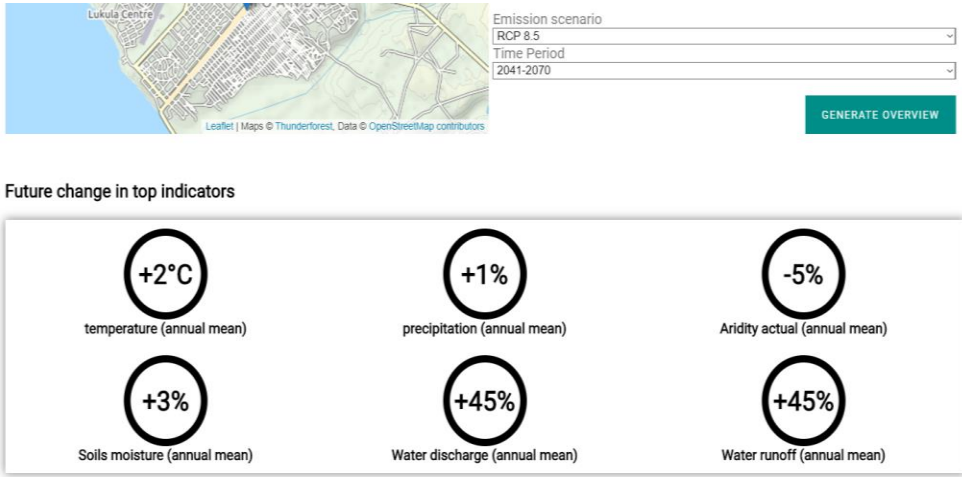
Hydro-climatic indicators:

- Temperature
- Winds
- Sea level rise
- Rainfall patterns
- Flow of water from the Congo River and runoff of rainwater
- Wave regime



Heavy rains according to ClimPACT and the prediction of climaterationale.org

Based on the RCP 8.5 scenario between 2011 and 2070 in the Muanda area, the climate rationale tool projects:
- the average temperatures will increase by 3°C;
- precipitation will increase by 4%, with a potential increase in river flows of up to 63% and an increase in runoff of 63%.



3. Identification of solutions

- Protection of wetlands and sustainable land and water management practices, including mangroves conservation
- Climate proofing existing infrastructures
- Alternative economic opportunities to the sale of wood to reduce pressure on the forest
- Setting up warning and awareness systems to reduce the risk of endangering fishing communities at sea and in the event of flooding

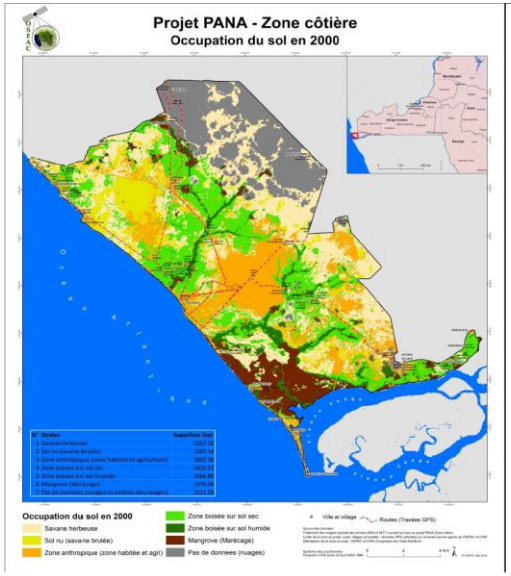


Figure 23. Occupation du sol en 2000

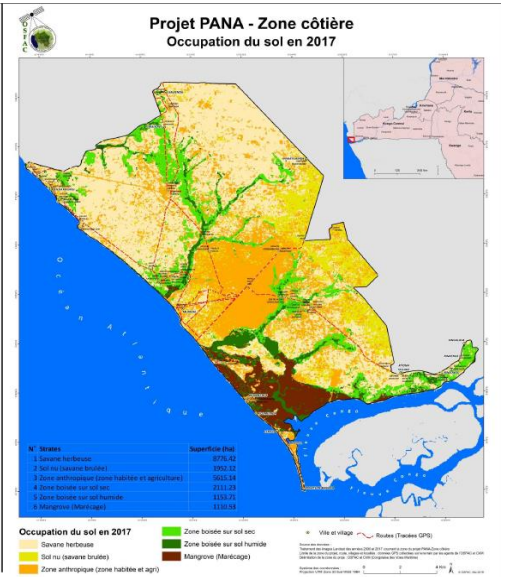


Figure 24. Occupation du sol en 2017

Between 2000 and 2017, the area saw a significant increase in the inhabited area (+47%).

The paradigm shift is provided by the vegetation of the coast over 3 km by species adapted to the area to limit wave movement and reduce coastal erosion.

Key achievements

Countries have been able to:

1. Review **key documents and interventions** to ensure the proposals are addressing nationally identified needs, incl. NDCs, NAPs, or other national and sectoral strategies as well as **hydro-climatic datasets** and climate **projections** at national and regional levels;

2. Identify how the **climate science basis tools and methodologies** can be tailored into national contexts, what stakeholders need to be involved, and what support is available;

3. Identify the **relevance and adequacy of climate information** for their projects and activities in a consultative framework.

4. Develop the **climate science basis** for their country context in support of priority adaptation/mitigation options.

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Thank you
Merci

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