Enhancing risk assessments (ERA) for improved country risk financing strategies

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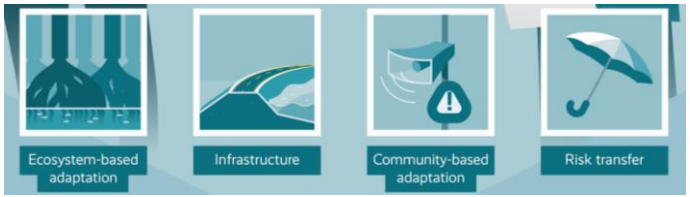
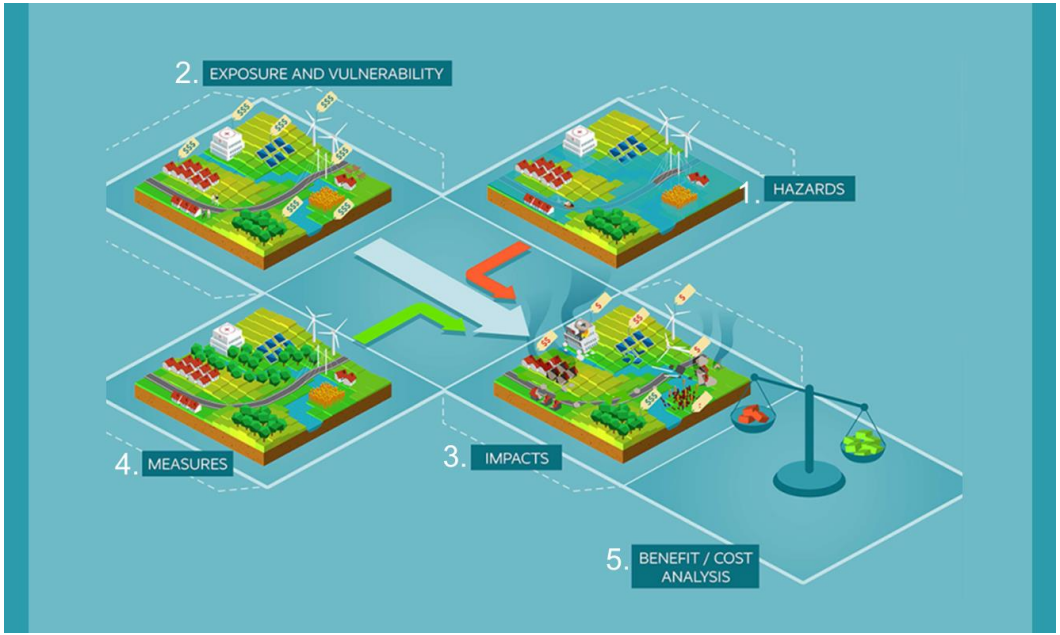
The Integrated Climate Risk Management Approach (ICRM)

The Economics of Climate Adaptation (ECA) Framework

- The ECA framework is powered by CLIMADA, an **open-source tool** that performs **probabilistic** climate and disaster **risk assessments** and calculates averted damage due to the adoption of **adaptation measures.**
- It evaluates and suggests optimal **climate adaptation measures** through weighing **the costs and benefits** of the different options.





- **ECA** is a **participatory approach.**

Outputs of ECA studies

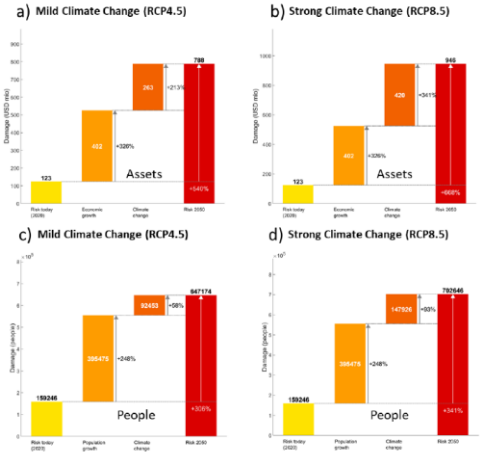
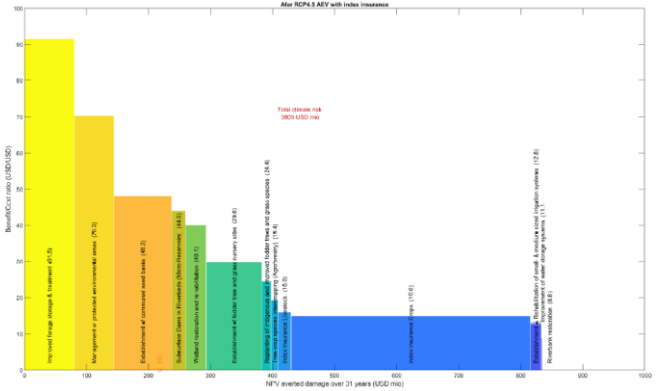


Figure 16: Annual expected damage (AED) in Somali for Assets (a,b in USD) and people affected (c,d in people).

Annual expected damage



Cost Benefit Analysis of adaptation measures

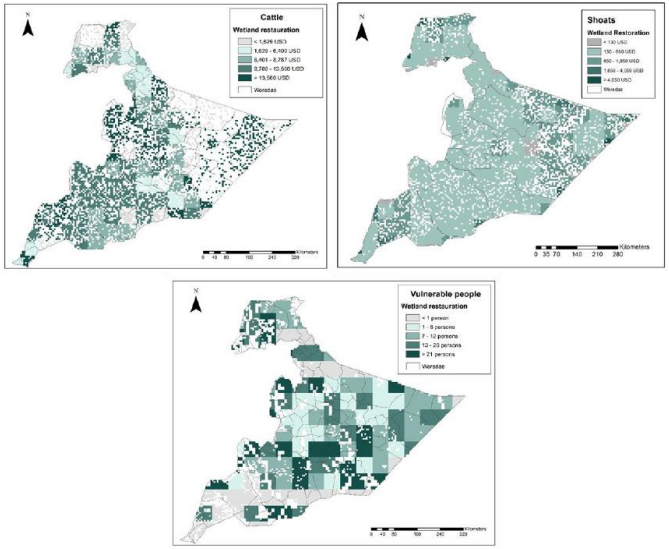


Figure 24: Benefits of 'Wetland Restauration' in Somali on cattle (top left), shoats (top right), and vulnerable people (bottom).

Spatial distributions of benefits

Macroeconomic Assessments for CDRFI

Benefit #1: Systemic risk & exposure assessment

Understanding systemic relevance of climate and disaster risks

Macroeconomic assessments answer:

- How can specific climate hazards/ disaster impact the national economy & growth perspectives of economic sectors?
- Which climate hazards will harm the national economy the most in the long-term?
- Which intersectoral dynamics and systemic risks emerge?

Benefit #2: Welfare effects of risk reduction measures

Facilitation of CDRFI demand by assessing public welfare effects of risk reduction measures

Macroeconomic assessments answer:

- How can investing in specific adaptation/ risk reduction measures reduce economic exposure and unlock economic opportunities (e.g. GDP & jobs)?
- Which investments lead to the highest economy-wide benefits?
- What is the specific finance demand and what growth effects can be triggered?

Innovations of ERA project

Macroeconomic impacts with CLIMADA

- Objectives:
  - Enabling the **analysis of macroeconomic impacts of climate risks** for specific sectors
- Activities:
  - Integrating the **Dynamic General Equilibrium Model for Climate Resilient Economic Development** (DGE-CRED) developed by GIZ and the Halle Institute for Economic Research (IWH) **into CLIMADA**
  - Implementing this new module within the ECA framework in Egypt and Thailand

Simple graphical user interface (GUI) for CLIMADA

- Objectives:
  - **Enabling suitable ministries / institutions in both project countries to run the risk assessment on their own**
  - Create capacity and ownership for risk management within countries
  - Ultimately generate uptake of CLIMADA in further countries
- Activities:
  - **Further developing the open-source CLIMADA-app presented by EIOPA** according to the needs of the Governments of Egypt and Thailand, including:
    - Integrating the Cost-Benefit Analyses for adaptation measures
    - Integrating the macroeconomic module
    - Potentially developing a web-based GUI
  - Implementing capacity building measures

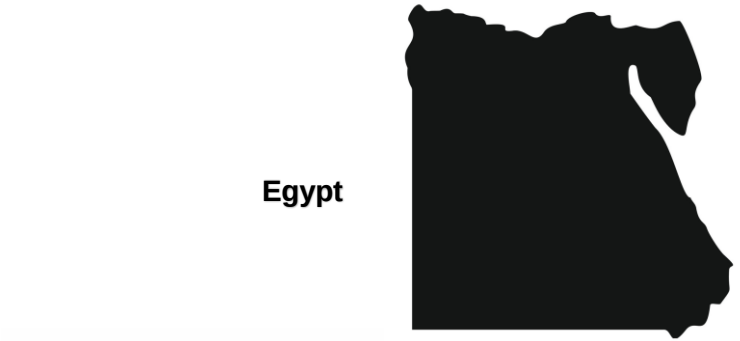
Enhancing Risk Assessments (ERA) Project

Objective: Provide enhanced risk assessments to the Governments in Egypt and Thailand, informing their adaptation and risk financing strategies.

Activities:

1. **Integration of a macroeconomic model (CRED) into CLIMADA** to model macroeconomic impacts of climate and disaster risks
2. Further development of a simple **graphical user interface** (GUI) for CLIMADA
3. Using the enhanced CLIMADA software, **implementation of the Economics of Climate Adaptation (ECA) framework** in Egypt & Thailand, including an analysis of non-monetary impacts

Duration: Jan 2023 to Dec 2024



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