



# Economics of Climate Adaptation (ECA) Framework

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# What is ECA?

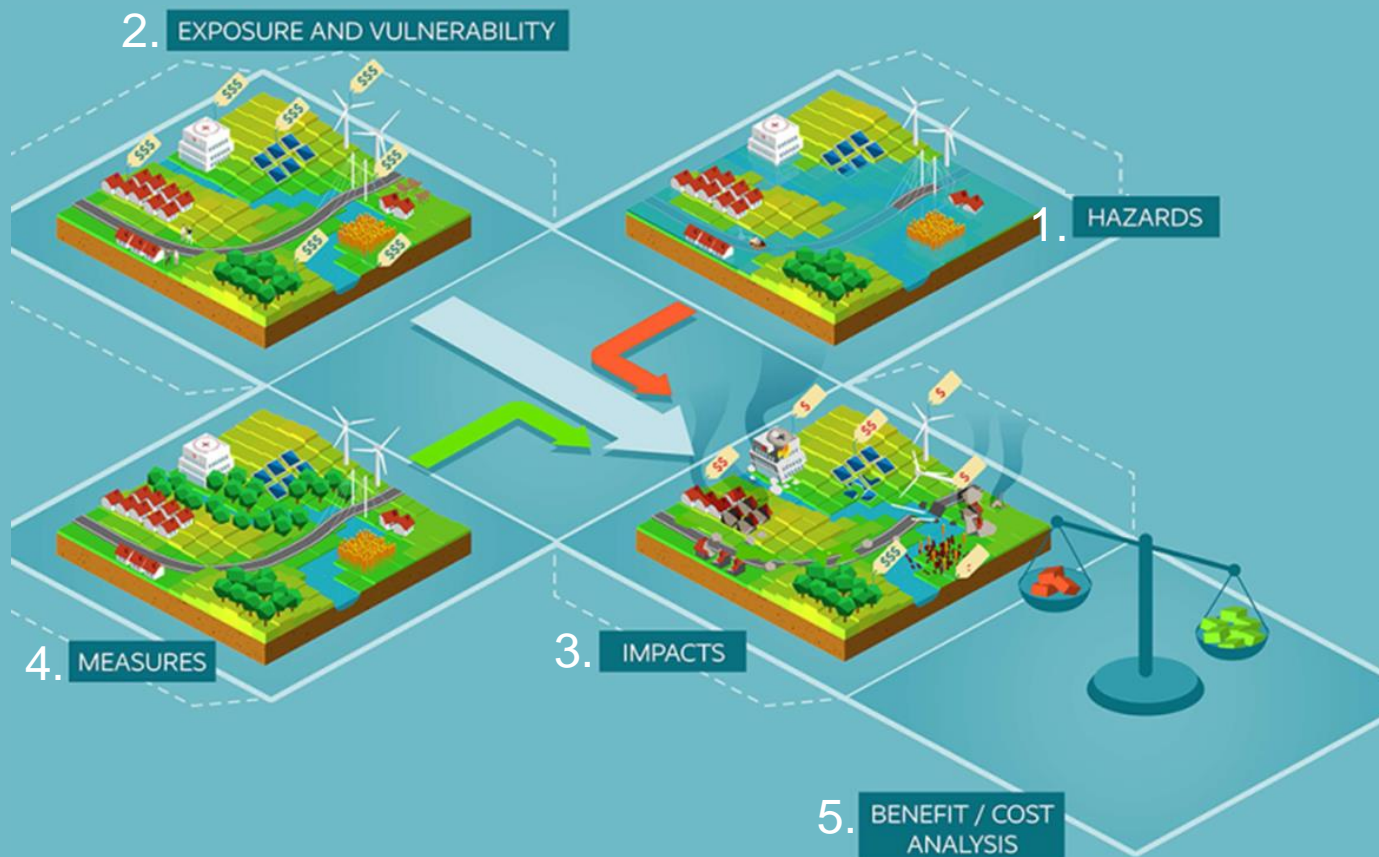


**Decision-making** support tool that informs strategy on adaptation by answering:



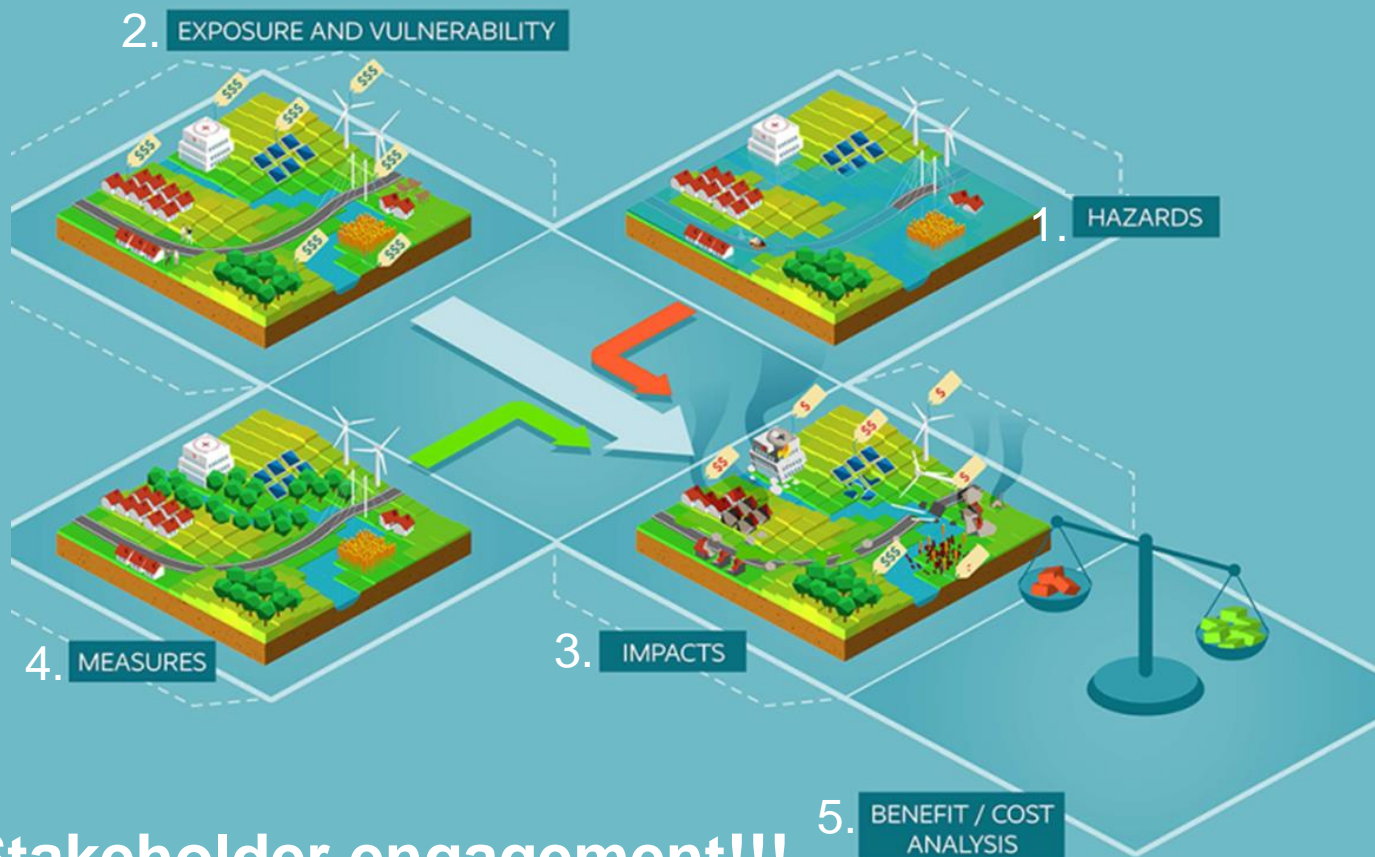


# What is included in an ECA study?





# What is included in an ECA study?



**Stakeholder engagement!!!**



# Adaptation Measures



Ecosystem-based  
adaptation



Infrastructure



Community-based  
adaptation



Risk transfer



# CLIMADA?



**CLIMADA is a platform that simulates the impact of thousands of hazard events on assets and people, taking into account their vulnerabilities.**



CLIMADA is a **quantitative modelling platform** allowing the user full flexibility. Different scenarios for hazards, assets and adaptation measures can be introduced, based on the local context.

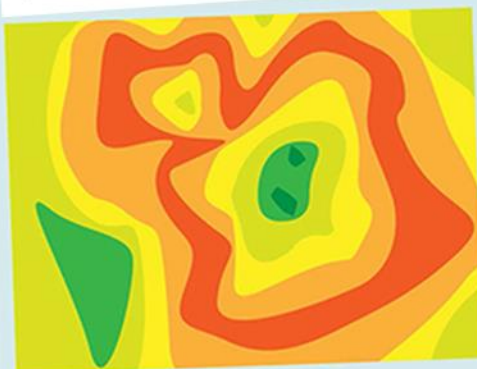




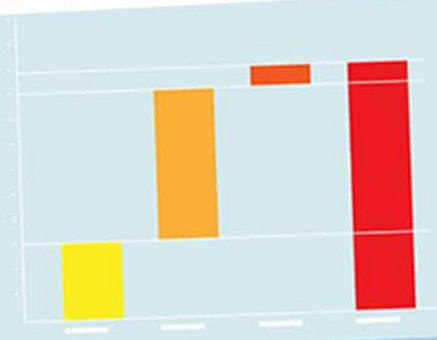
# What are the outcomes of ECA?



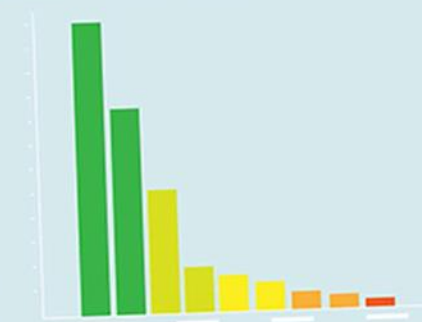
Hazard footprint and  
risk model



Expected economic and  
human losses under current  
and future scenarios



Cost-benefit analysis of  
adaptation measures





# What can decision makers do with these outcomes?



National adaptation plans  
Local adaptation strategies

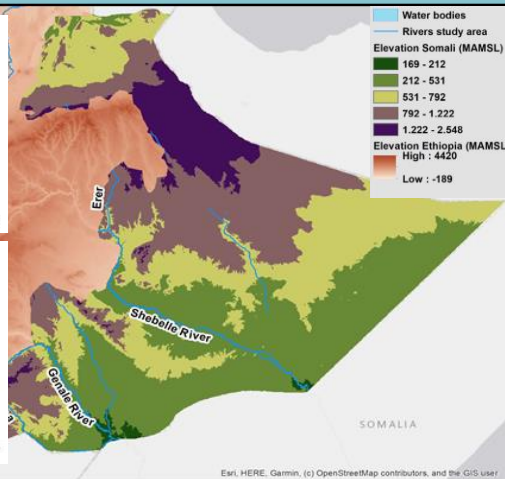
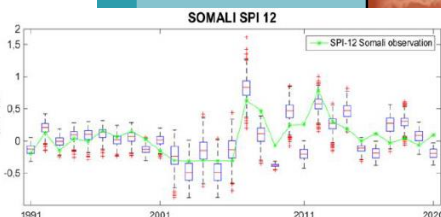
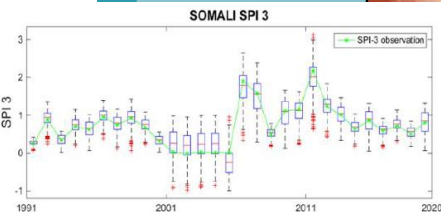
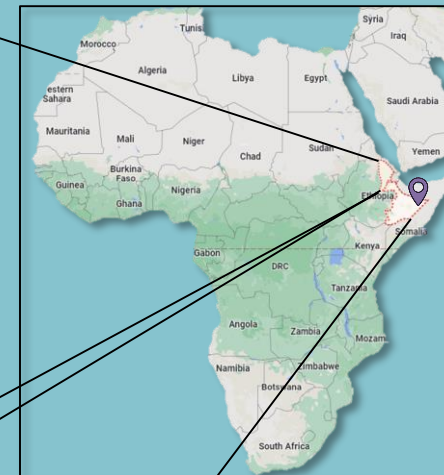
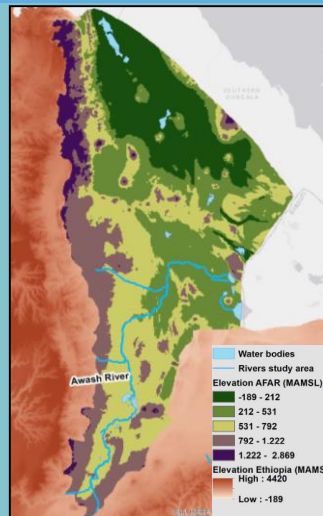
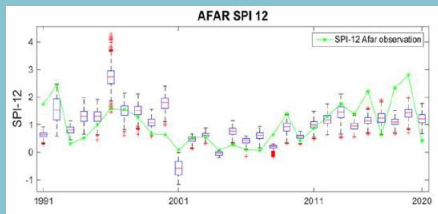
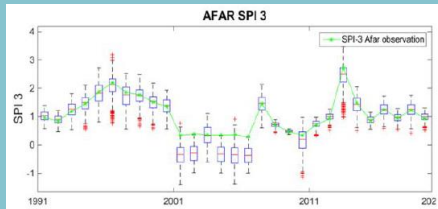


International cooperation  
Development banks  
Global funds





# Example: Rural droughts Afar and Somali, Ethiopia

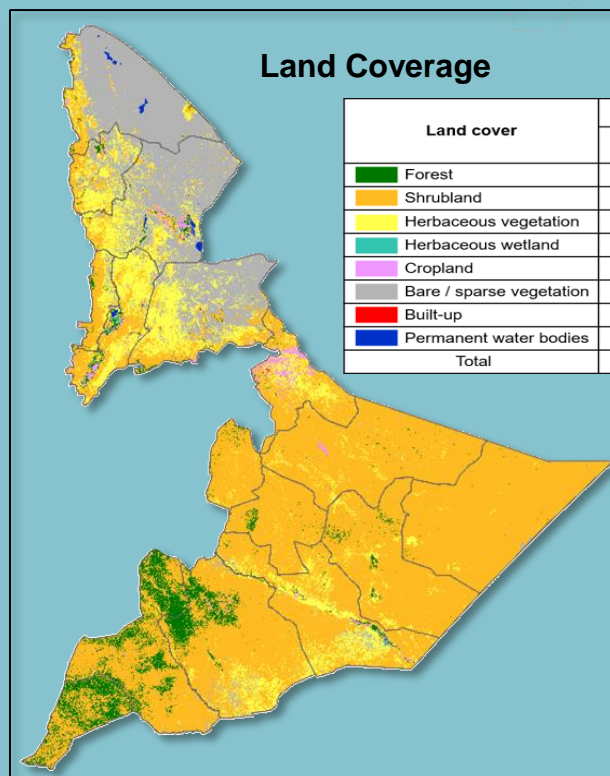
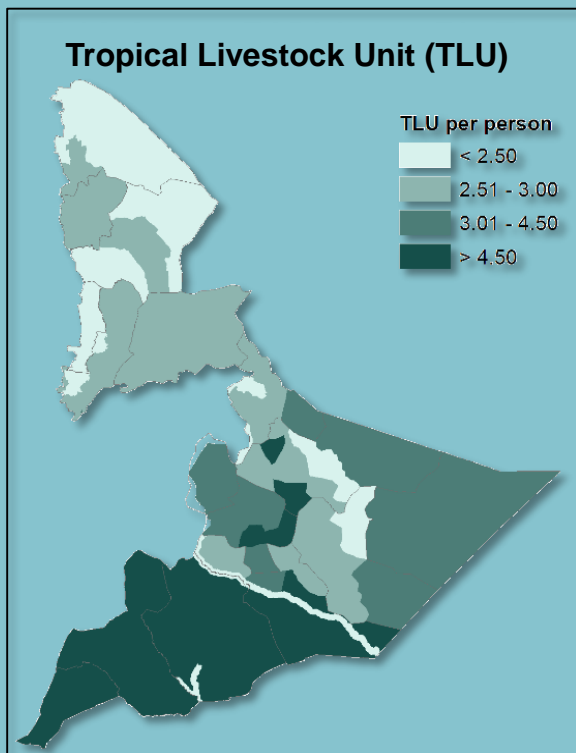


Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user





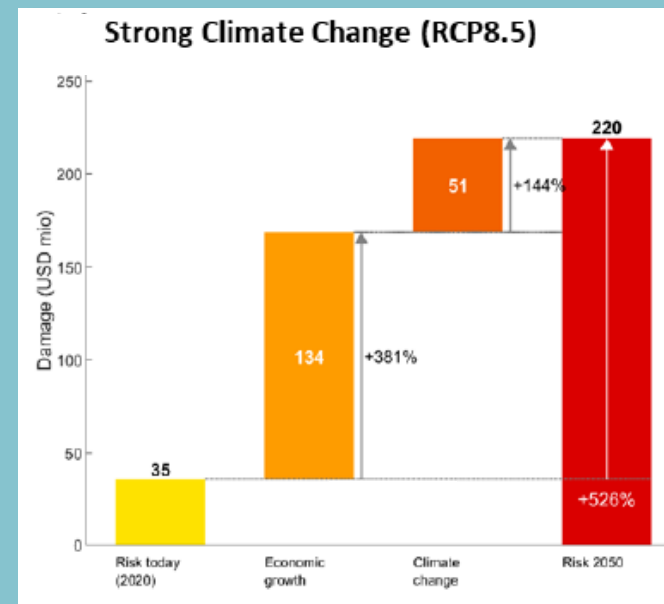
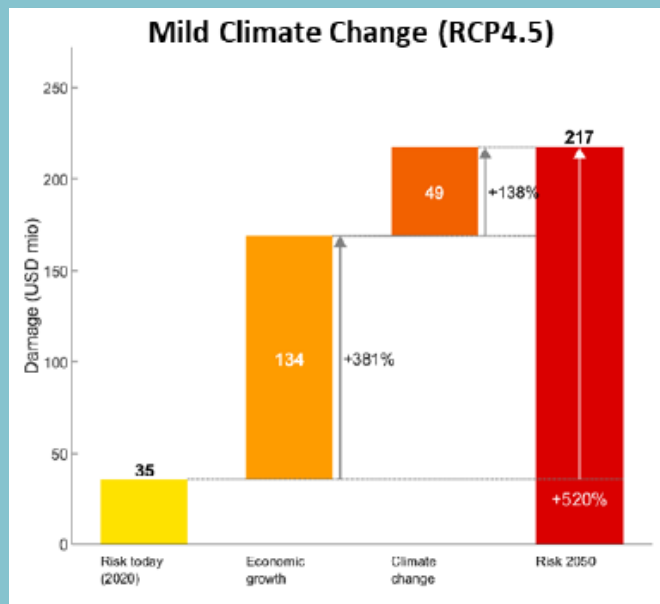
# Example: Rural droughts Afar and Somali, Ethiopia





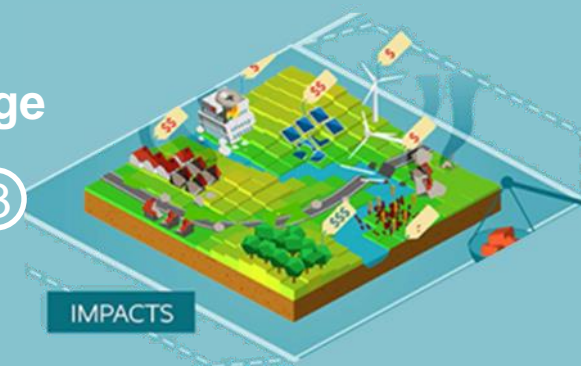
# Example: Rural droughts Afar and Somali, Ethiopia

## Afar



Annual expected damage  
(assets) by 2050

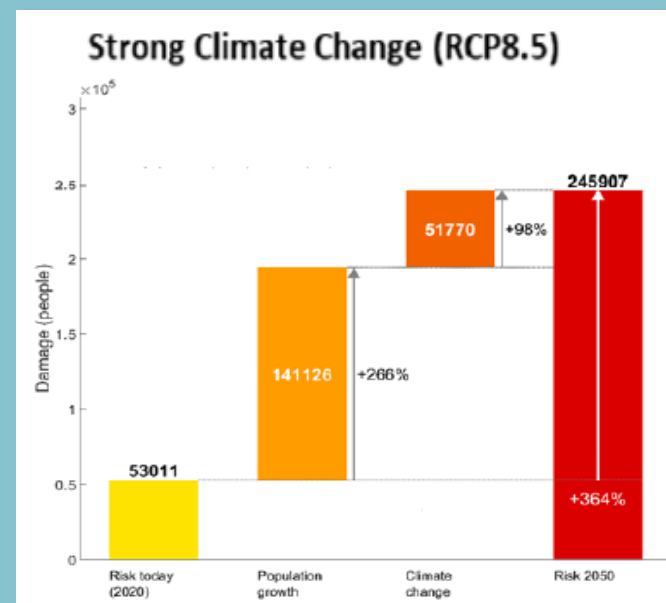
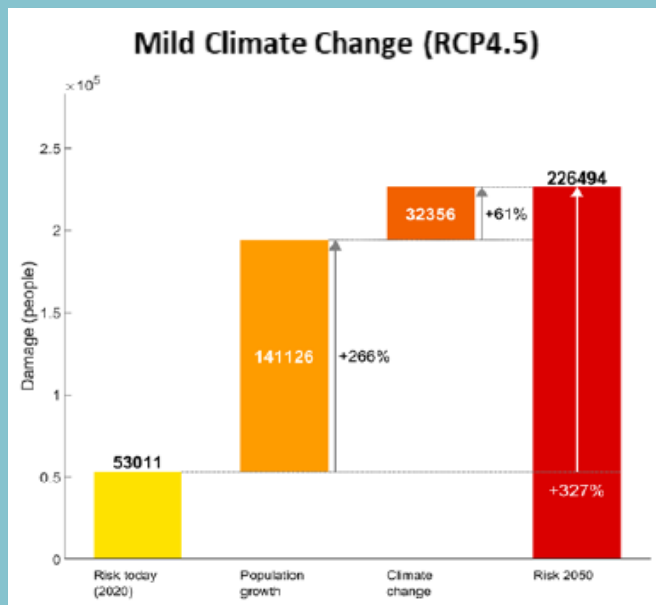
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# Example: Rural droughts Afar and Somali, Ethiopia

## Somali

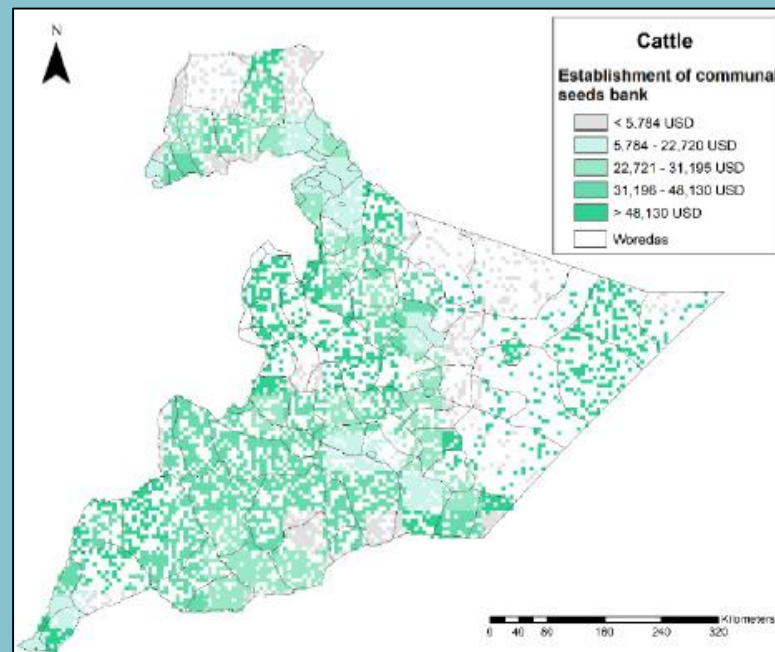
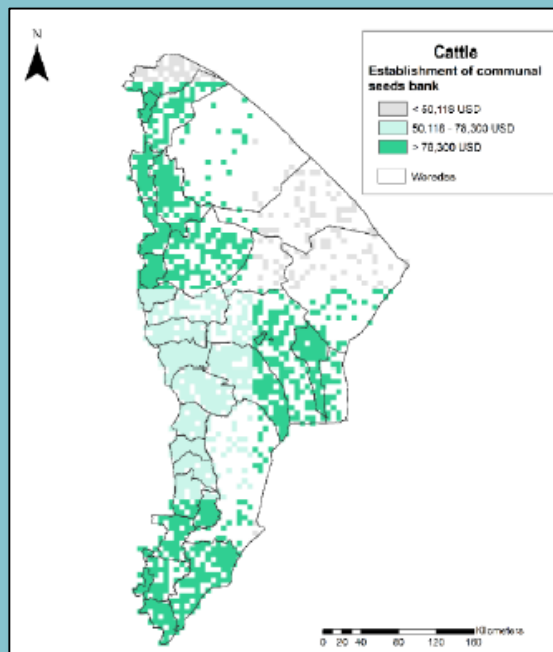


Annual expected damage  
(affected people) by 2050





# Example: Rural droughts Afar and Somali, Ethiopia



Benefit map for communal seed  
banks

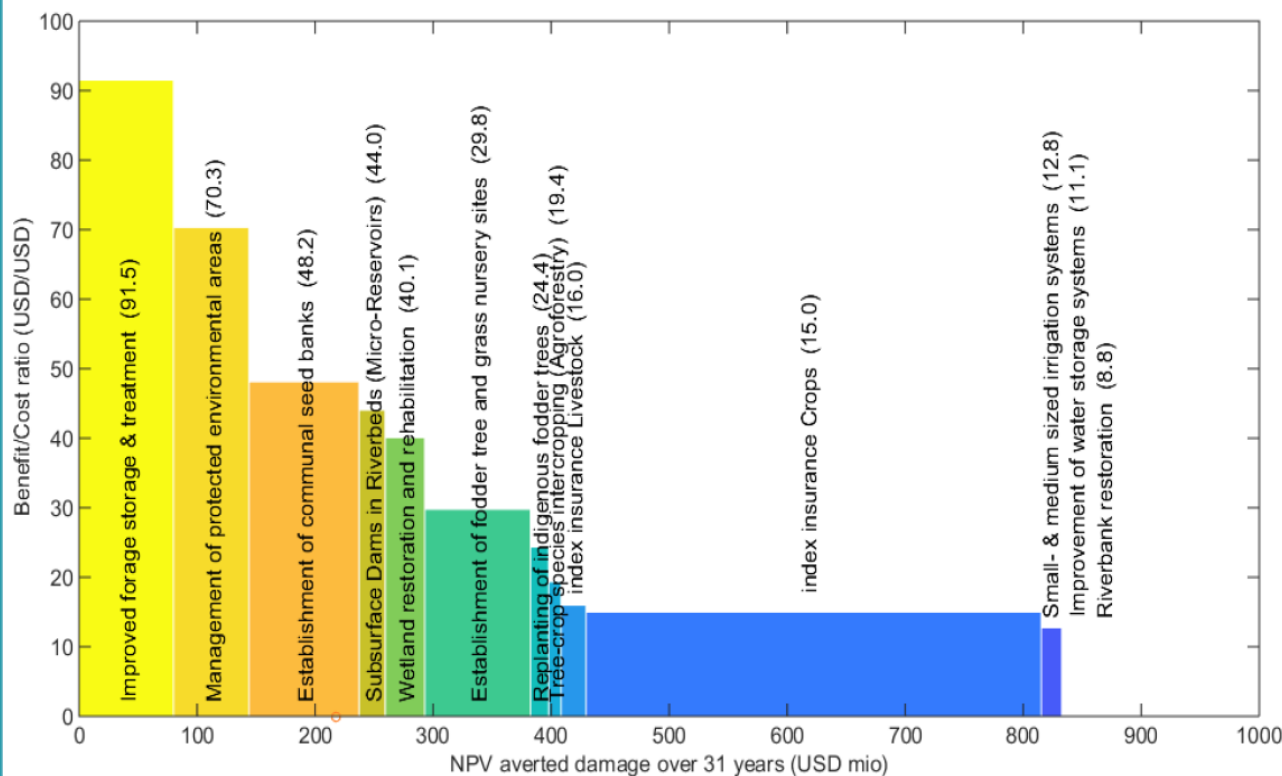
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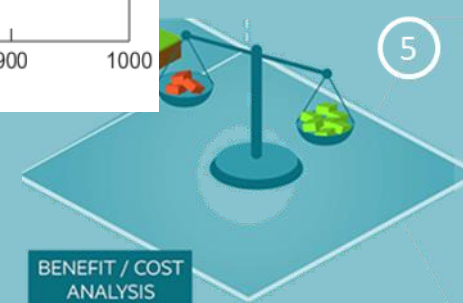


# Example: Rural droughts Afar and Somali, Ethiopia

Afar CC moderate 2050



Adaptation cost curve – USD / USD

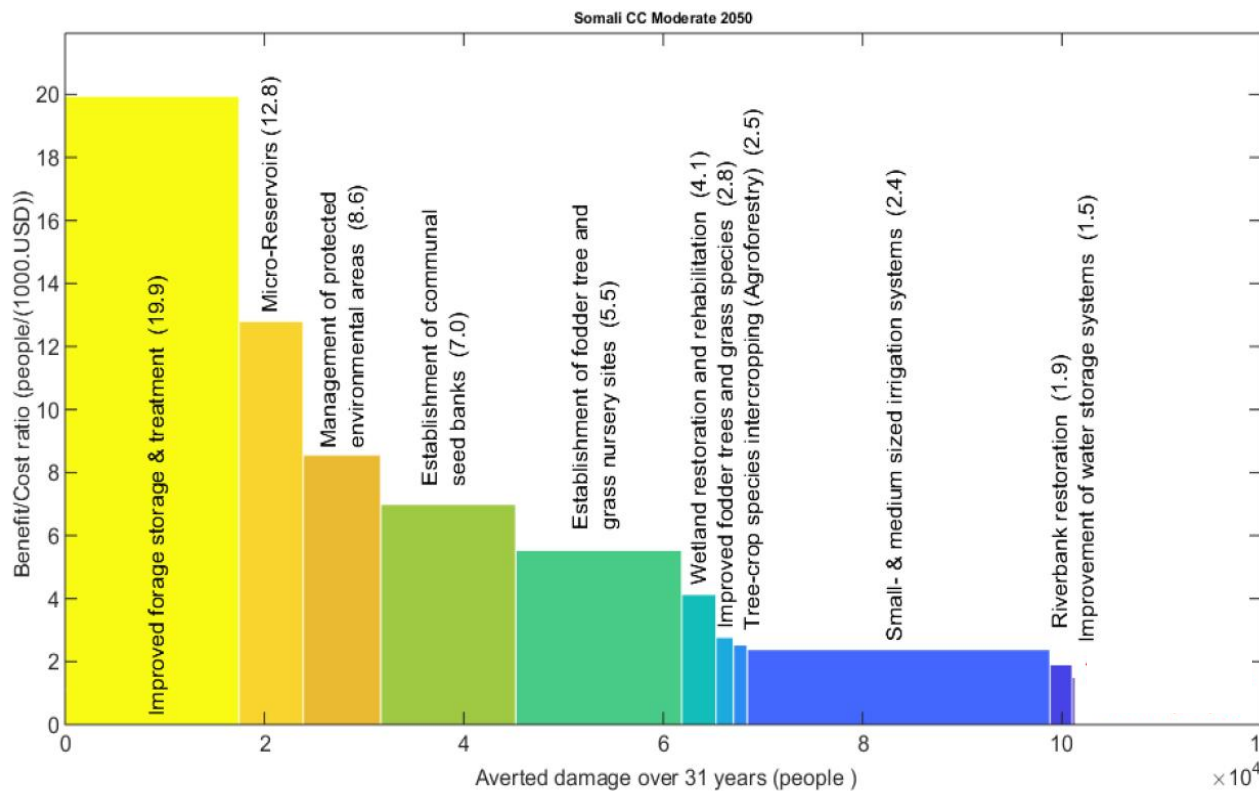




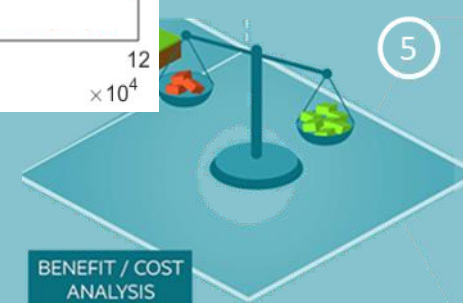
# Example: Rural droughts Afar and Somali, Ethiopia



### Somali CC moderate 2050



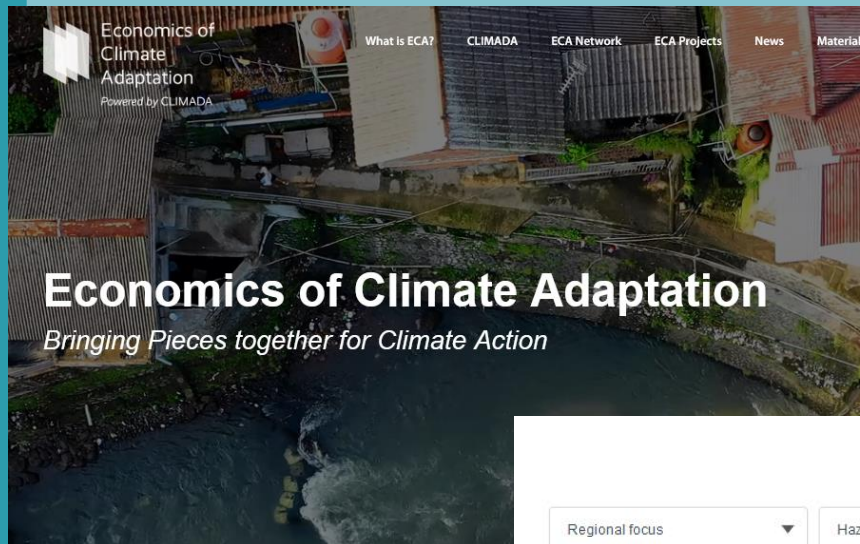
Adaptation cost curve – People / USD



BENEFIT / COST  
ANALYSIS



# Example: Rural droughts Afar and Somali, Ethiopia



### ECA Step by Step

The ECA methodology is set out to develop a practical framework allowing national and local decision makers to carry out a comprehensive assessment of climate risks facing their economies while minimizing the cost of adaptation through cost efficient strategies. Special emphasis is placed on a robust and integrated approach based on sound scientific facts. The ECA framework comprises 8 phases to facilitate a practical implementation of the methodology.

- 01 PHASE | Defining Research Area
- 02 PHASE | Data Acquisition & Management
- 03 PHASE | Defining Scenarios
- 04 PHASE | Modelling Hazards
- 05 PHASE | Valuating Assets
- 06 PHASE | Creating Damage Functions & Risk Analysis
- 07 PHASE | Identifying & Simulating CCA measures
- 08 PHASE | Illustrating Results

[Download ECA Guidebook](#) →

Regional focus ▼ Hazard ▼ Geographical scale ▼ Timeline ▼

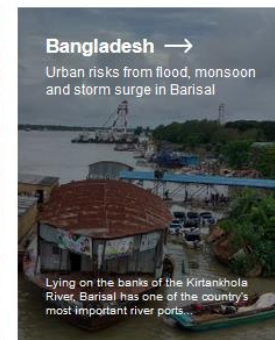
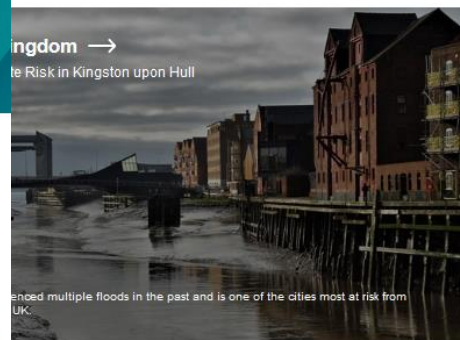
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**RESET FILTER**

CLIMADA

#### What is CLIMADA?

With accurate and reliable data on climate-related risks becoming increasingly important, CLIMADA provides a robust analysis of the cost and benefits of adaptation measures and allows informed resilience investments into adaptation and disaster risk reduction. CLIMADA is an open-source quantitative modelling tool used by ECA to conduct risk assessments. It is a mathematical model written in two different scripting languages, MATLAB and Python.





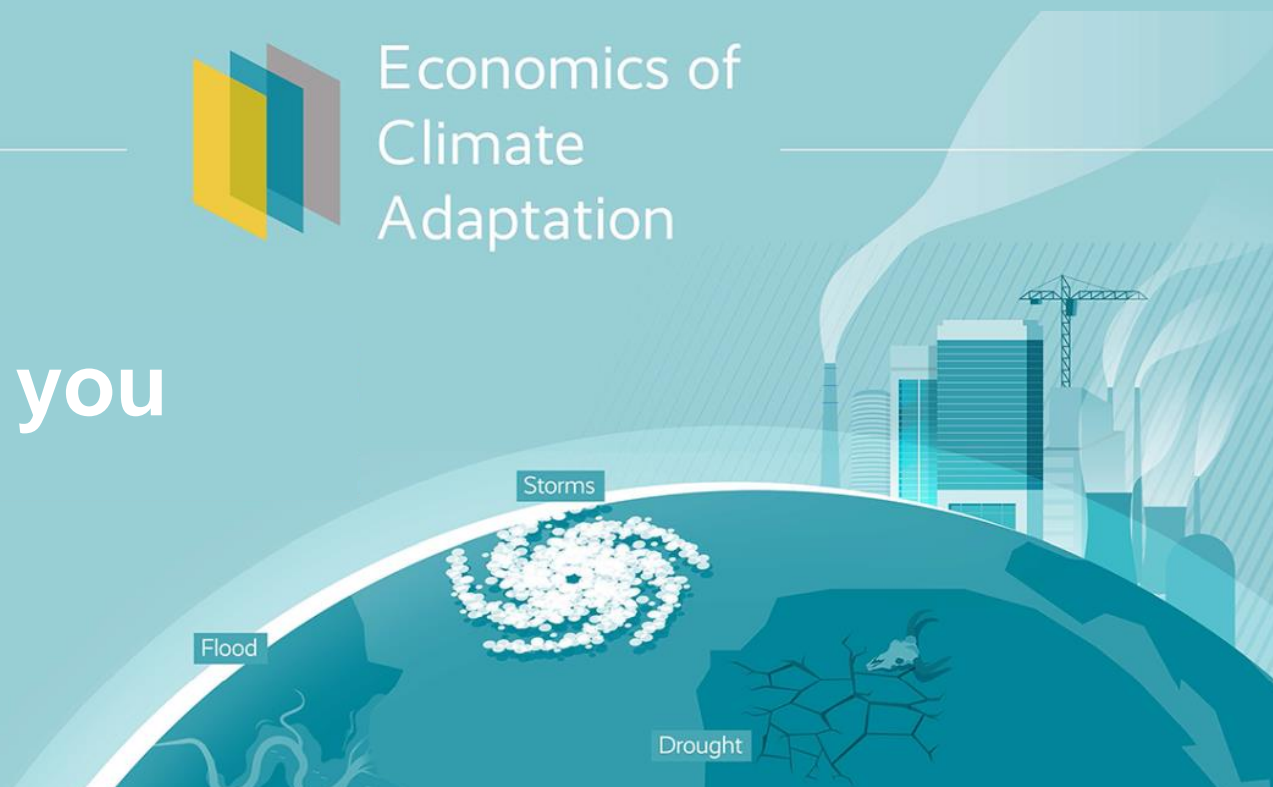


# Example: Rural droughts Afar and Somali, Ethiopia



Economics of  
Climate  
Adaptation

Thank you



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