

From Climate Risk Data to Climate Finance

The Economics of Climate Adaptation (ECA) in Honduras

04.05.2022

A project implemented on behalf of



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In cooperation



Flood Risk in San Pedro Sula Honduras

What is the risk exposure of different assets?

> vulnerable people, road network, housing, environment, hospital, airport ...)

What measures can be done to reduce the exposure?

> 47 measures considered (green, grey, monitoring)

How to finance these measures, which one are cost-efficient?

> strong stakeholder involvement, Municipality, KFW, community, Academia

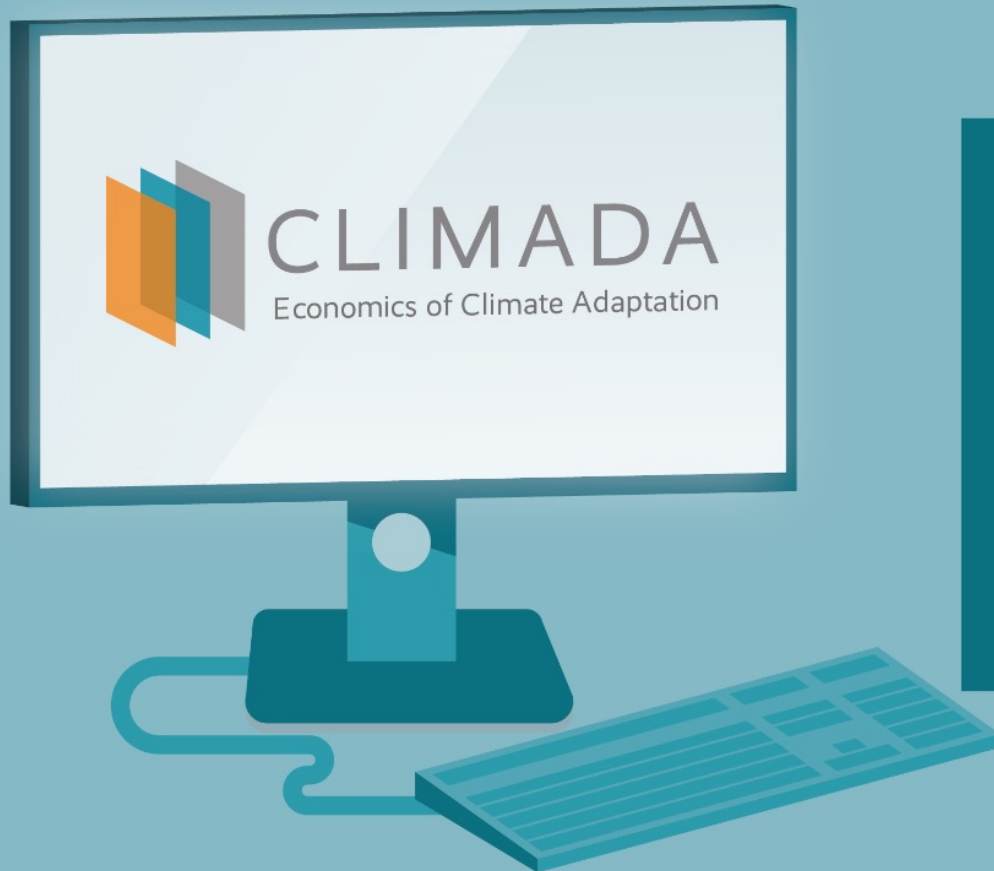
ECA offers a

UNIQUE FRAMEWORK

for the flexible identification of cost-effective climate adaptation measures



Economics of
Climate
Adaptation

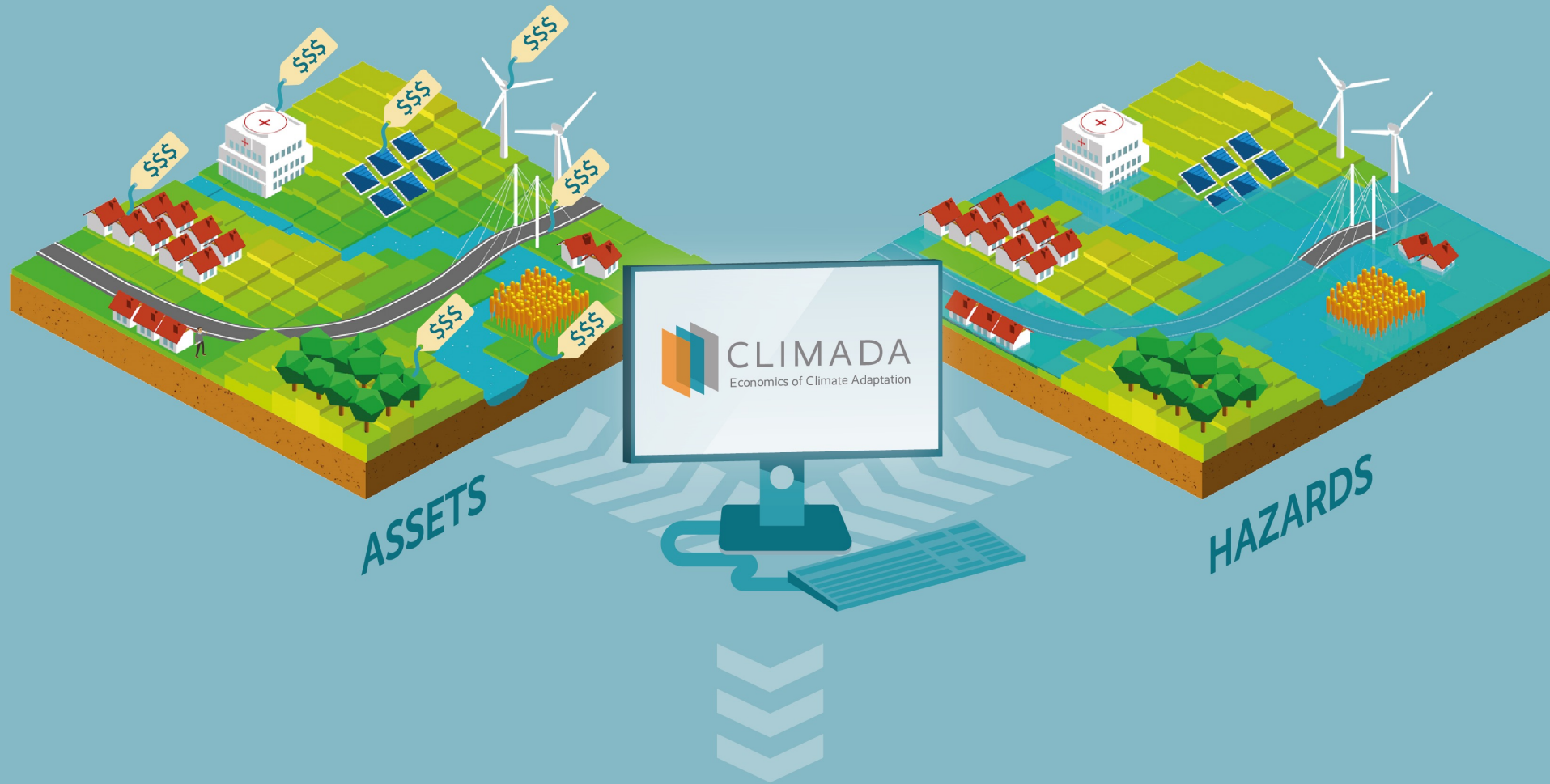


Powered by **CLIMADA**,
the ECA framework links
hazards, vulnerable assets
and potential damages,
quantifying them into
monetary values.



Economics of Climate Adaptation

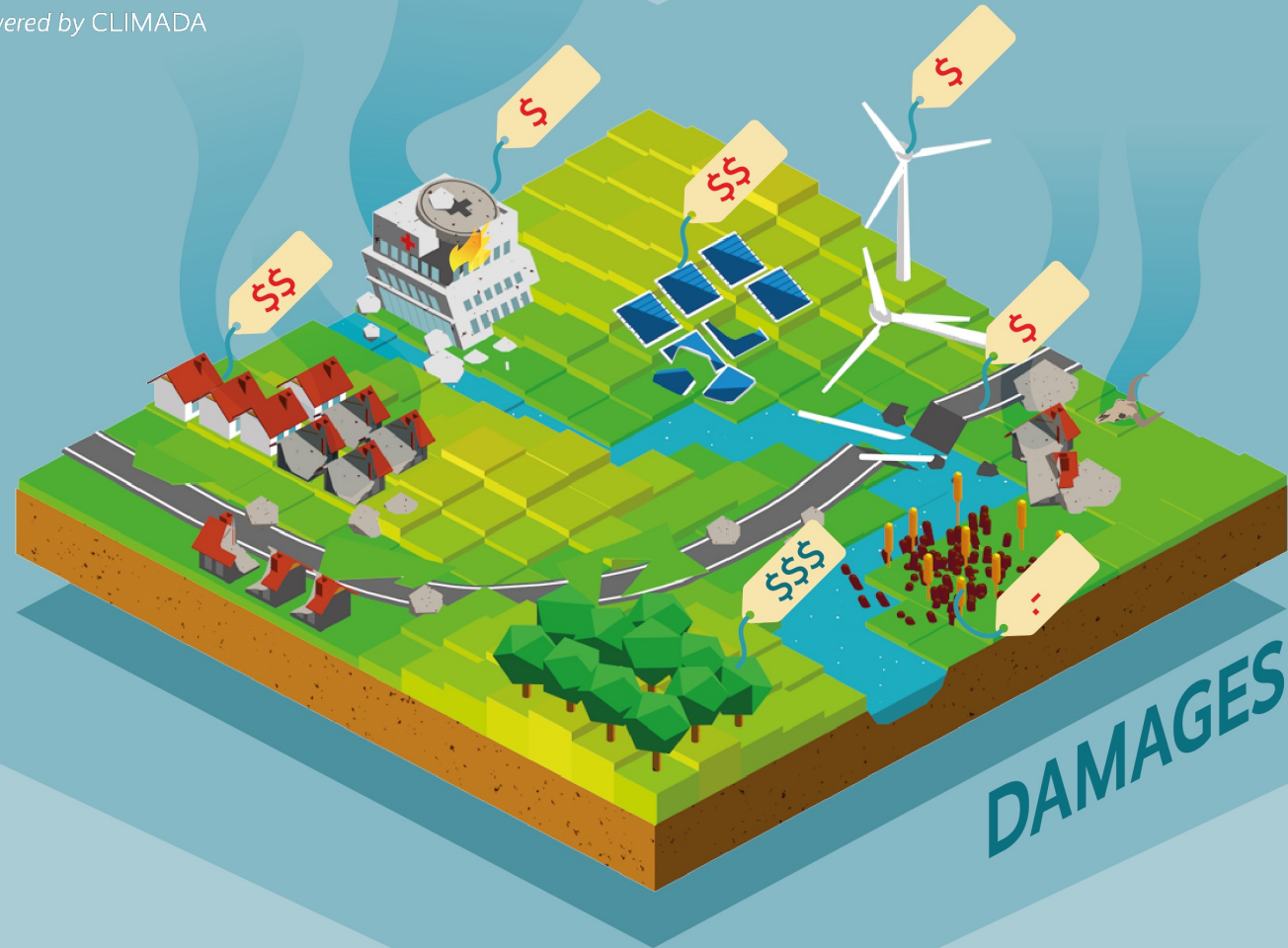
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Economics of Climate Adaptation

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ECA systematically evaluates and offers
an optimal climate adaptation measures portfolio
FOR DECISION MAKERS.

ECA builds a smart-mix portfolio of different adaptation measures, weighting costs and benefits of the different options to enable synergies and leverage local conditions.



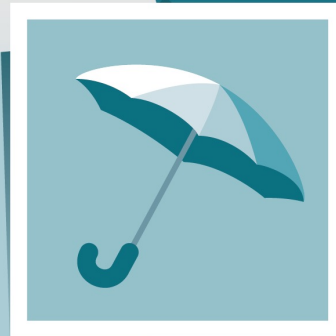
Ecosystem-based
adaptation



Infrastructure



Community-based
adaptation

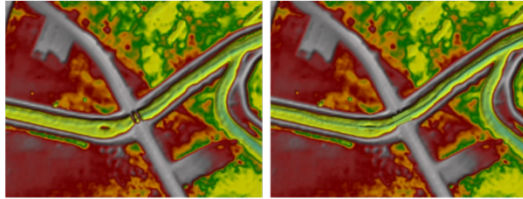


Risk transfer

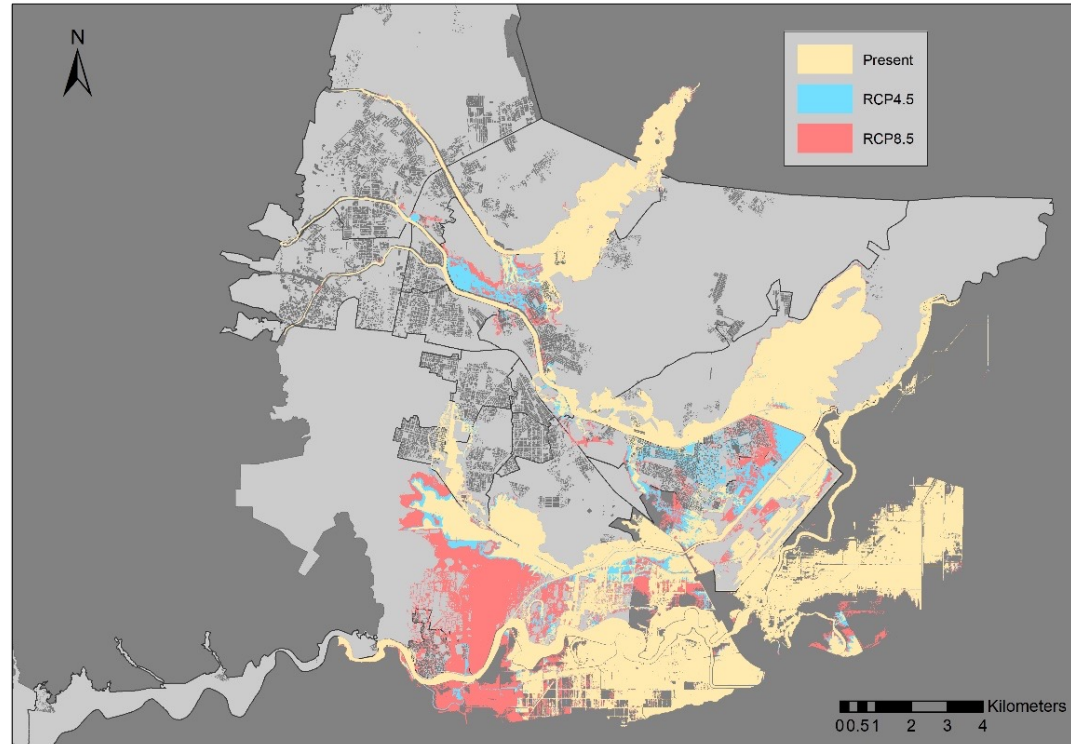
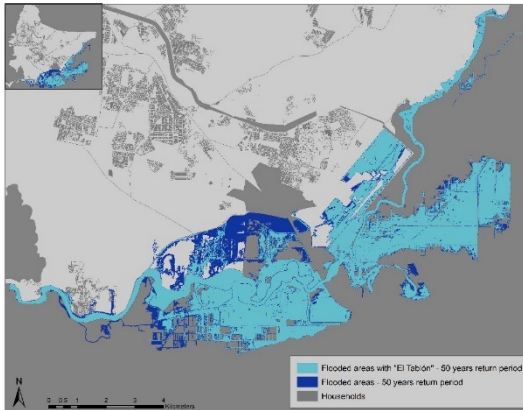
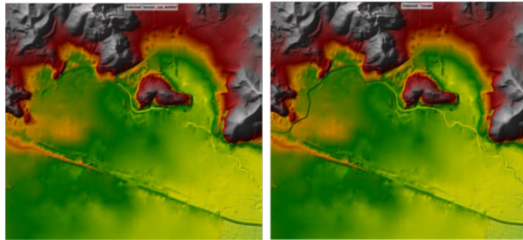
Case Study: San Pedro Sula, Honduras

Modelling

a) Before channel correction b) After correction



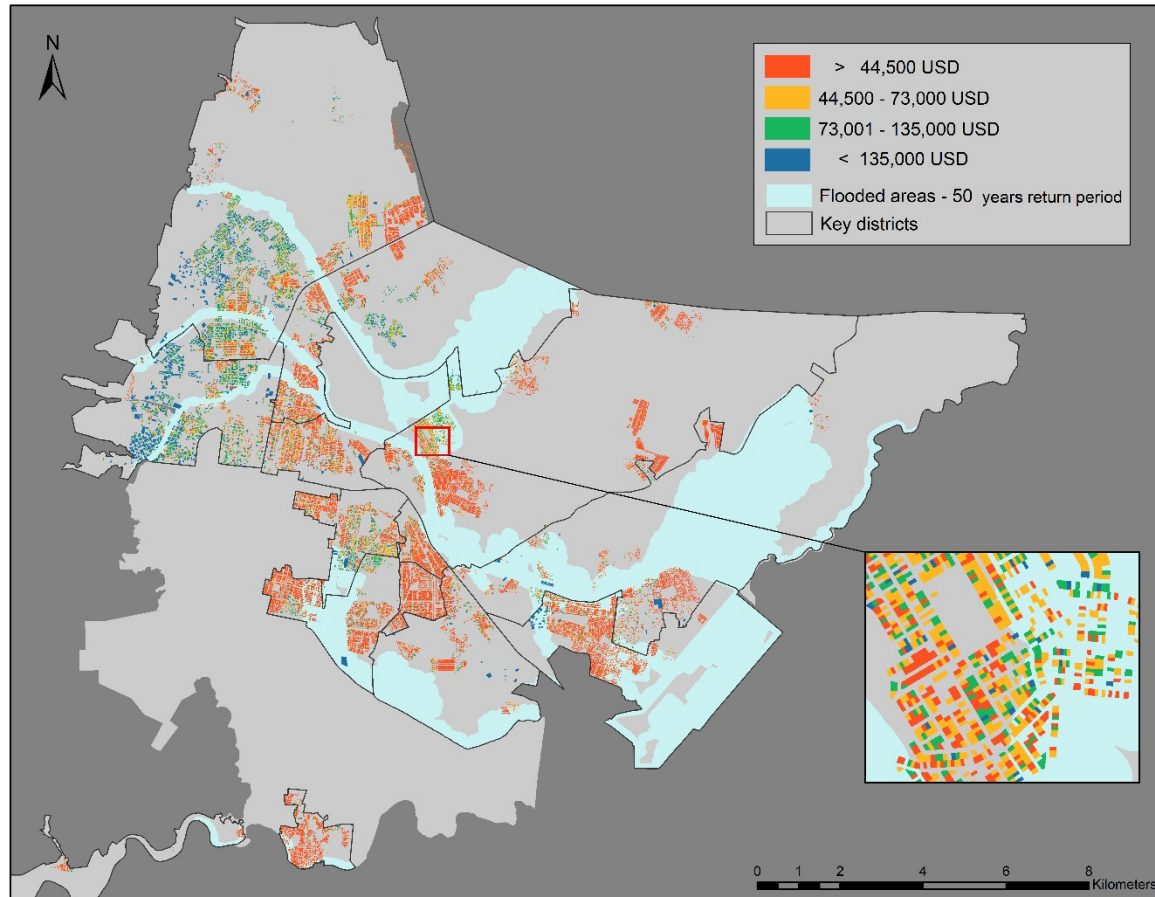
c) Before river bed "burning" d) After river bed "burning"



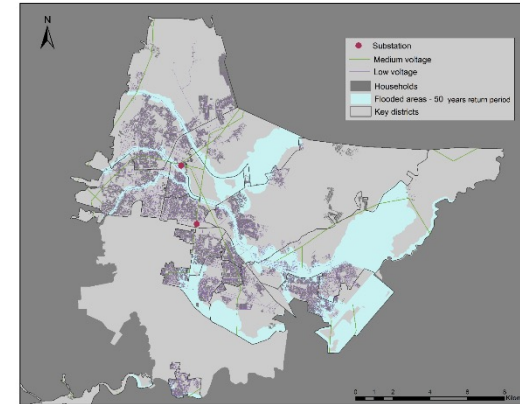
- High resolution modelling of flood intensity and frequency
- Inclusion of Dam project
- Hand-over of inundation model to stakeholders

Case Study: San Pedro Sula, Honduras

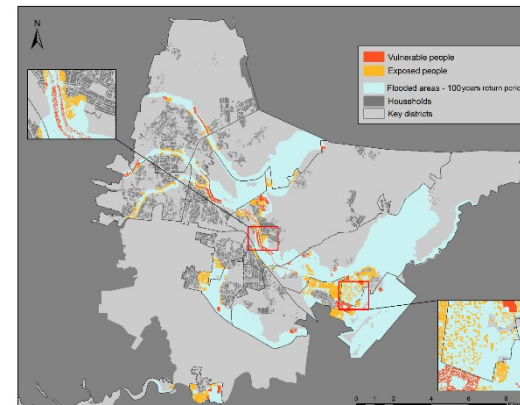
Mapping of Assets



Monetary valuation of assets
(>300 000 assets, 9 asset classes, USD5.6m total value)



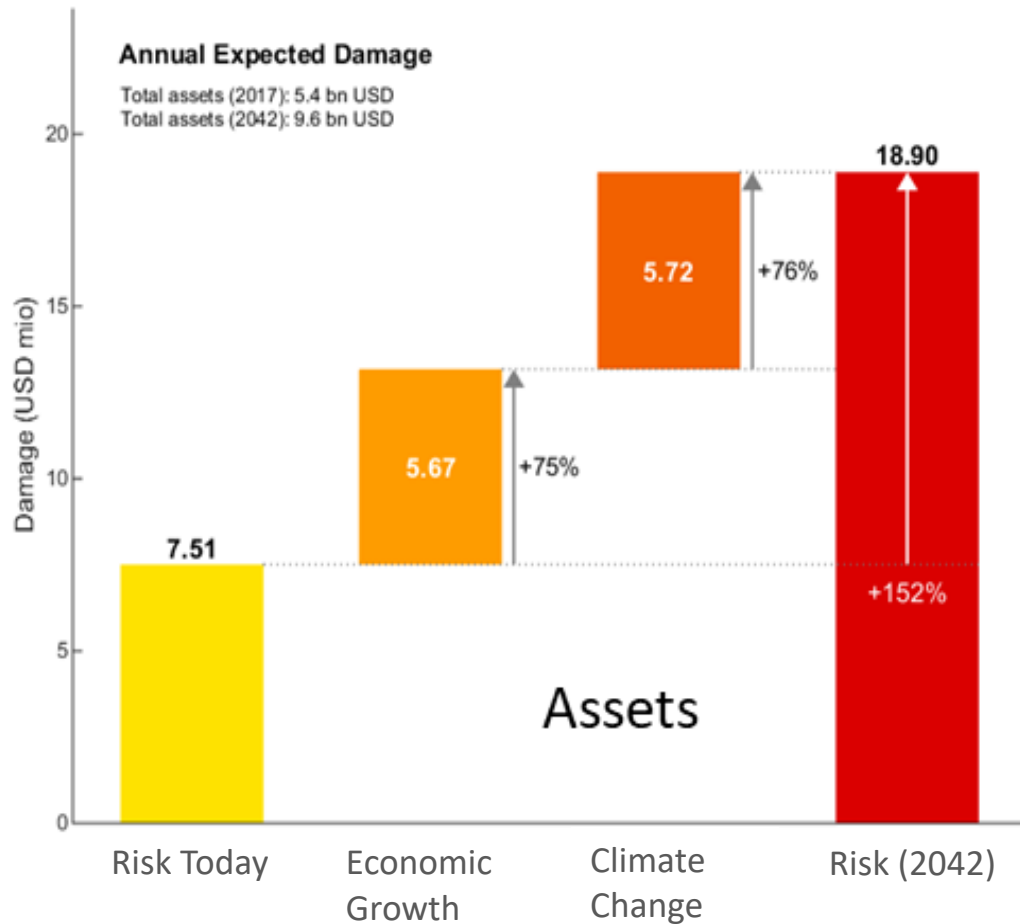
Electrical grid



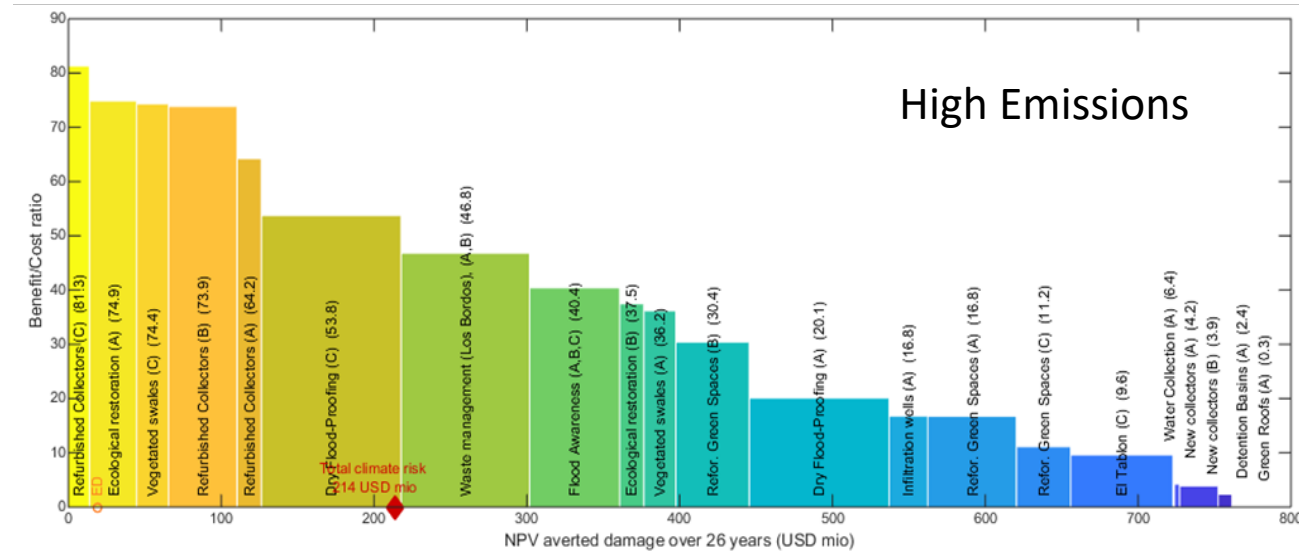
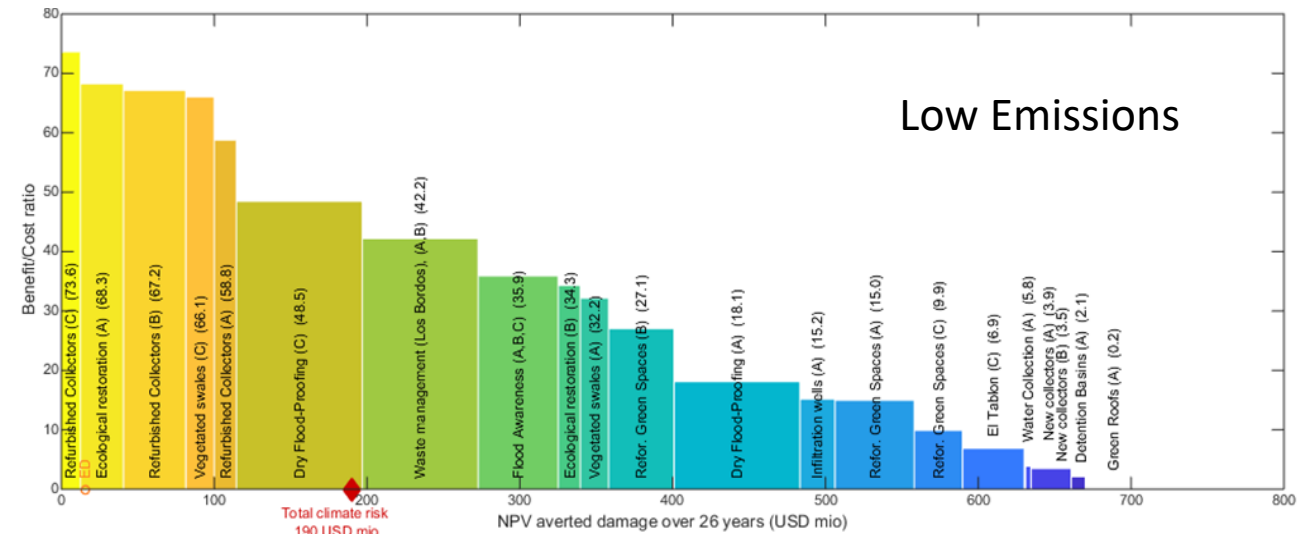
Vulnerable Population

Main Results

Annual Expected Damage (AED) in 2042 (USD m)

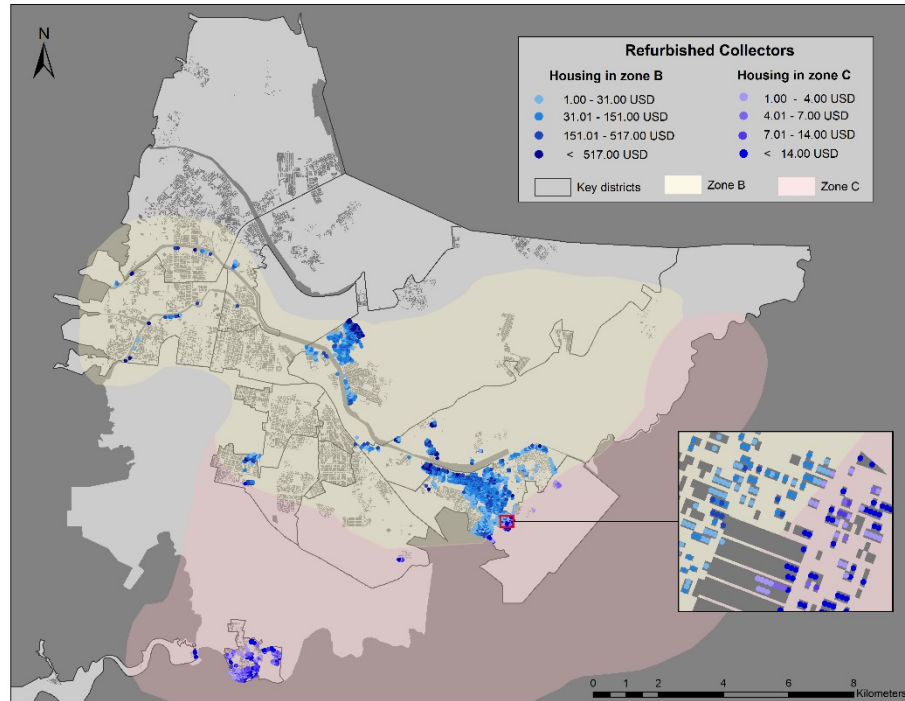


Most Effective Measures (Portfolio for investment)

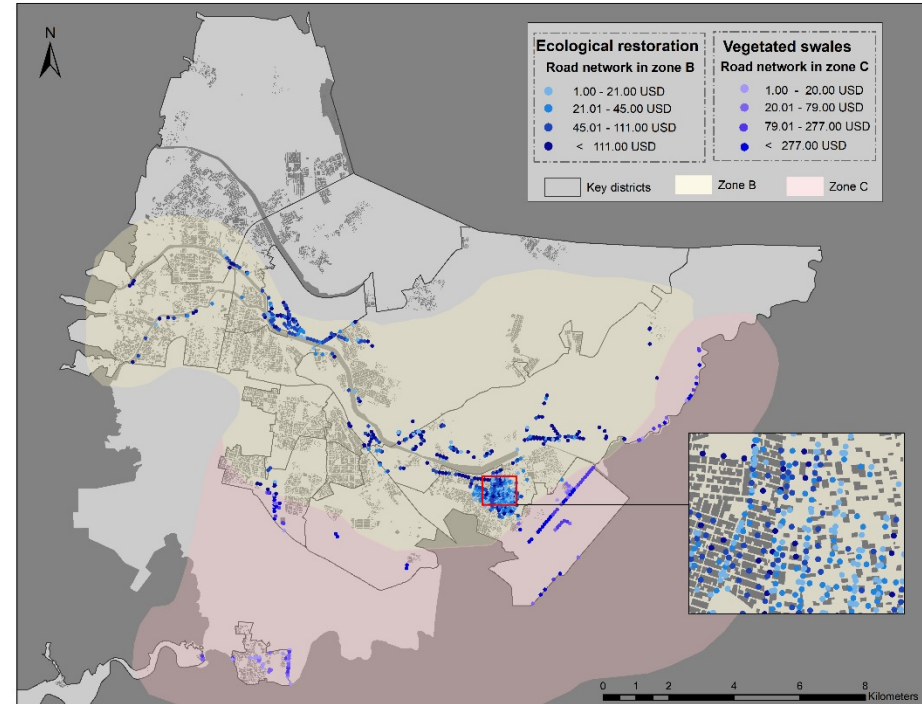


Case Study: San Pedro Sula, Honduras

Spatial distribution of benefits for key measures



Refurbished Collectors
Swales



Ecological Restoration, Vegetated

1. Today's annual expected damage is USD 7.3m, increasing to over USD 14m by 2042;
2. With the **top three cost-efficient** measures, San Pedro Sula will be able to avoid an estimated **USD 50 million in damages** and protect around **30 000 people** over the next three decades with an **investment of under USD 36 million**;
3. **Small-scale grey measures** (e.g. refurbishing collectors) as well as **green measures** (e.g. ecological restoration) were identified as the **most efficient**;
4. **Climate index-insurance** can serve as a potential **complementary measure**.

The outcomes of ECA inform
climate adaptation strategies and policies,

UNLOCKING CLIMATE FINANCE.



National adaptation plans
Local adaptation strategies



International cooperation
Development banks
Global funds

ECA outcomes inform local and national adaptation strategies. The quantification of climate risk and the ranking of potential benefits align with the requirements of international funding agencies and other investors.



Economics of
Climate
Adaptation

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Thank you!

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