



**PROJECT:  
Climate-Smarting Marine  
Protected Areas and  
Coastal Management in  
the Mesoamerican Reef**



SMART COASTS /  
COSTAS LISTAS  
PROJECT

Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag



























# Global efforts and Local Action



***“If you don’t know how to fix it, please stop breaking it!”~ Severn, Rio 1992***



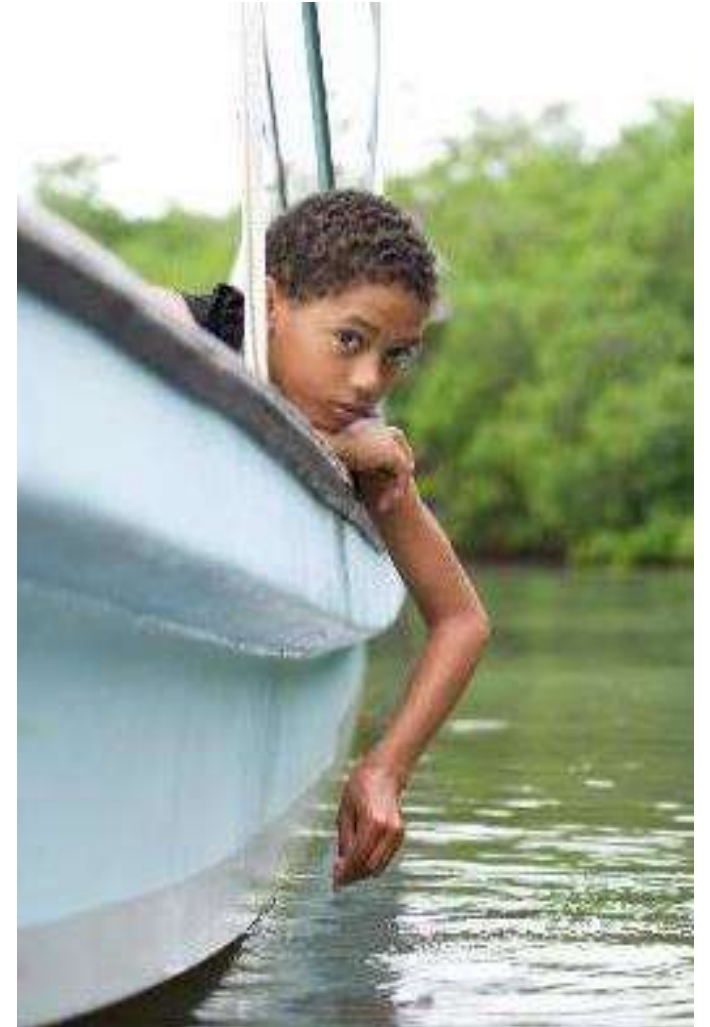
***“It’s unreal, it’s as though they’re resigning our AOSIS states to collateral damage, I mean, it’s like we have no importance.” Belize Ambassador Lois Young, Chair of AOSIS***



The Problem:

## A critical need to improve adaptation capacities

- **Increased vulnerability to climate change effects**
  - Change in precipitation patterns
  - More frequent occurrence of stronger hurricanes
  - Increased sea surface temperature
  - Ocean acidification
  - Sea level rise
  - Increased exposure of coasts
- **Local need for more effective adaptation solutions**
  - Communities, businesses and governments are looking for ways to increase resilience
  - Recognition of the value of ecosystems





# Mesoamerican Reef Ecoregion

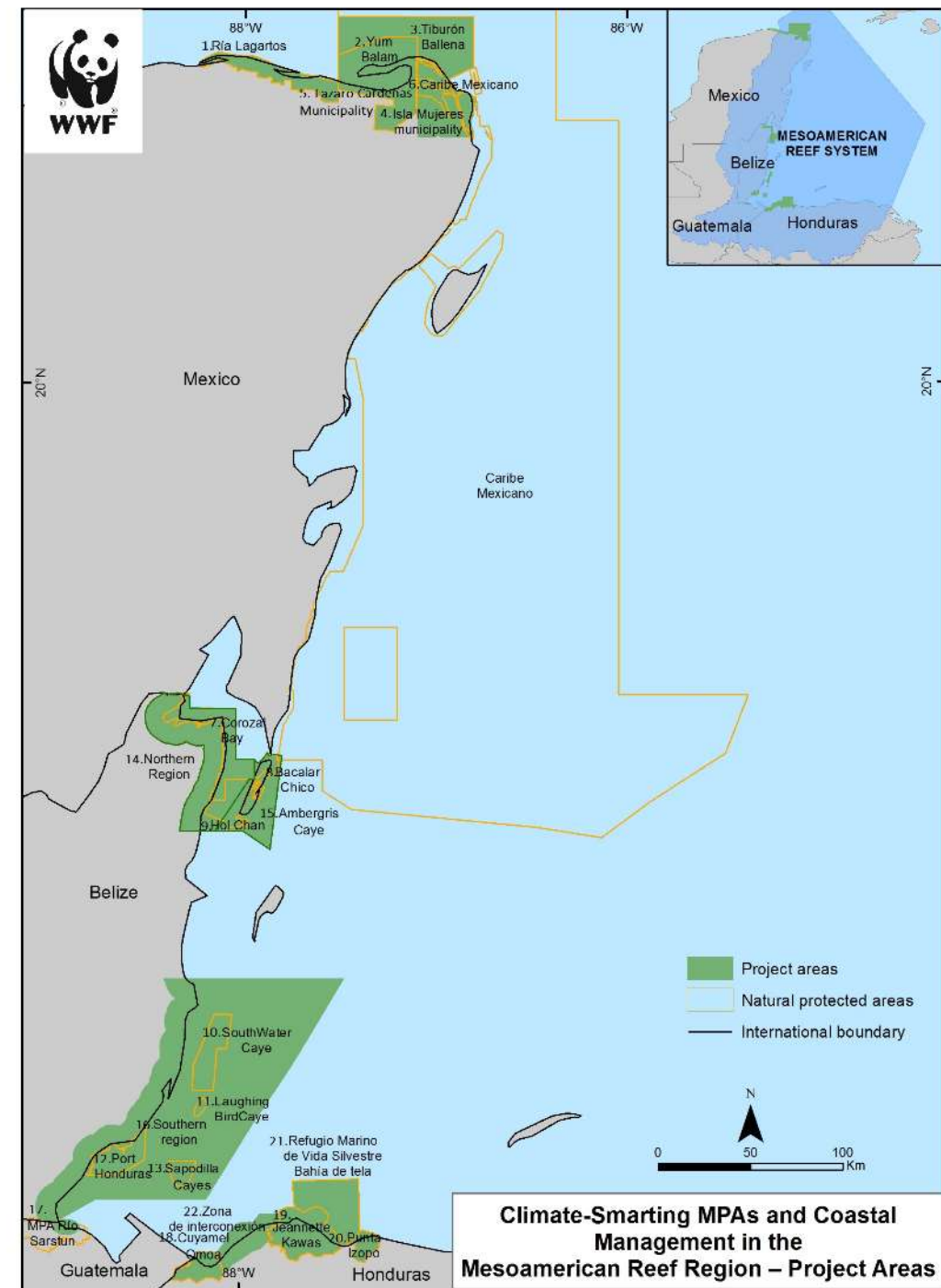
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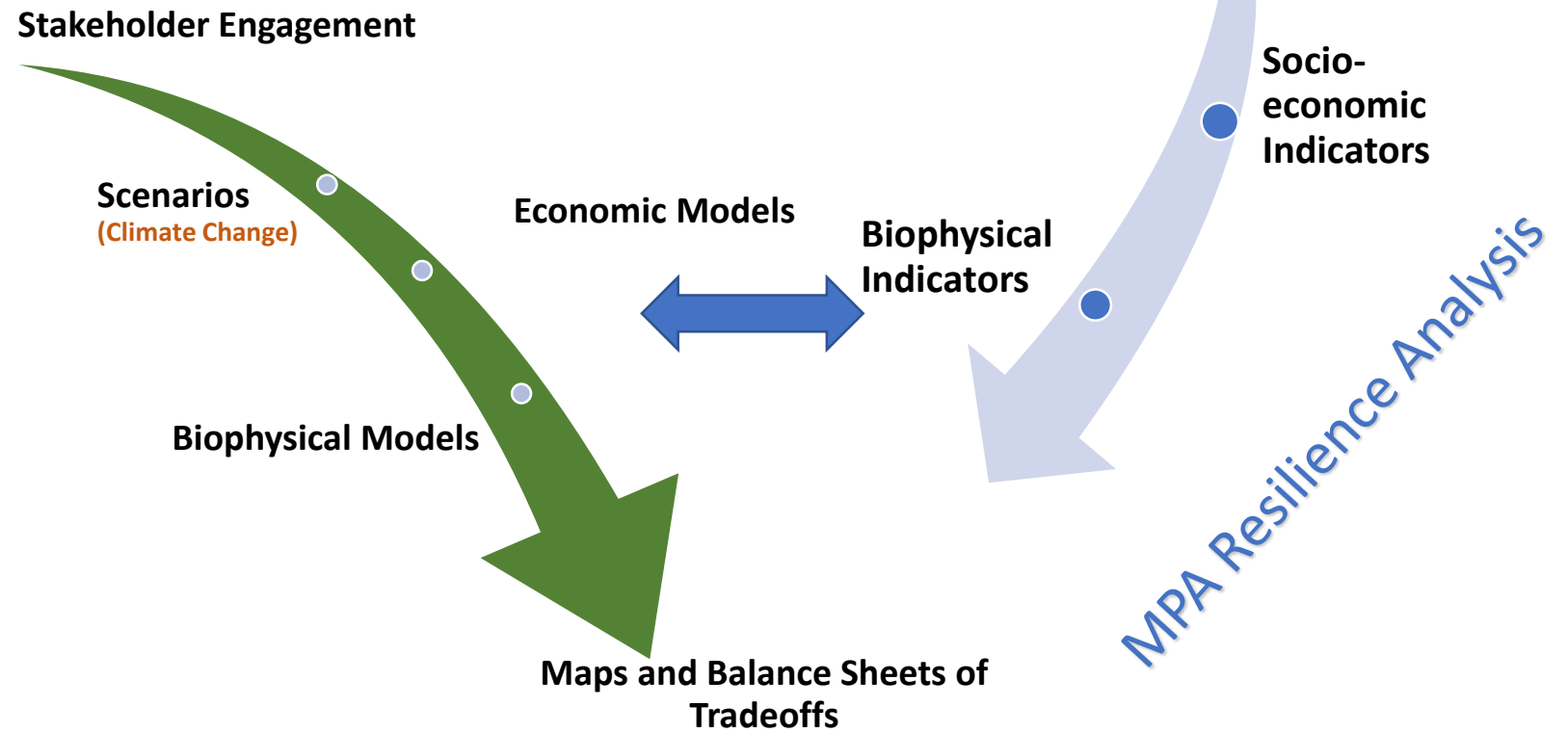
# Countries and work sites (marine protected areas and coastal zones)

- Mexico - 454,800ha and 233 km of coastline; 6 MPAs
  - Ría Lagartos / Tizimin, Río Lagartos y San Felipe, Yum Balam / Isla Mujeres y Lazaro Cárdenas, Tiburón Ballena
- Belize – 224,929ha of land and sea area and 296 km of coastline; 7 MPAs
  - Corozal Bay, Bacalar Chico, Hol Chan, Southwater Caye, Laughing Bird Caye, Port Honduras, Sapodilla Cayes, Ambergris Caye, Northern region, Southern region
- Guatemala - 13,788ha; 1 MPA
  - Río Sarstún / Livingston
- Honduras - 230,112ha of land and sea area including 131.5 km of coastline; 3 MPAs
  - Punta Izopo, Jeannette Kawas, Bahía de Tela, Cuyamel - Omoa, Zona de Interconexión





# INVEST – Integrated Valuation of Ecosystem Services and Tradeoffs





1. Decide whether to do a resilience assessment
2. **Select resilience indicators and anthropogenic stressors**
3. Collect or compile data
4. Analyze data
5. **Identify key drivers of differences in resilience scores**
6. Assess anthropogenic stress
7. Review climate exposure information
8. Review connectivity information
9. Formulate management recommendations
10. provide data and share results

# UNEP 10 step process

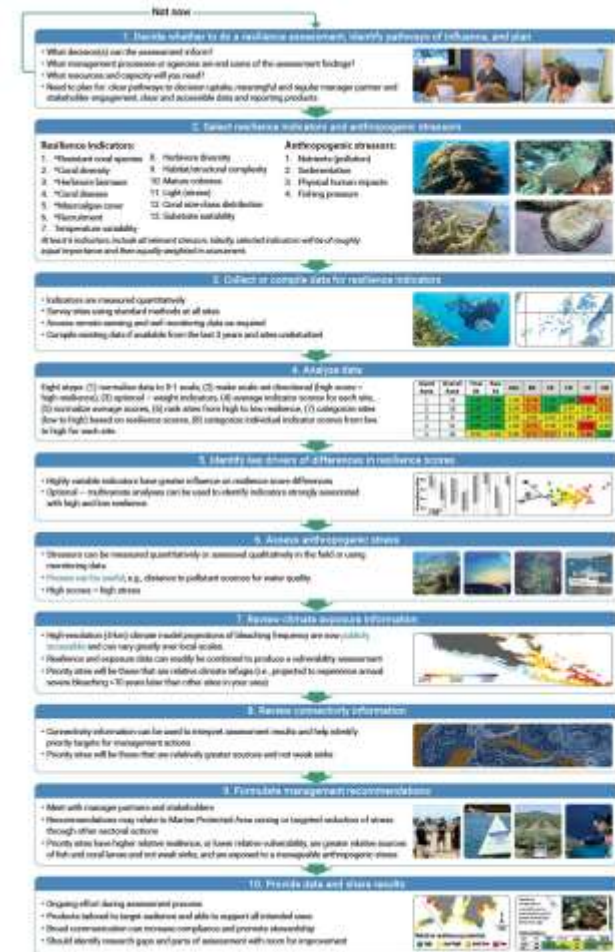
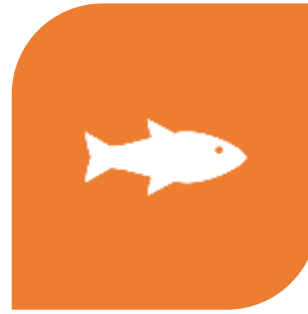


Figure 2. Resilience assessment framework.



# Indicators and Data Used



ECOLOGICAL  
PARAMETERS



PHYSICAL  
PARAMETERS



ECOSYSTEM SERVICES  
ASSESSMENT



OTHER KEY  
INDICATORS





# Target Groups

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- **Coastal communities** that depend on the natural resources within the project areas and that can benefit from increase adaptive capacity (main target group)
- **Marine Protected Areas** and Stakeholders
- **Authorities** local, national and regional decision-makers
- **Private Sector**



Is Belize able  
to Adapt to  
Climate  
Change?





Mangrove Replanting and Use for Land Retention





## Sustainable Use of Mangrove Forest



## Major project contributions

- **Generation of information and knowledge based on the most current scientific methods**
- **Strengthen capacities and coordination**
- **Support for decision-making**





# Project partners

- **Government Links**

- Mexico CONANP
- Belize CZMAI
- Guatemala MARN
- Honduras MiAmbiente/ICF

- **Implementing partners**

- WWF Germany
- WWF Mesoamérica
- WWF México
- WWF US & Columbia University
- Stanford University

- **Local executing partners**

- APAMO

- **Beneficiaries and key actors**

- Local communities
- Government authorities
- Private sector
- NGOs



**Stanford**  
University

