

Rising Oceans

Assessing Potential Impacts on Coastal Communities

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1. Introduction

- The Global Environment Facility (GEF) approved the Transboundary Waters Assessment Programme (TWAP)
- TWAP Project aims to provide an indicator-based assessment of transboundary groundwater, lakes, rivers, large marine ecosystems, and open oceans (present & projected scenarios)
- UNEP (Executing Agency) & Partners (Implementing Agencies)

Open Ocean Module of TWAP

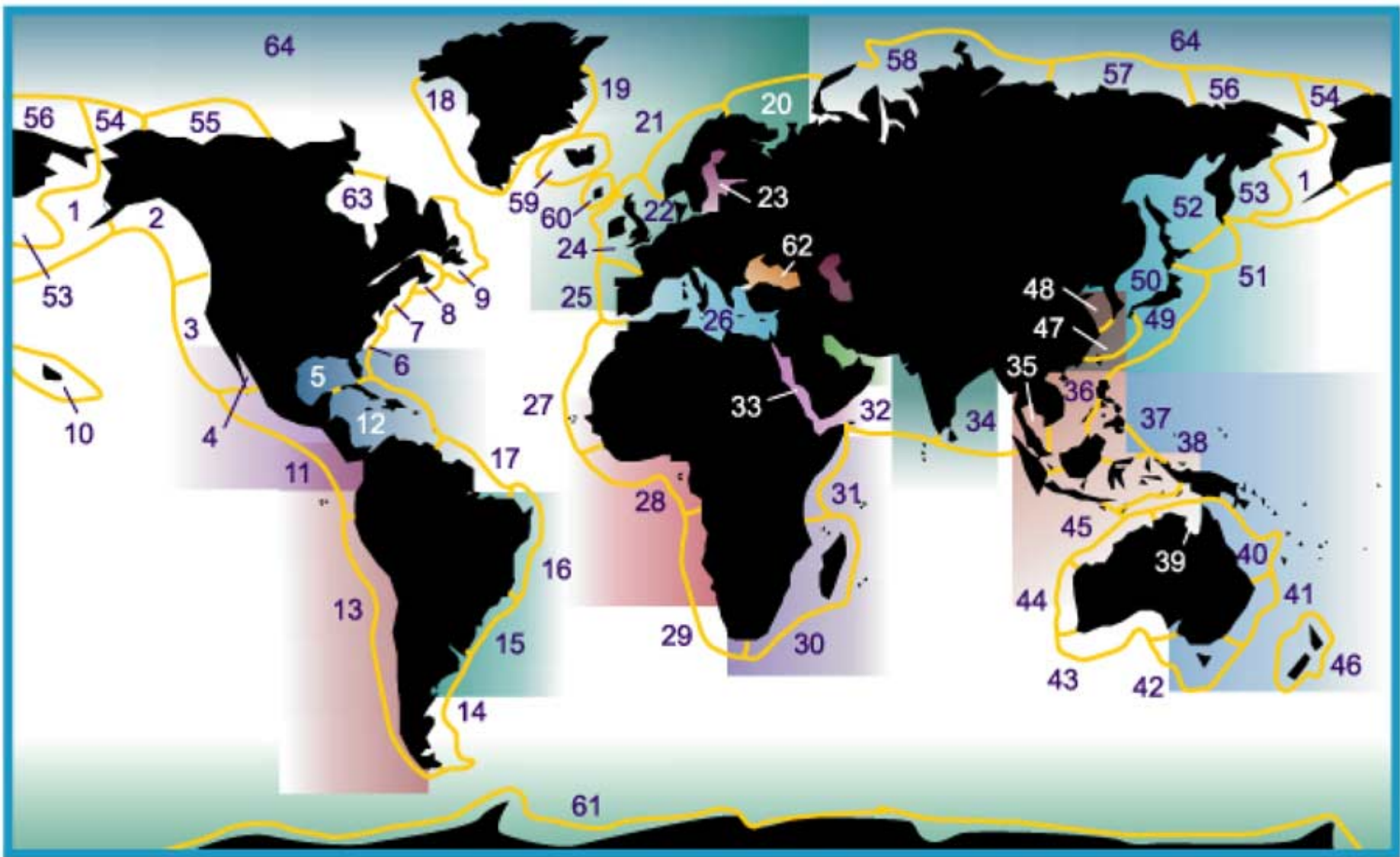
- Implementing Agency: IOC of UNESCO
- Goal: Develop indicators of local human & ecosystem vulnerability to global ocean environmental change in four themes: **climate**, ecosystems, fisheries & pollution. These will be coupled with an assessment of global ocean-related governance mechanisms.
- GEOWOW (GEOSS interoperability for Weather, Ocean & Air) provides the platform for data assembly & analysis

2. Study on Impacts of Sea Level Rise on Coastal Communities

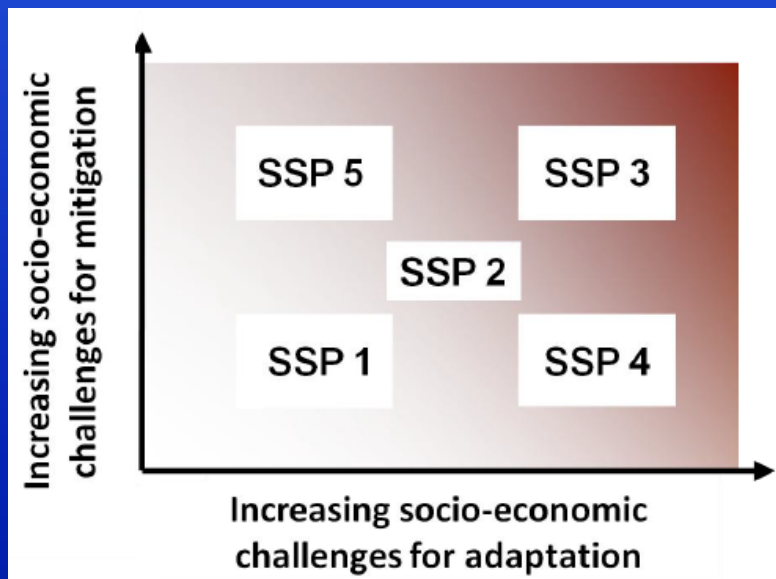
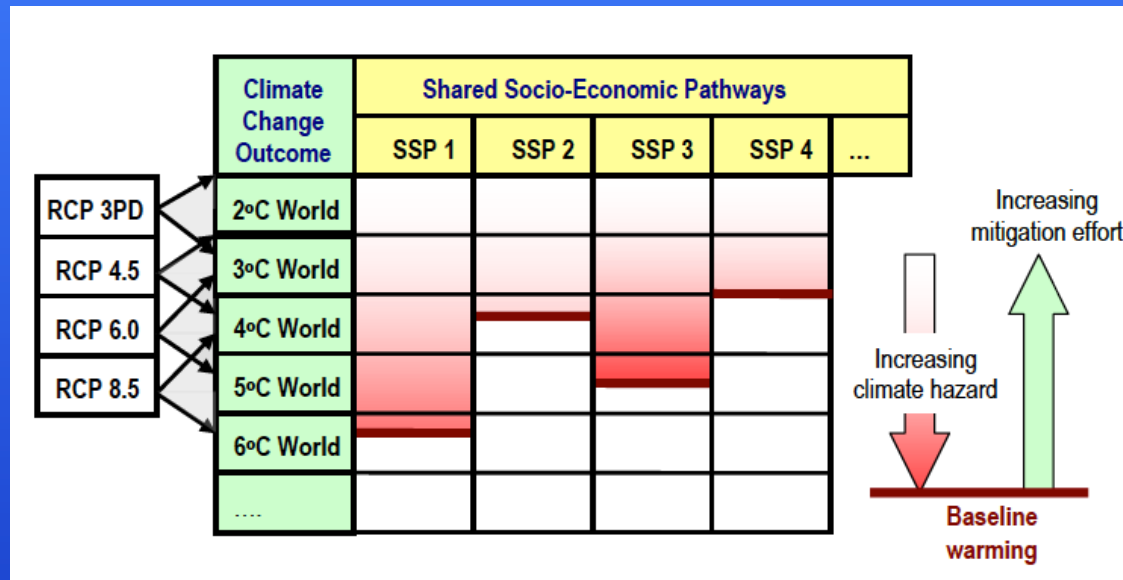
Objectives:

- Use the most robust rate estimates of global and regional sea level rise to examine potential impacts on coastal communities
- Examine potential sea level rise impacts at subnational, large marine ecosystem and basin scales

Large Marine Ecosystems



RCP-SSP Scenarios



- SSP1 = SRES B1
- SSP2 = SRES B2
- SSP3 = SRES A2
- SSP4
- SSP5 = SRES A1F1

Data Inputs

Data	2010	2050 RCP-SSP scenarios	2100 RCP-SSP scenarios
1. Sea level rise	CMIP5	CMIP5	CMIP5
2. Land use	RCP Database	RCP Database	RCP Database
3. Population	SSP Database	SSP Database	SSP Database
4. GDP	SSP Database	SSP Database	SSP Database
	REFERENCE DATA SETS		
1. Elevation	ACE2 (2009)		
2. Shorelines	GSHHGv2.2.2 (2013)		
3. Wetland	Global Lakes & Wetland Database (2012)		
4. Agriculture	GlobCover 2009		
5. Population	2000 GRUMP 2010 Projection		
6. GDP	World Bank Indicators 2010		

Indicators of Potential Impacts

- Permanently inundated coastal land
 - ✓ Built up area
 - ✓ Agriculture land
 - ✓ Wetlands
- Displaced population (urban, rural)
- Income loss from displacement

Expected Outputs

For each RCP-SSP Scenario

- ✓ Area Loss maps
- ✓ Displaced populations
- ✓ Potential income losses

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