DRR in AP Region Webinar Series No 4

Climate Resilience and Risk Governance in Malaysia: Retrospective and Prospective View

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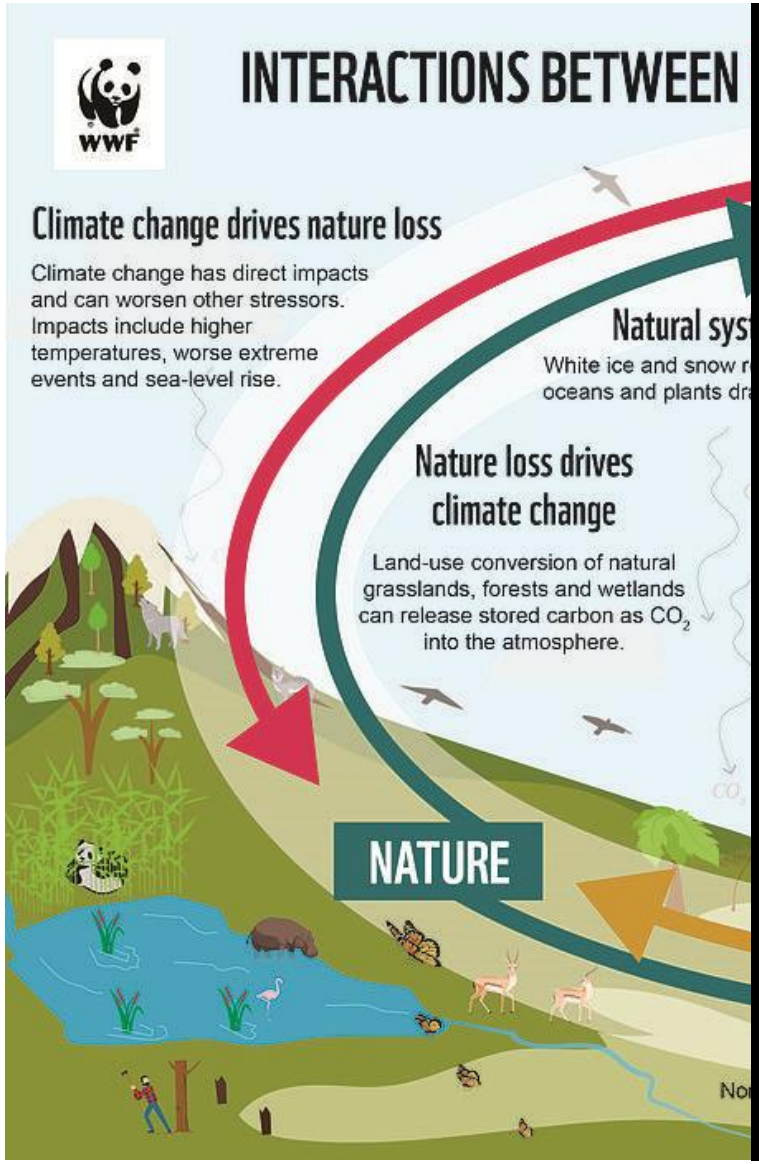
27 Feb 2025

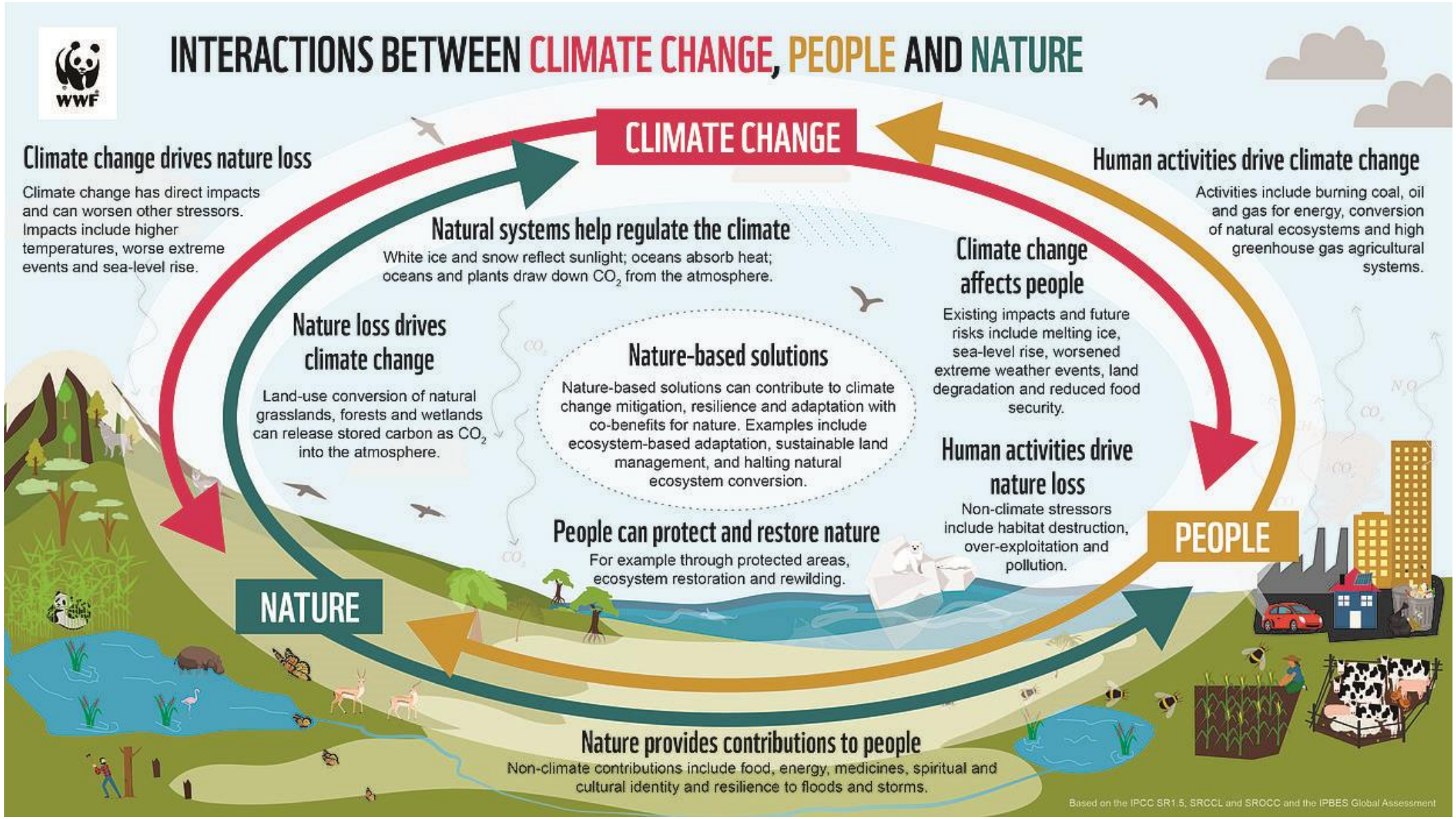
Contents

Context



- Risk assessed using sectoral approach
- Response measures usually address a specific risk
- Increasingly we see that risks are not linear, they are multi-pronged and can have cascading consequences – triggering a series of events
- Need to move to a more comprehensive approach, one that addresses multiple issues
- We need to fix the root cause

Context


INTERACTIONS BETWEEN CLIMATE CHANGE, PEOPLE AND NATURE
CLIMATE CHANGE
Climate change drives nature loss
Climate change has direct impacts and can worsen other stressors. Impacts include higher temperatures, worse extreme events and sea-level rise.
Natural systems help regulate the climate
White ice and snow reflect sunlight; oceans absorb heat; oceans and plants draw down CO_2 from the atmosphere.
Human activities drive climate change
Activities include burning coal, oil and gas for energy, conversion of natural ecosystems and high greenhouse gas agricultural systems.
Nature loss drives climate change
Land-use conversion of natural grasslands, forests and wetlands can release stored carbon as CO_2 into the atmosphere.
Nature-based solutions
Nature-based solutions can contribute to climate change mitigation, resilience and adaptation with co-benefits for nature. Examples include ecosystem-based adaptation, sustainable land management, and halting natural ecosystem conversion.
Climate change affects people
Existing impacts and future risks include melting ice, sea-level rise, worsened extreme weather events, land degradation and reduced food security.
Human activities drive nature loss
Non-climate stressors include habitat destruction, over-exploitation and pollution.
People can protect and restore nature
For example through protected areas, ecosystem restoration and rewilding.
NATURE
PEOPLE
Nature provides contributions to people
Non-climate contributions include food, energy, medicines, spiritual and cultural identity and resilience to floods and storms.
Based on the IPCC SR1.5, SRCCL and SROCC and the IPBES Global Assessment

South East Asia Climate Adaptation and Resilience Alliance (SEACAR Alliance)

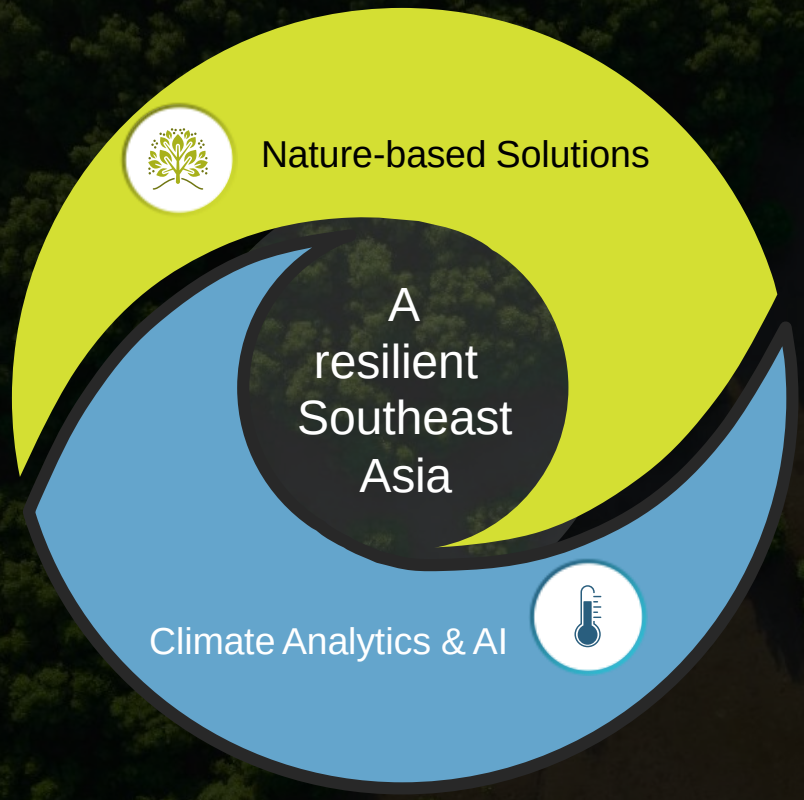
The SEACAR Alliance is a collaboration that emphasises the importance of nature based solutions, climate analytics and AI in advancing the resilience of cities and communities.

BCG | thinkCITY | WWF

Nature and AI combined offer high impact solutions

Southeast Asia is in a prime position to harness the power of nature

- SEA is disproportionately rich in natural assets Home to 31% of the world's mangrove and seagrass beds, 50% of tropical peatlands and other vital ecosystems
- Nature-based solutions provide multiple benefits beyond A&R, including mitigation, biodiversity conservation and livelihood creation
- NbS can be up to 50% cheaper than traditional grey infrastructure; however, quantifying this is often uncertain and challenging

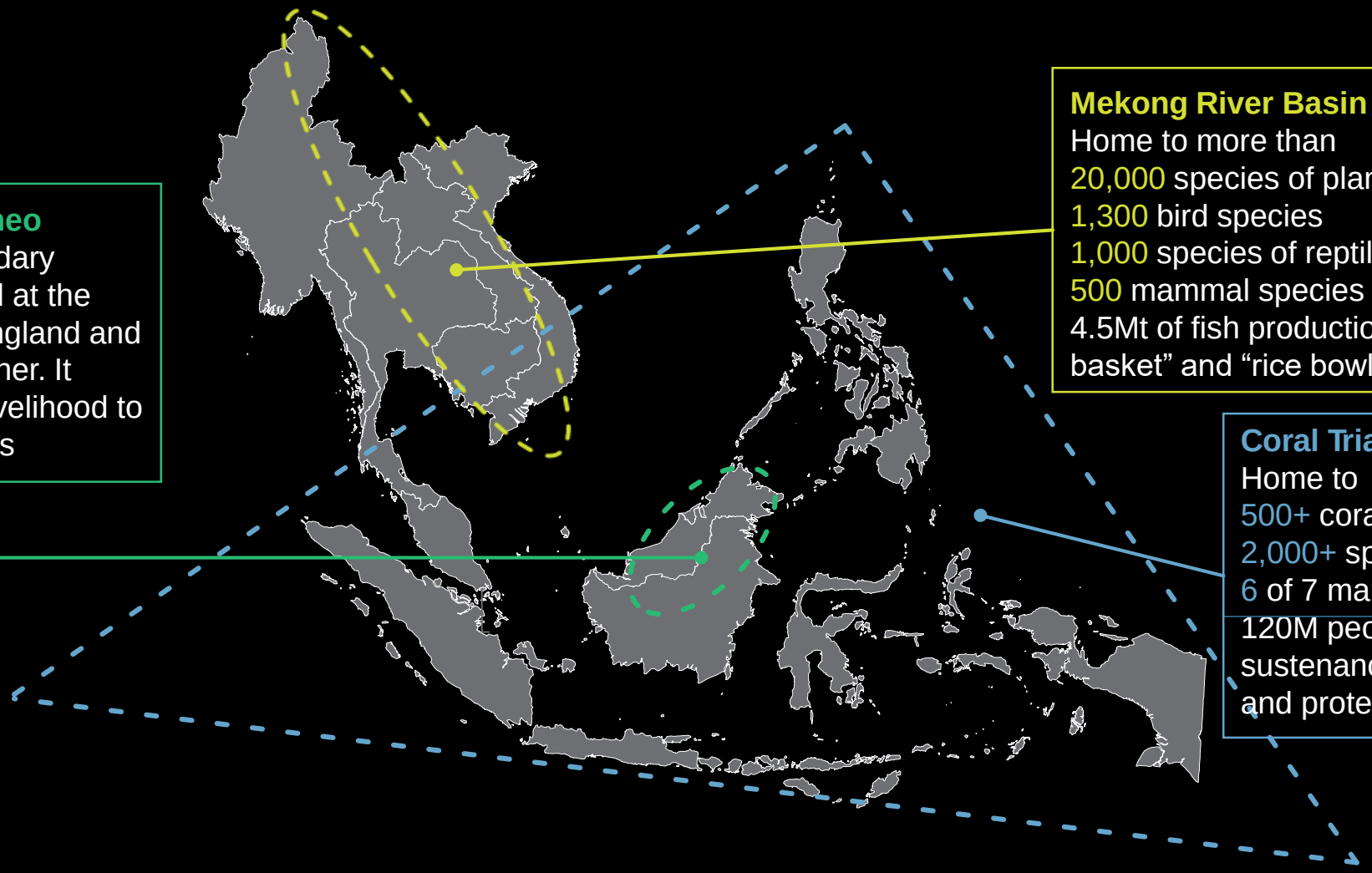


Climate Analytics & AI can be applied to accelerate this process

- AI models minimize the uncertainty in deploying NbS for A&R simulations that quantify cost of inaction and total impact across economic, social and natural dimensions
- 10X multiplier of human technical capacity Advanced algorithms process large and complex datasets beyond human capabilities
- Fast track insight generation by real-time updates in models minimizing time to action

Southeast Asia is rich in natural capital and biodiversity

The Heart of Borneo
Largest transboundary forests in the world at the size of whole of England and Scotland put together. It provides life and livelihood to 11 million Borneans

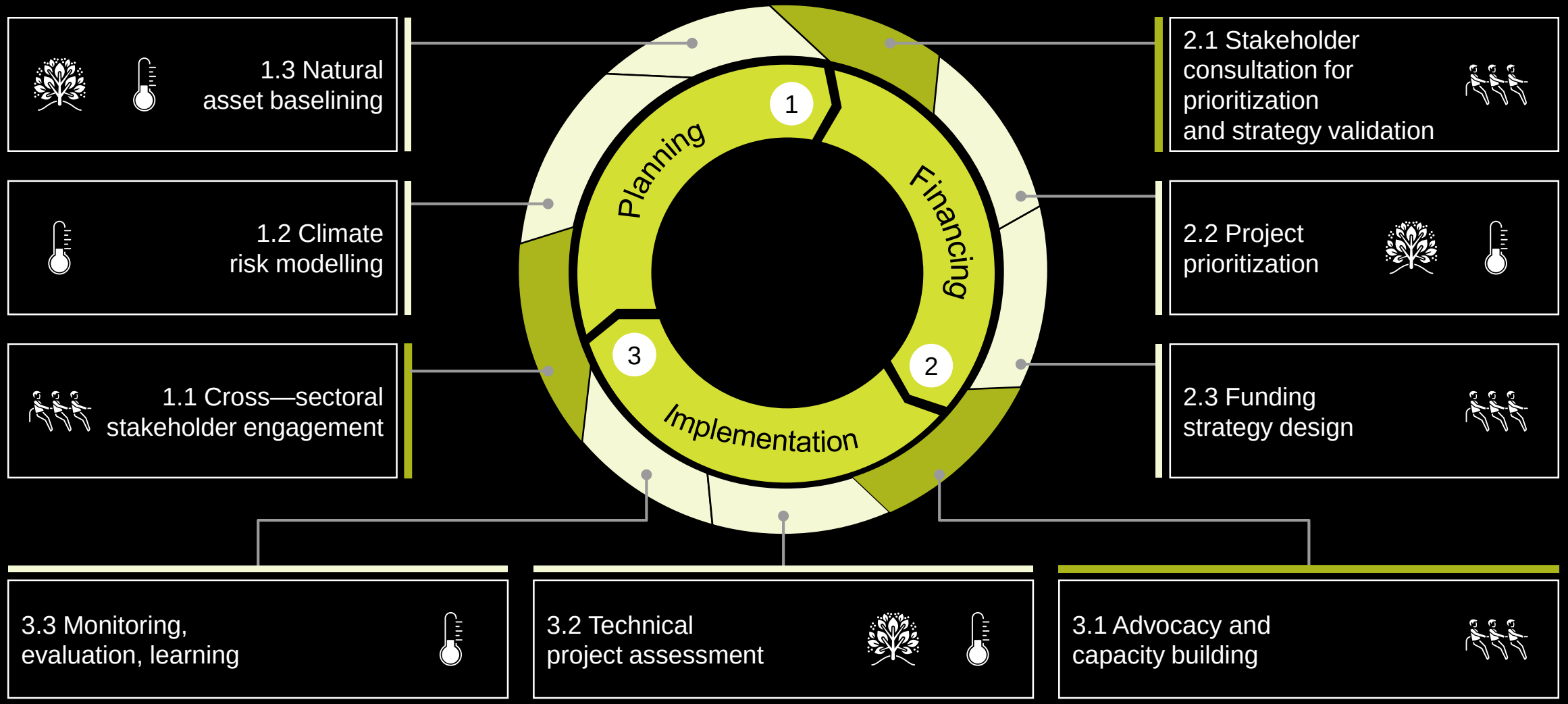


Mekong River Basin
Home to more than
20,000 species of plants
1,300 bird species
1,000 species of reptiles and amphibians
500 mammal species
4.5Mt of fish production – Asia's "fish basket" and "rice bowl"

Coral Triangle[1]
Home to
500+ coral species
2,000+ species of reef fish
6 of 7 marine turtle species
120M people receiving sustenance, livelihoods and protection

1. This illustration represents the Southeast Asia part of the Coral Triangle, areas beyond that include Solomon Islands and Papua New Guinea

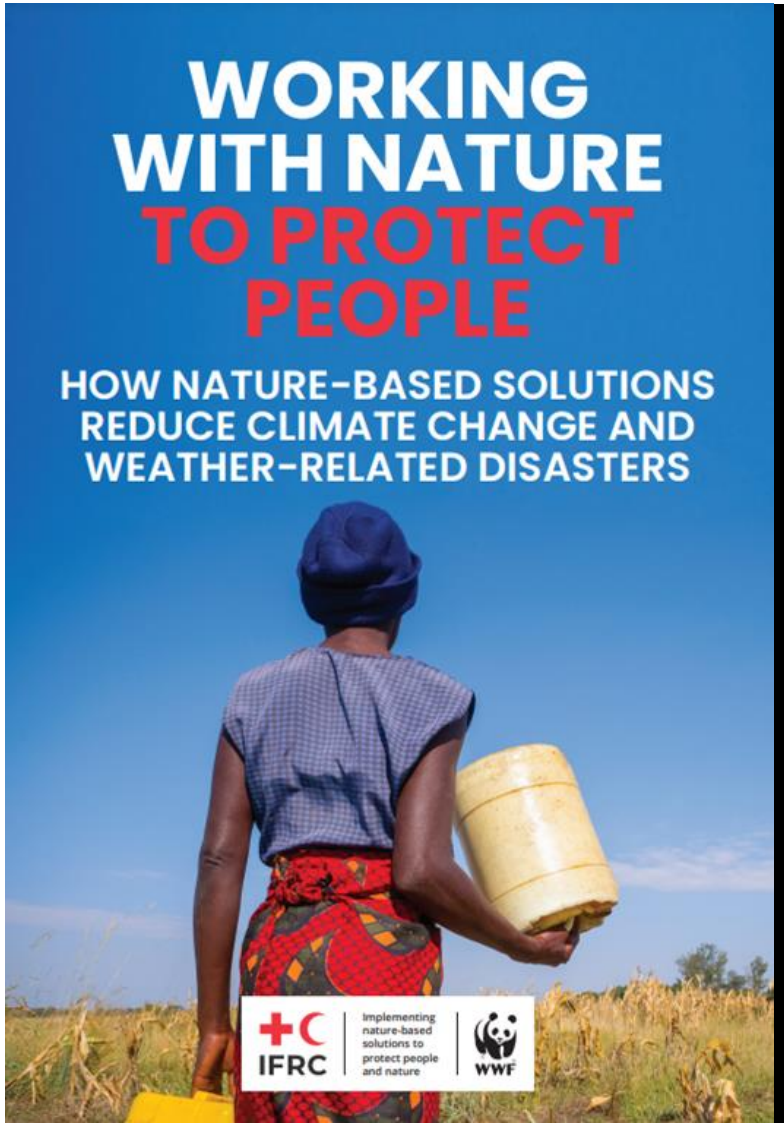
Climate Resilience Playbook: Nature, AI and Collaboration



Scan to download
SEACAR Alliance’s Report

Be part of SEACAR

JUNE 2, 2022:
LAUNCH OF IFRC/WWF FIRST JOINT REPORT

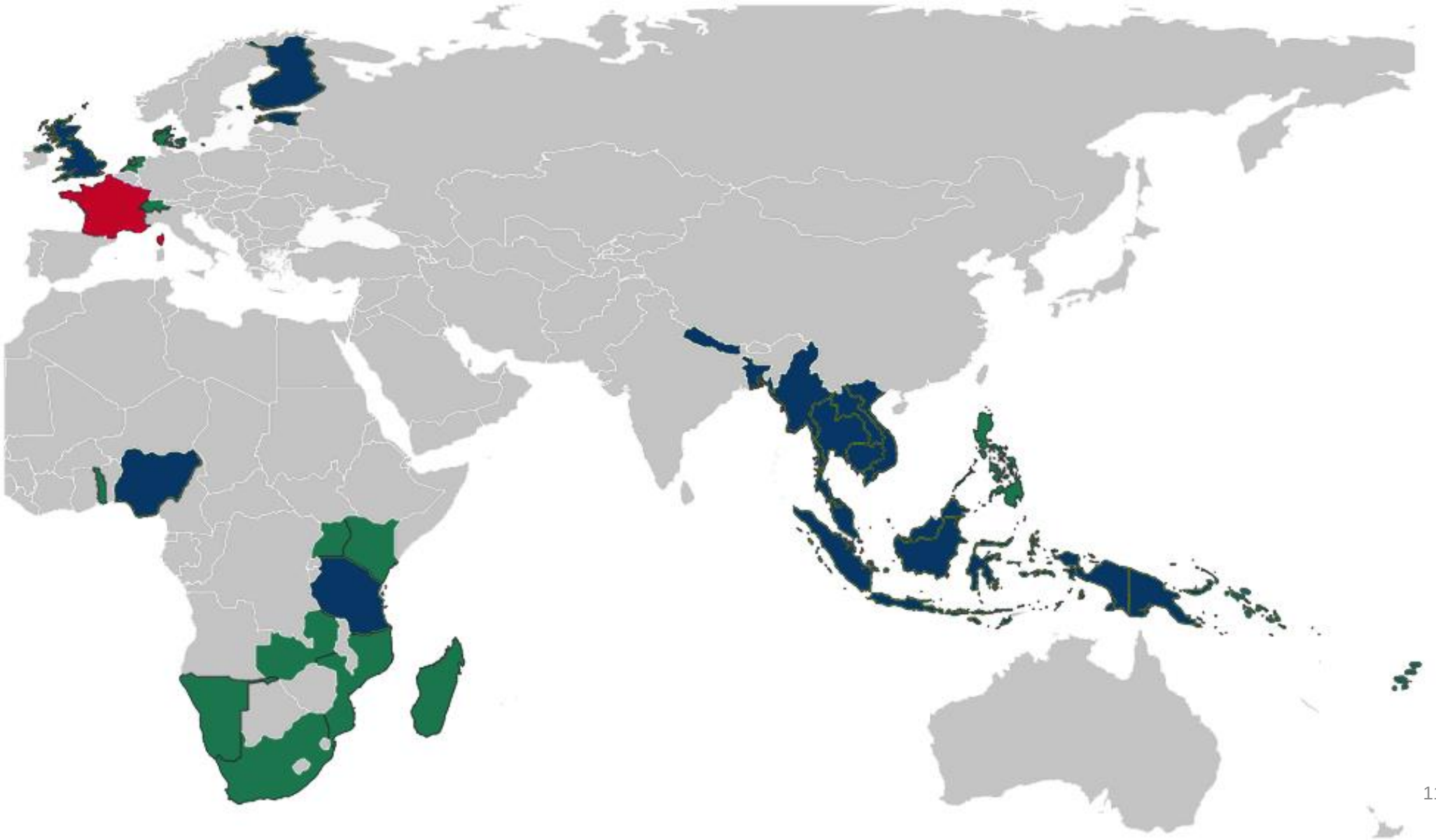


First joint flagship report between WWF and IFRC

Working with Nature to Protect People: How Nature-based Solutions Reduce Climate Change and Weather-Related Disasters

WWF IFRC PARTNERSHIPS AT THE COUNTRY LEVEL

- It has engaged with an office of IFRC/WWF
- It is currently engaged with an office of the IFRC/WWF
- It has a written agreement with an office of IFRC/WWF and implement our work soon



WWF NATURE-BASED SOLUTIONS DATABASE

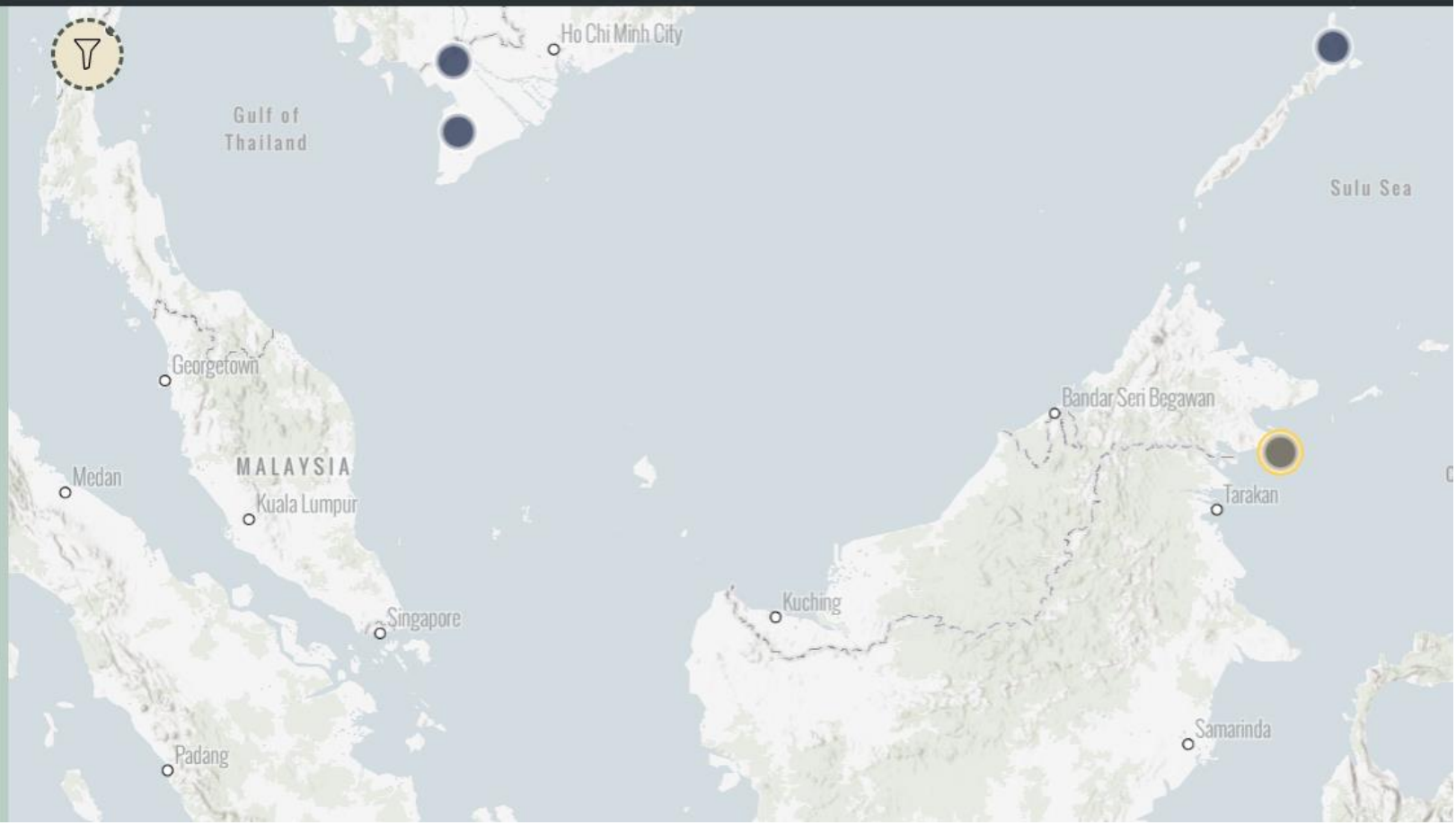
PROJECTS | INITIATIVES | PIPELINE

GENERAL | RATIONALE | INDICATORS | GOVERNANC >

Local Early Action Plan, Climate Change Adaptation in Mabul Island, Semporna Sabah

PROJECT SUMMARY: Mabul Island is considered highly vulnerable to climate change impacts based on Coastal Integrity Vulnerability Assessment Tools (CIVAT) in terms of typhoons, waves and sea level rise. Hence, the government, NGOs, community and tour operators developing Local Early Action Plan aims to build community resilience and be prepared for climate change impacts in future.

Coral restoration has been identified as an adaptation measure suggested by Mabul community to tackle the beach erosion and



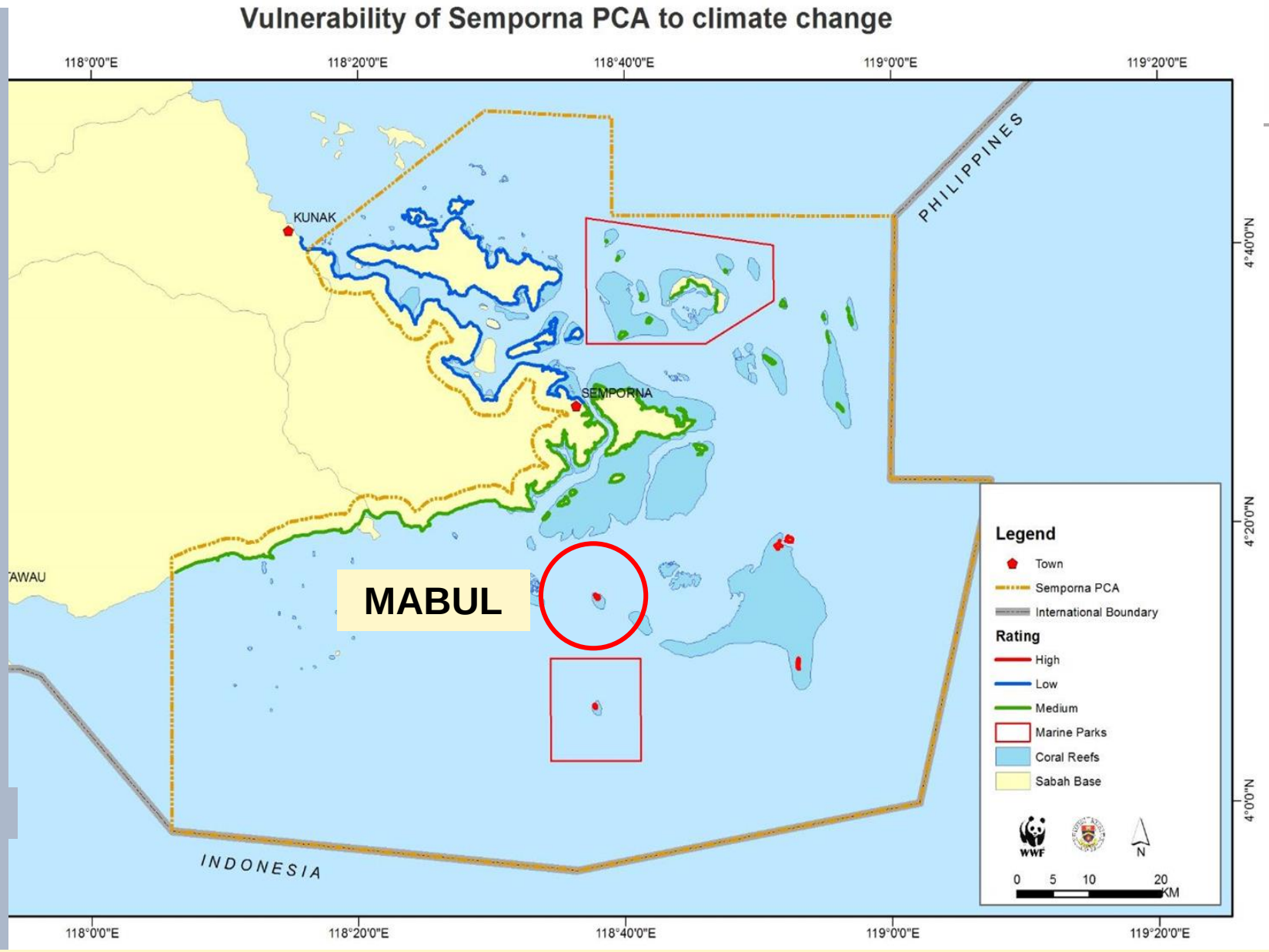
COASTAL INTEGRITY VULNERABILITY ASSESSMENT TOOLS

- ❑ Study in 2015, WWF-Malaysia & UMS
- ✓ Sea level rise
- ✓ Waves during monsoon
- ✓ Tides

- ❑ Result: Highly Vulnerable
  - Mabul (2.05 km)
  - Sipadan
  - Si Amil
  - Denawan
  - Ligitan

- ❑ Vulnerability:

High: 13.36km (1.77%)
Medium: 373.01km (49.3%)
Low: 370.17km (48.93)



https://www.wwf.org.my/?20725/Climate-Change-Vulnerability-Assessment-of-Semporna-Priority-Conservation-Area-PCA

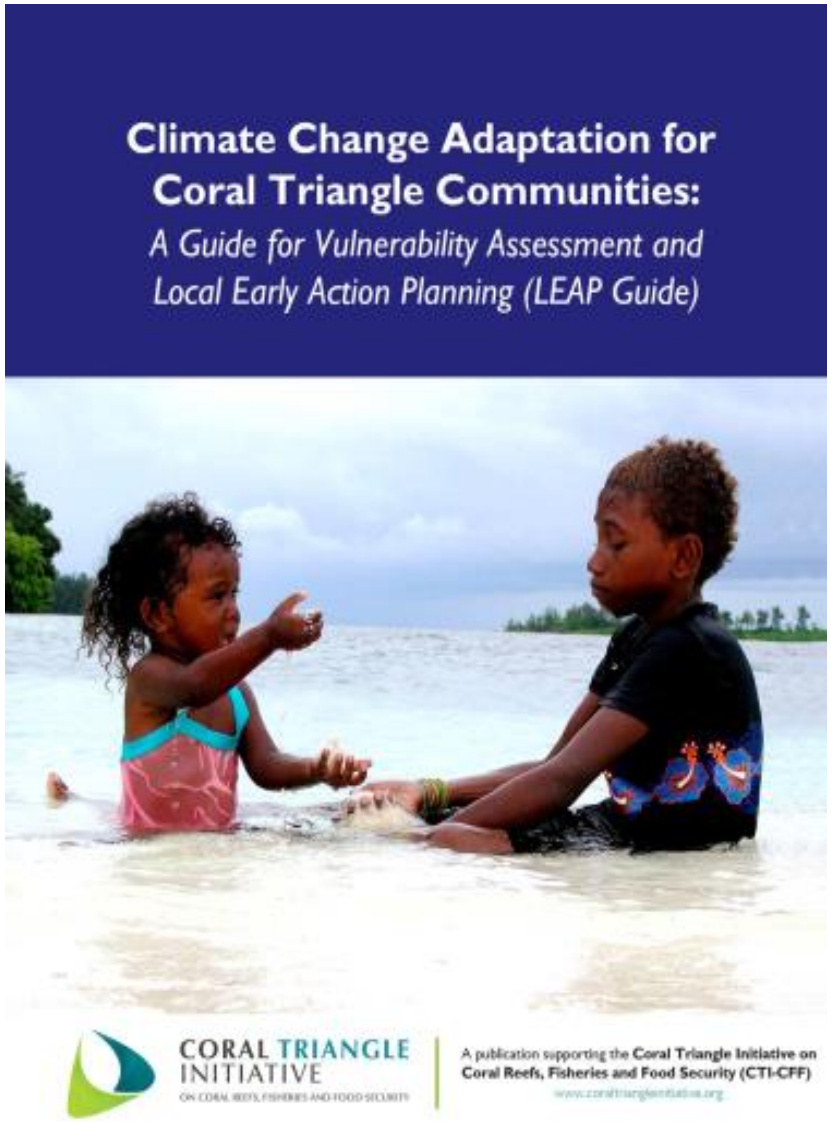
Local Early Action Plan (LEAP)

PURPOSE

Reduce the vulnerability of coastal communities to impact of climate change.

USE

Can be produced as own plan or produced to integrate with existing plan.



GUIDE

As a guide to all parties to work and improve livelihood of communities.

INVOLVEMENT

Community is given the opportunity to develop plan together.

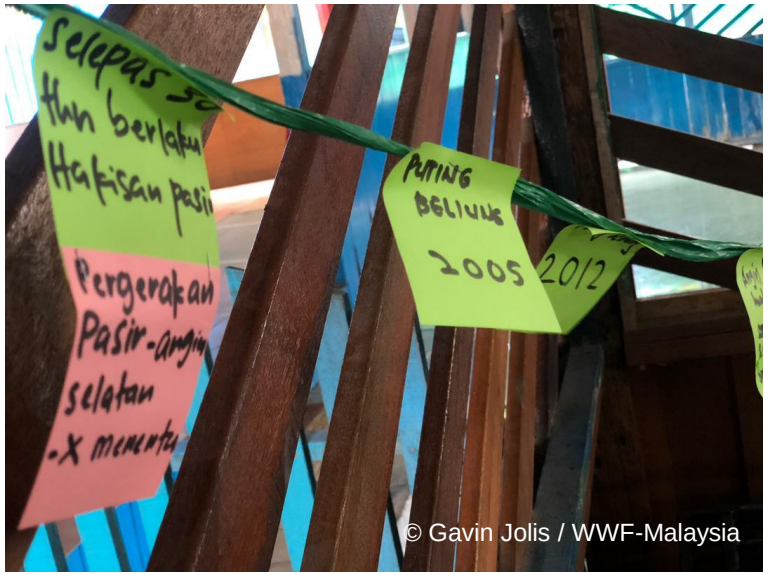
Develop the Local Early Action Plan - Climate Change Adaptation

Step 1 – Getting Organised for CCA Planning

Establish the Local Early Action Plan Committee, Climate Change Adaptation for Mabul Island.

Develop the Local Early Action Plan - Climate Change Adaptation

Step 2 – Telling Your Climate Story



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Conduct workshop with communities to record the climate change impacts that they experienced in Mabul Island.

1970	1980	1986	1990	1995	2000	2016	2017	2019
Start of migration		School opened		SMART moved to Mabul Island		3 houses damaged by flood		2 month drought
	Storm		Heavy rain for a week				Storm	Roof blown away by storm

Develop the Local Early Action Plan - Climate Change Adaptation

Step 3 – Conducting a Vulnerability Assessment

Groundwater

Coral reefs

Turtle

Tourism

Fisheries

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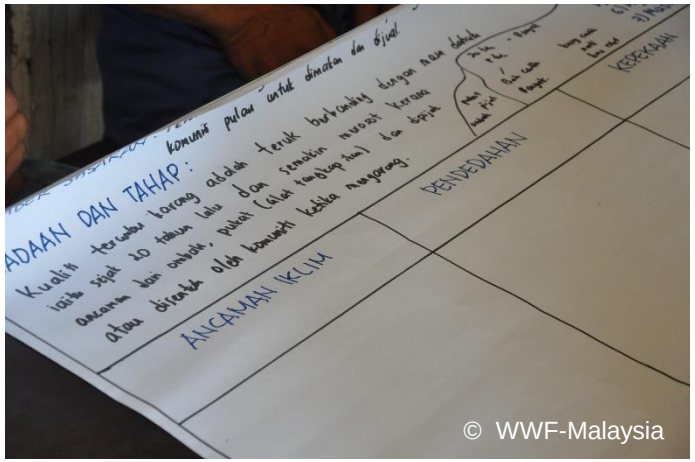

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Vulnerability Rating Matrix

POTENTIAL IMPACT	ADAPTIVE CAPACITY		
RATING	Low	Medium	High
High	High	Medium	Medium
Medium	Medium	Medium	Low
Low	Low	Low	Low

Conduct the second workshop with Mabul communities to assess the resources they relying on and refer to the matrix models.

Develop the Local Early Action Plan - Climate Change Adaptation

Step 4 – Developing Your Local Early Action Plan

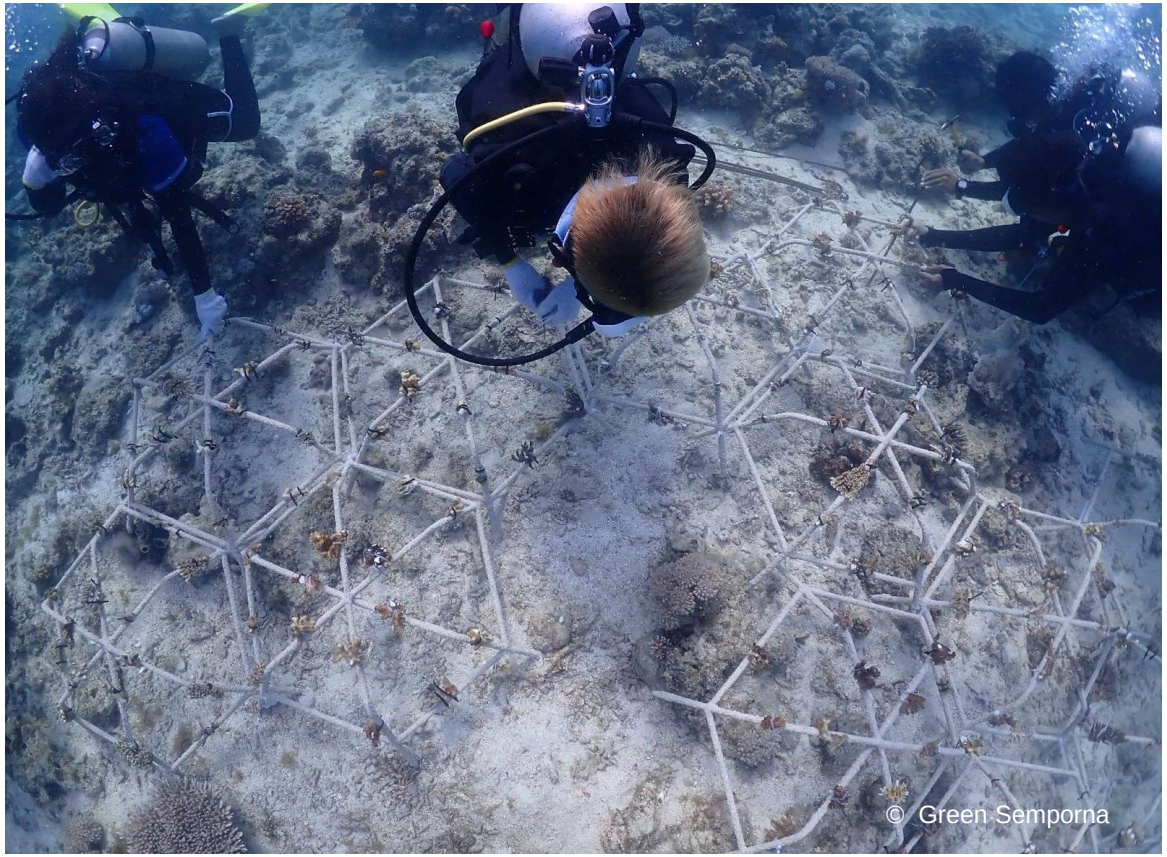
		temperatures.	
13	Implement a coral planting project.	Help to reduce a coastal erosion and restore damaged coral reefs.	3 year and continously

Developing adaptation measures with involvement from all stakeholders in federal, state and district level.

MABUL CLIMATE LEADERS

- Increase the resilience of community Mabul to impacts of climate change.
- Capacity building in education awareness, knowledge and skills of youths in Mabul Island to conduct the climate action.

MARRS COMPENTENCY PROGRAMME & LEARNING EXCHANGE



- Coral restoration training involving 13 youths.
- Learning exchange with aim of providing proper guidance and information on the MARRS coral restoration technique.