



Monitoring & Evaluation System for MPA & MPA Network

UP MARINE SCIENCE INSTITUTE

28 NOVEMBER 2018

ILOILO CONVENTION CENTER, ILOILO CITY

The Philippine Archipelago as the center of the world's marine biodiversity

- ▶ Philippine islands – “peak of marine biodiversity (most rigorously for marine shore fishes),” “higher concentration of species per unit area” (Carpenter & Springer, 2005)
- ▶ The Philippines is a strategic convergence area for generating significant contributions both to marine science & to society.
- ▶ *Special attention* to marine conservation efforts is given in the Philippines

Our Strategic Location



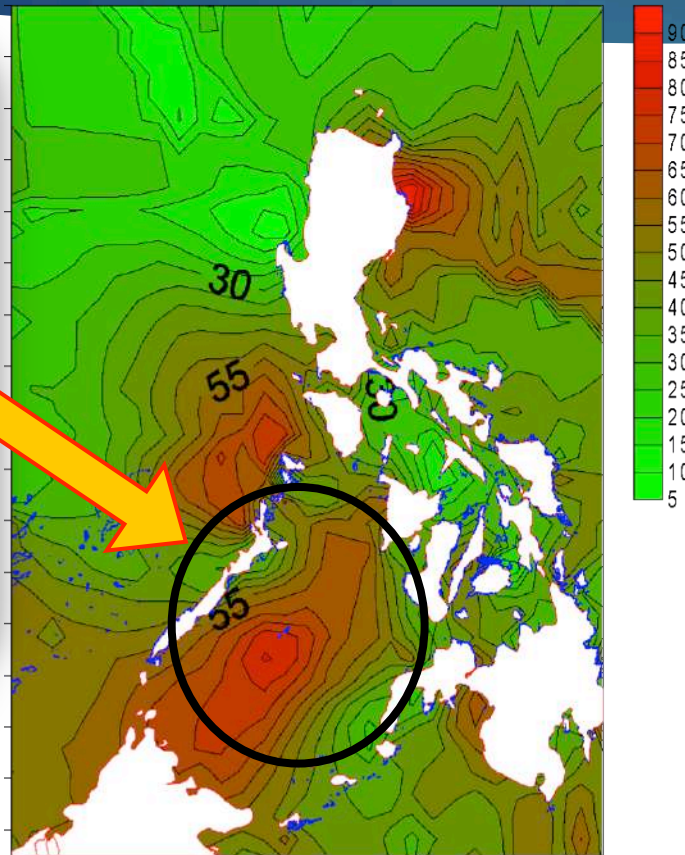
Our heritage under **threat!**

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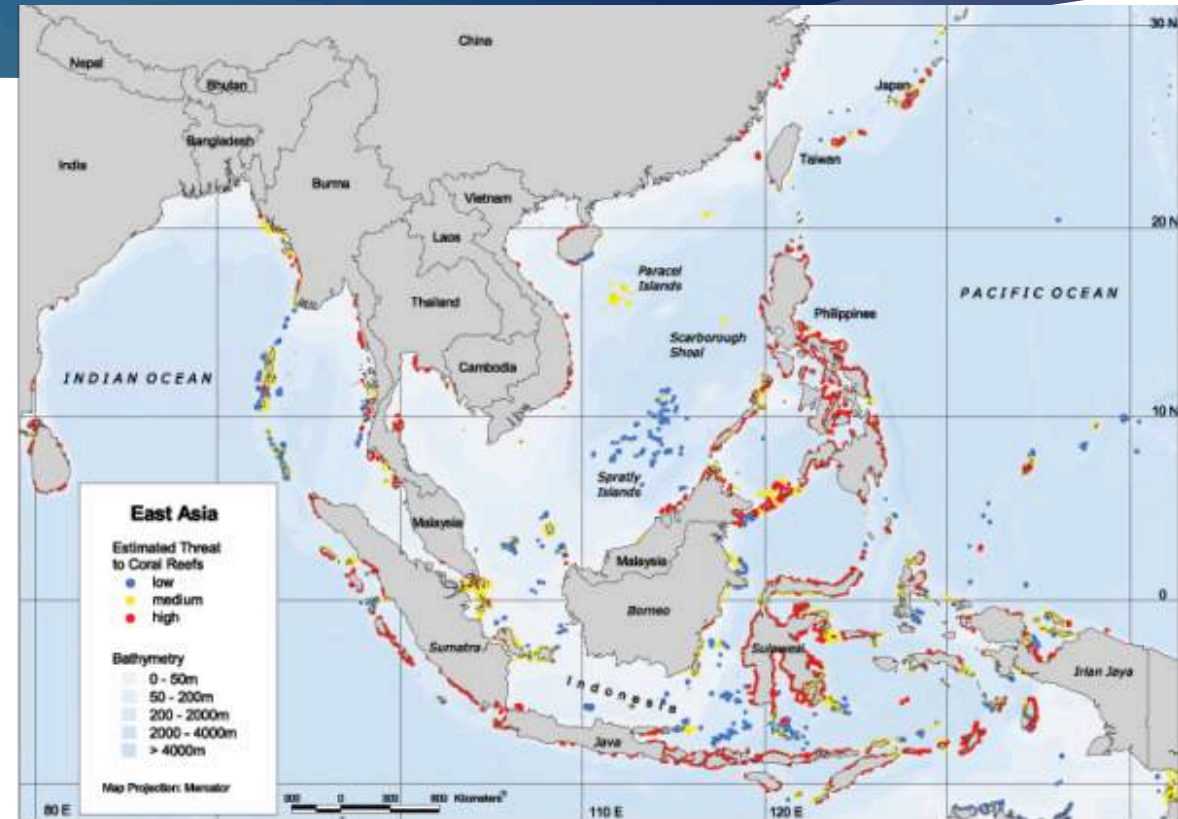
- *Fish biodiversity declines in the center of the center of marine biodiversity → the Philippines → the Visayan Seas*



Pattern of species richness based on sampling in early to mid 1900s (Carpenter and Springer 2005)



Interpolated species diversity map of fish species in the Philippines from fish visual census data (1990s to 2008) (Nañola et al, 2010)



<https://www.wri.org/resources/maps/east-asia-reefs-risk-regional-map>

Anthropogenic Threats: Coastal development, Sedimentation, Overfishing/ Overexploitation, Marine-based pollution

Marine Protected Areas (MPAs)

"A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values." (IUCN-WCPA 2008)

► Key elements of effective MPAs:

- ✓ Adaptive management plan that has been consistently supported and implemented by a functional management body
- ✓ Sufficient size to support ecological processes and social conditions
- ✓ Appropriately designed to cope with threats and disturbances



Marine Protected Area Networks (MPAN)

“A collection of individual MPAs or reserves operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve.” (IUCN- WCPA 2008)

► **Promotes connectivity in terms of :**

✓ **Governance (Institutional)**

- ✓ Expansion of management, joint initiatives from planning to management (e.g. law enforcement, M&E)

✓ **Ecological (biophysical)**

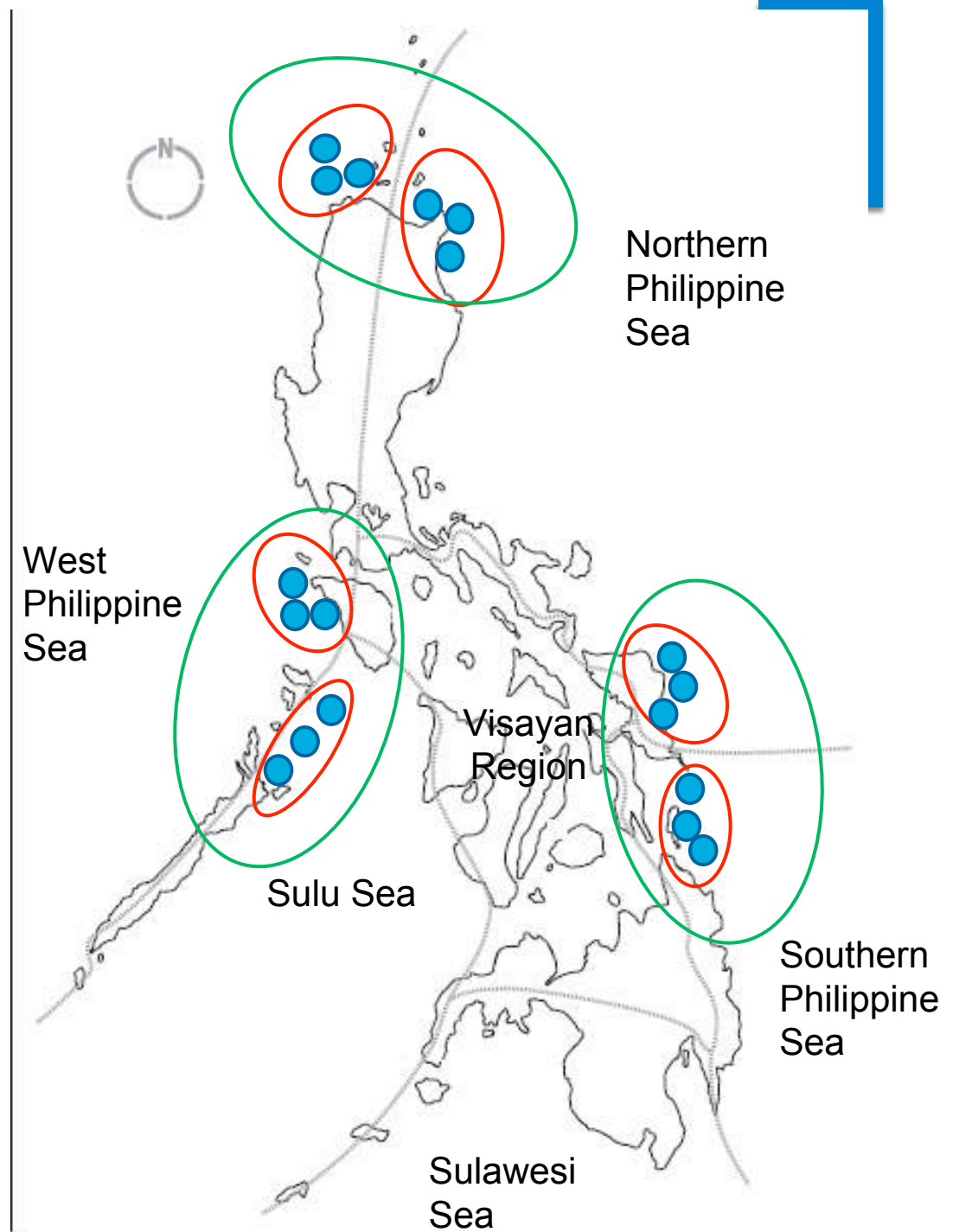
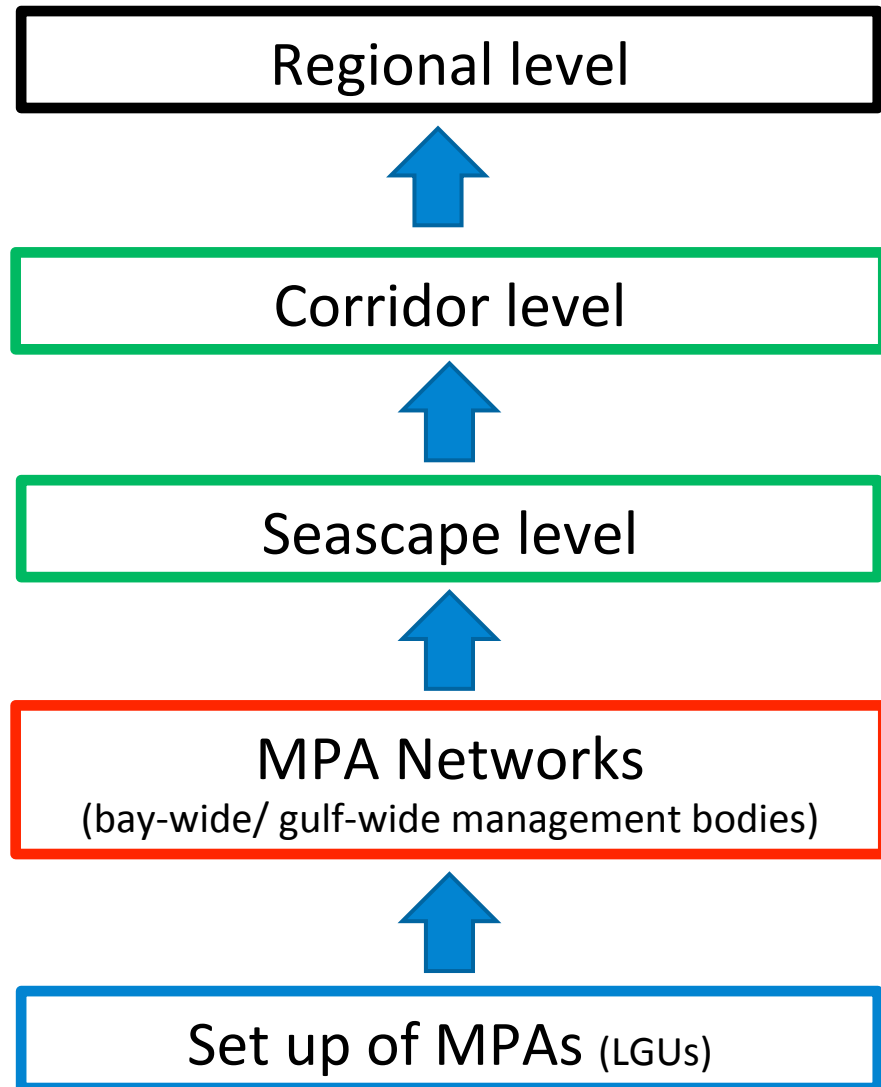
- ✓ Expansion of protection of critical and ecologically connected habitats (e.g. migration corridors, nursery and aggregation sites, source and sink sites)

✓ **Social and economic**

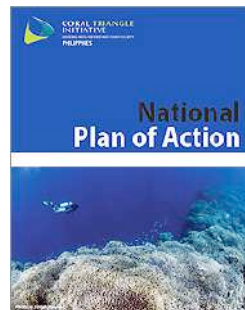
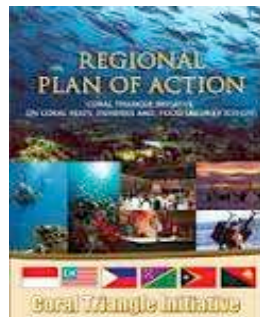
- ✓ Social cohesion and equitable benefits (e.g. improved awareness, social groups, biodiversity friendly enterprises)



Scaling up Framework



We have our initial maps...



Where are we going?



We know where we are...



How do we keep track?

Monitoring and Evaluation (M&E)

Monitoring

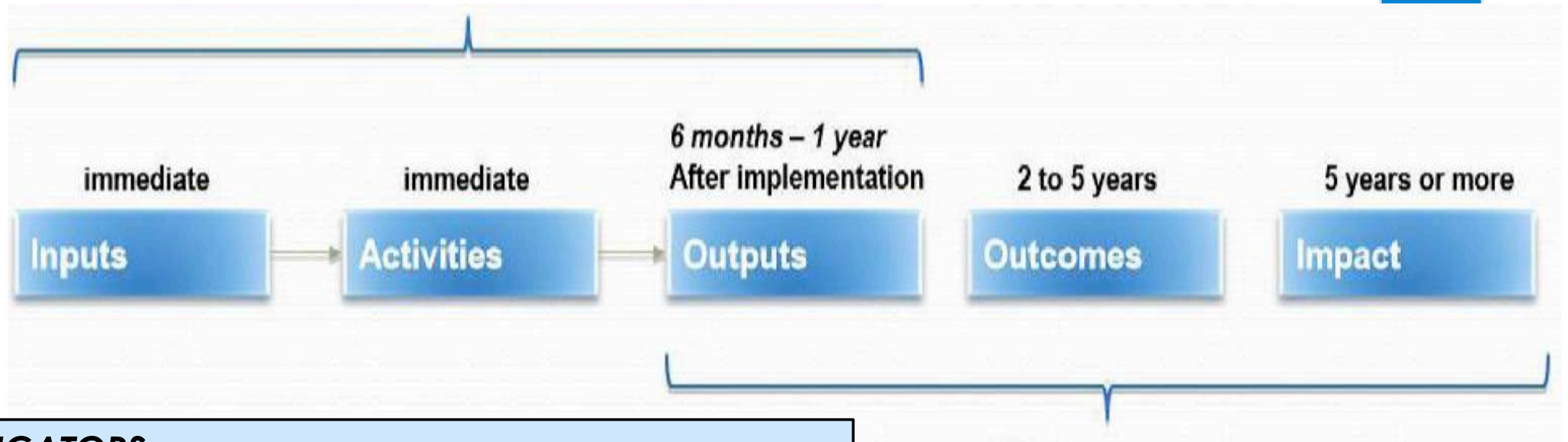
- Systematic and routine collection and analysis of data in order to determine the progress of an activity or the results within a plan of action or specific implementation period.
- focuses on the measurement of the following aspects of an intervention:
 - On processes external to an intervention (**IMPACT**)
 - On processes inherent to a project or program (**OUTCOME**)
 - On quantity and quality of the implemented activities (**OUTPUTS**)

Evaluation

- an analysis or interpretation of the collected data which delves deeper into the relationships between the results, the effects produced, and the overall impact of the project/program
- making judgment about the results of the intervention by comparing these with standards and criteria reflected in the goals and objectives
 - i.e. **relevance, effectiveness, efficiency, impact and sustainability**

Efficiency

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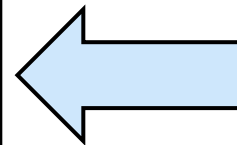


INDICATORS

- Can be described as signs, measures, yardsticks, or benchmarks, w/c help measure change and determine progress
- Used to evaluate whether the objective has been effectively achieved and has had the results expected
- Can be **QUANTITATIVE, QUALITATIVE OR PROXY**

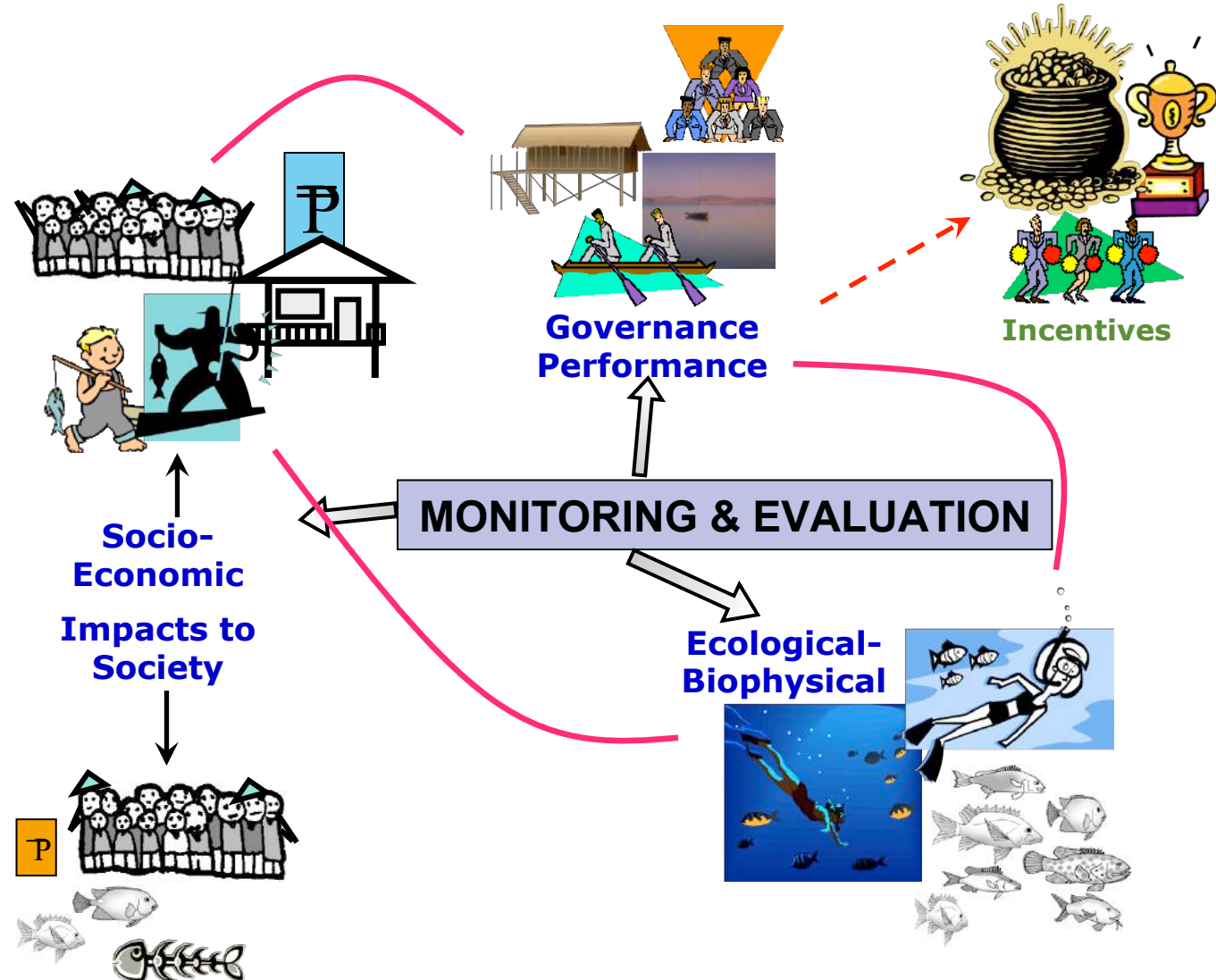
Effectiveness

**HOW TO
MEASURE?**



Achieving AIMS (Adaptive Integrated Management System) Outcomes

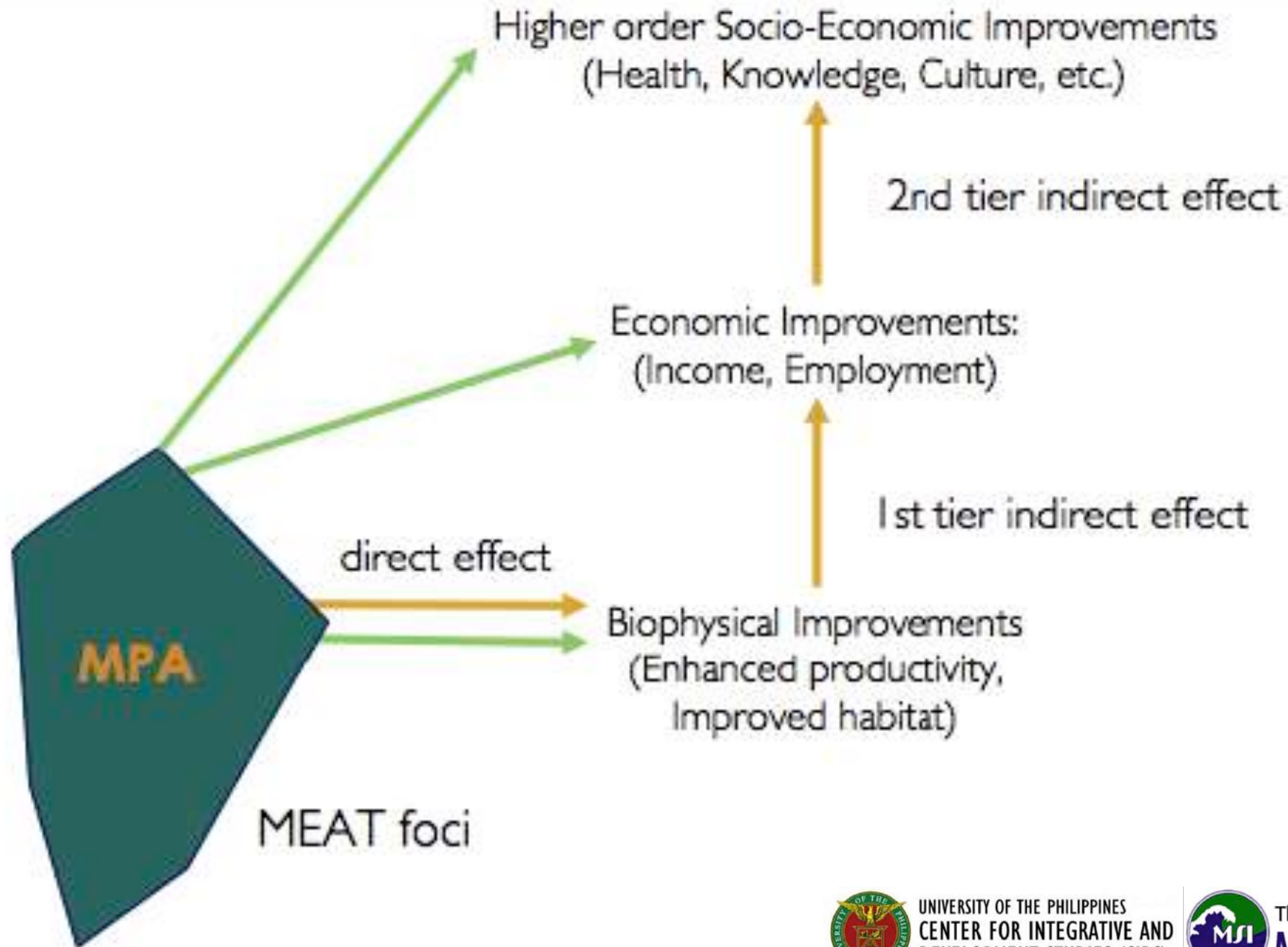
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MPA M&E: Seeing the whole picture

MPA Name	No. of Years	Ecological	Social/ Economic ^a	Management Performance	
				Self-Assessment	Community Perception ^b
Pilar	4	(+)	(+)	Level 5	(+)
Bibilik	4	(+) <i>fish data only</i>	(+)		(+)
Bangaan	4	(+) <i>except for HC cover</i>	(+)		(+)
Esperanza	5	(+)	(-)	Level 3	(-)
Villahermosa	5	(+)	(+)	Level 3	(+)
Puertobello	5	(+)	(+)	Level 2	(+)
PALS	5	(+)	(+)	Level 3	(+)
MISSTA	5	(+) <i>except for fish density</i>	(+)	Level 5	(+)
Tambunan	6	(+)	(+)	Level 4	(+)
Talisay	6	(+)	(+)	Level 4	(+)
Hinablan	6	(0)	(+)	Level 3	(+)
Lambog	6	(+)	(+)	Level 3	(+)
Matutinao	6	(+) <i>except for HC cover</i>	(+)	Level 3	(+)
Bato	6	(0)	(+)	Level 3	(+)

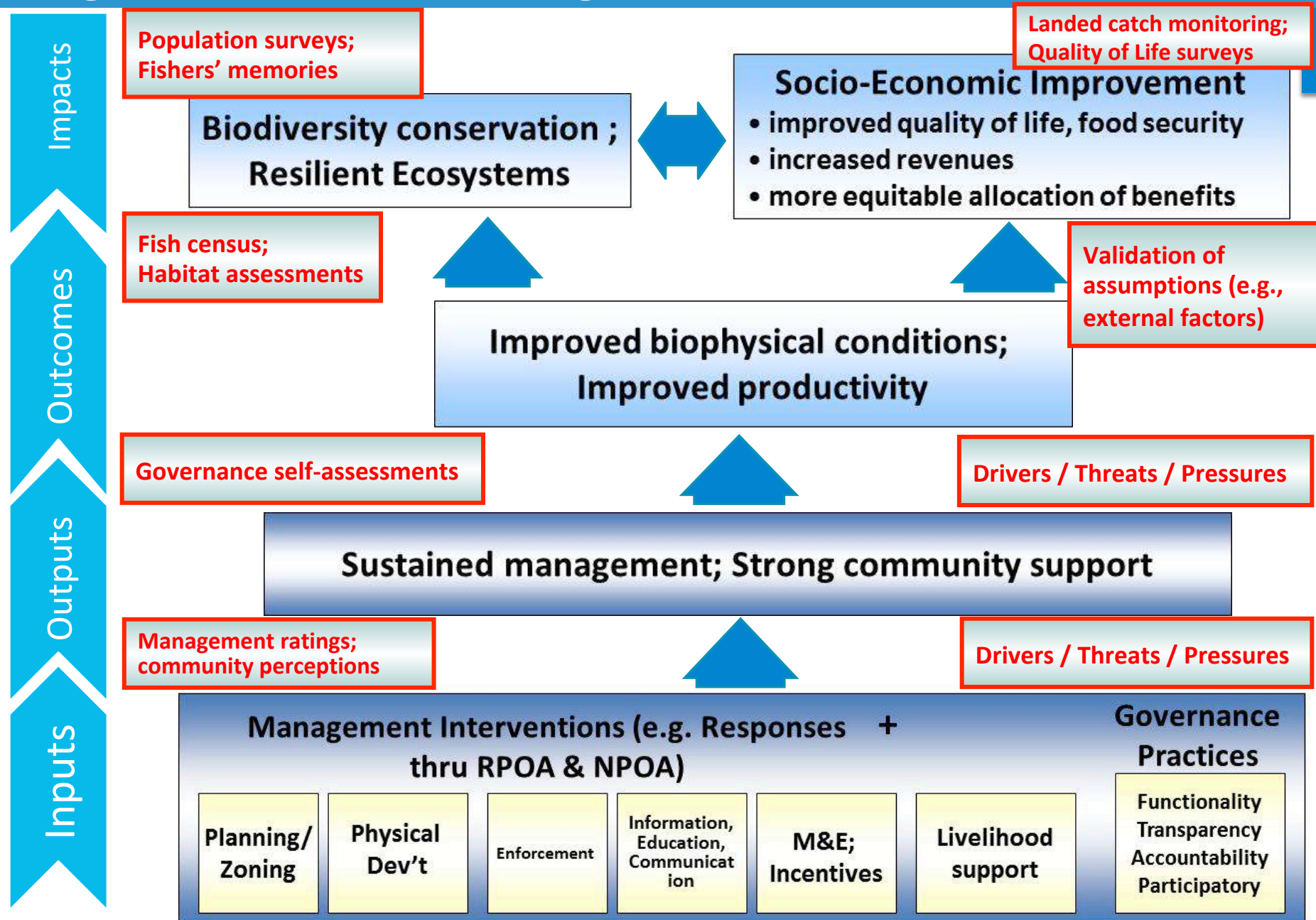
Source: Arceo
et al., (in prep)





M&E System for MPA and MPA Networks

Linking M&E governance, ecological and socioeconomic



Development of M&E framework

PDP, SDG, CBD and CTI

*PDP: Malasakit, Pagbabago,
Patuloy na Pag-unlad*

Enhancement & maintenance
of coastal & marine ecosystem
services

Conservation of threatened
species

Sustainability of fisheries
through proper management

Ensuring food security

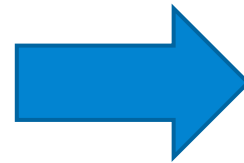
Primary goals of MPA Networks

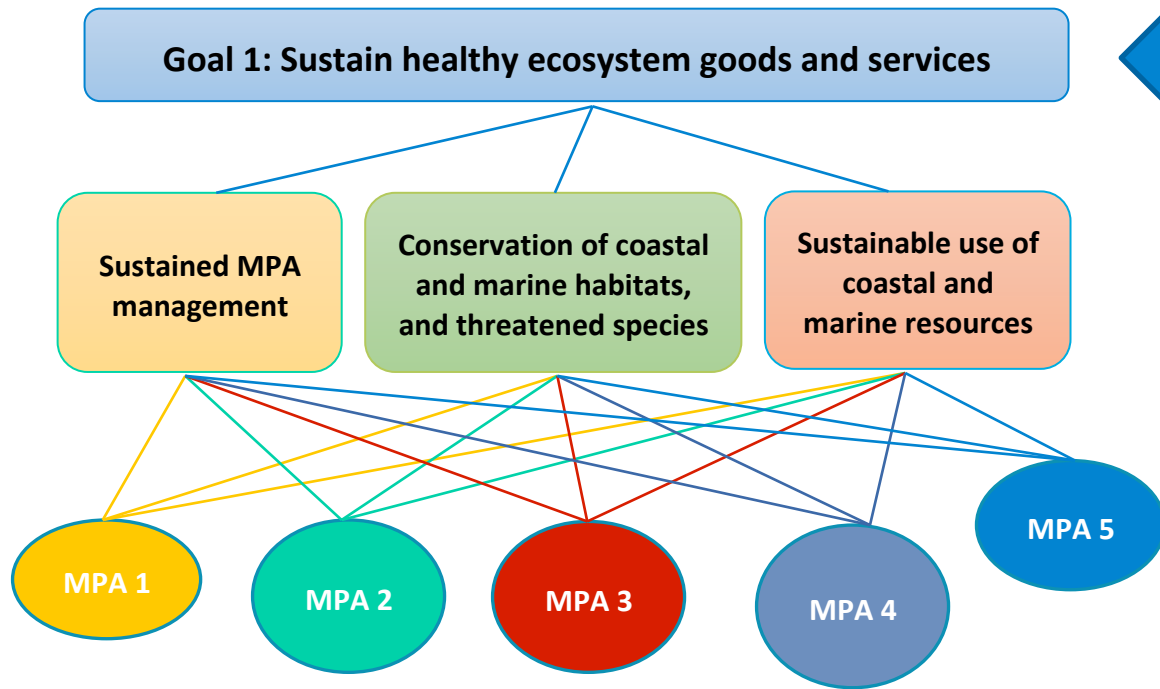
GOAL 1: Sustain healthy ecosystem goods and services

Gauging the status of individual MPAs and their
overall effects and contribution to the larger
MPA network

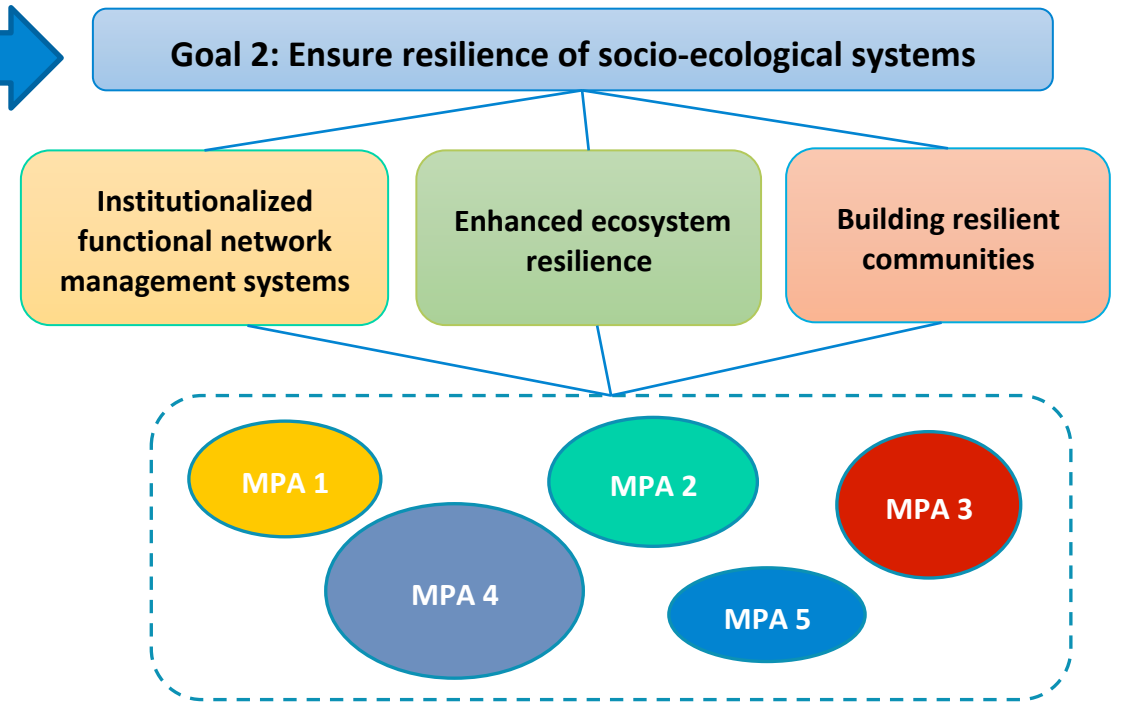
GOAL 2: Ensure resilience of socio- ecological systems

Gauging the collective and synergistic effects
of operating as a network in attaining large-
scale and long-term benefits_



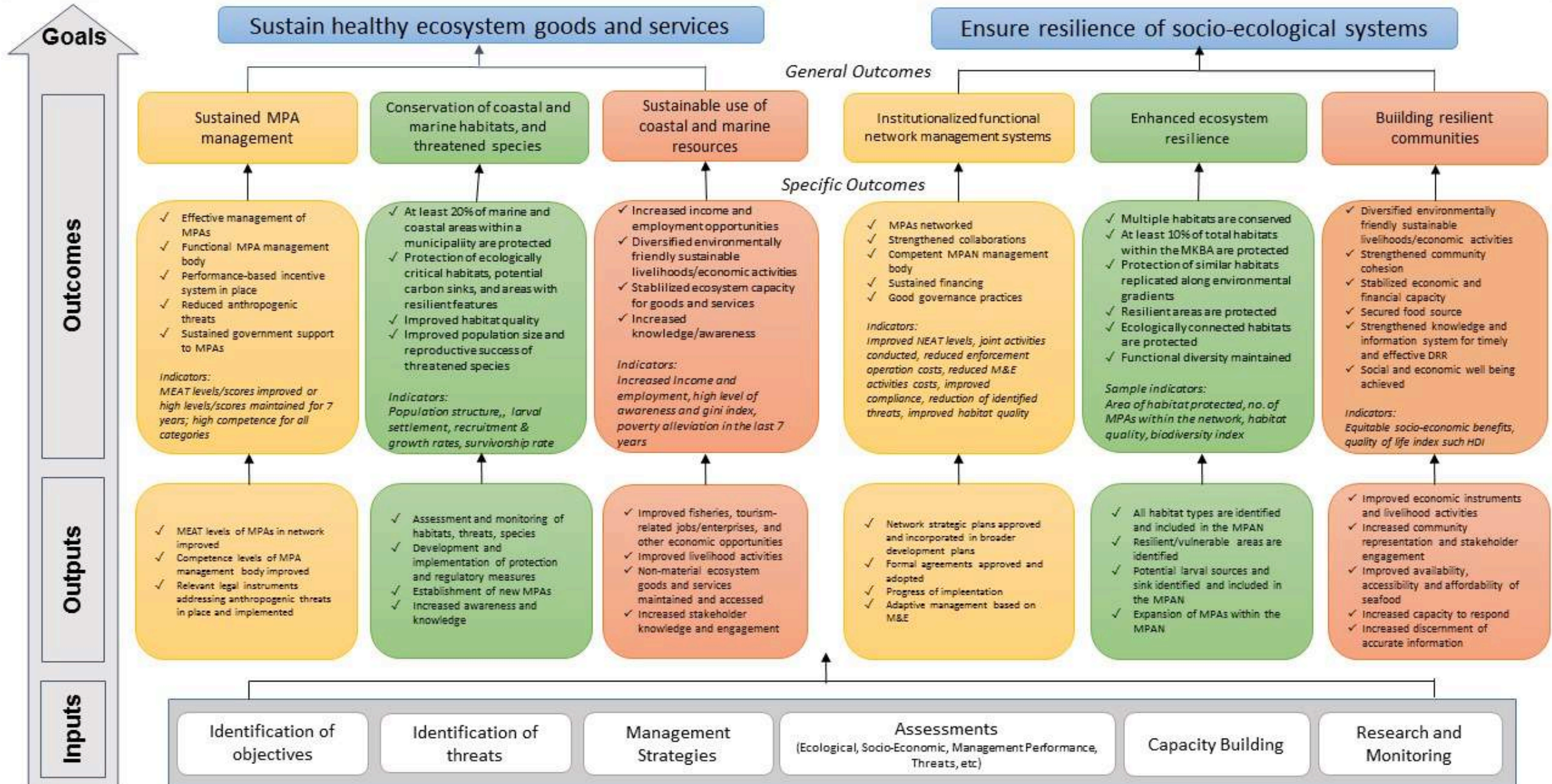


Individual MPAs contributing towards a common goal

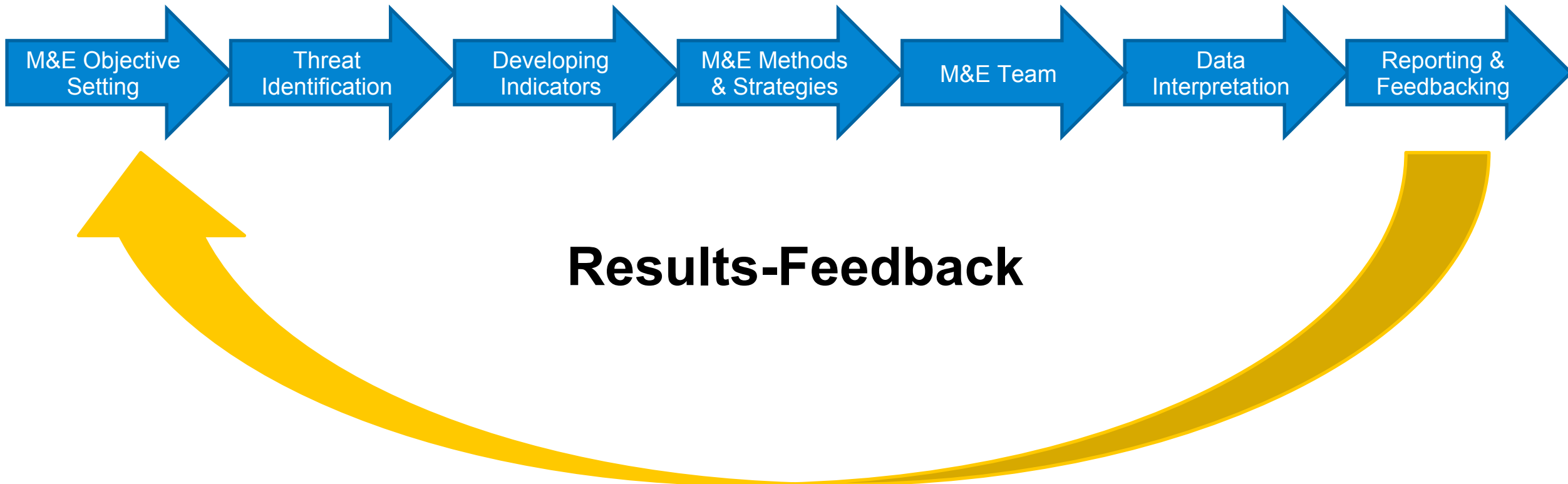


Collective and long-term benefits from synergy in networking

Monitoring and Evaluation Framework



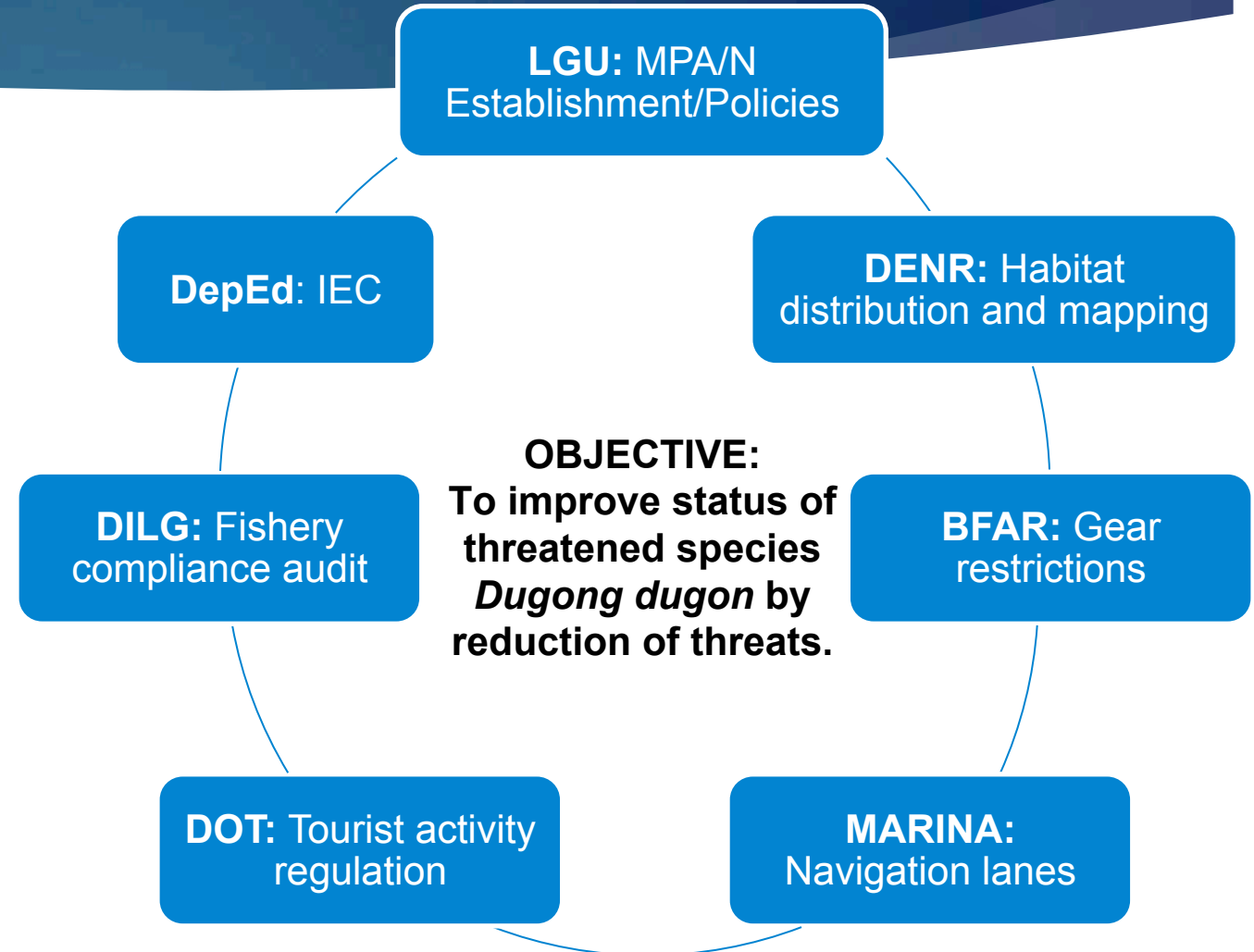
M&E for MPA/N Toolkit



Networking and Convergence to achieve objectives



Conservation of
threatened species



DAVAO GULF

LONG-TERM OUTCOMES

1. Diversified sources income

- People engage in ecotourism
- Income from ecotourism

SHORT-TERM OUTCOMES

1. Reduction of threats
2. Improved population

- Reduced LMV mortalities
- Sightings of LMV

OUTPUTS

1. MPAs established
2. Zoning Map (lanes and restricted gears)
3. IEC, M&E systems
4. Ecotourism establishments

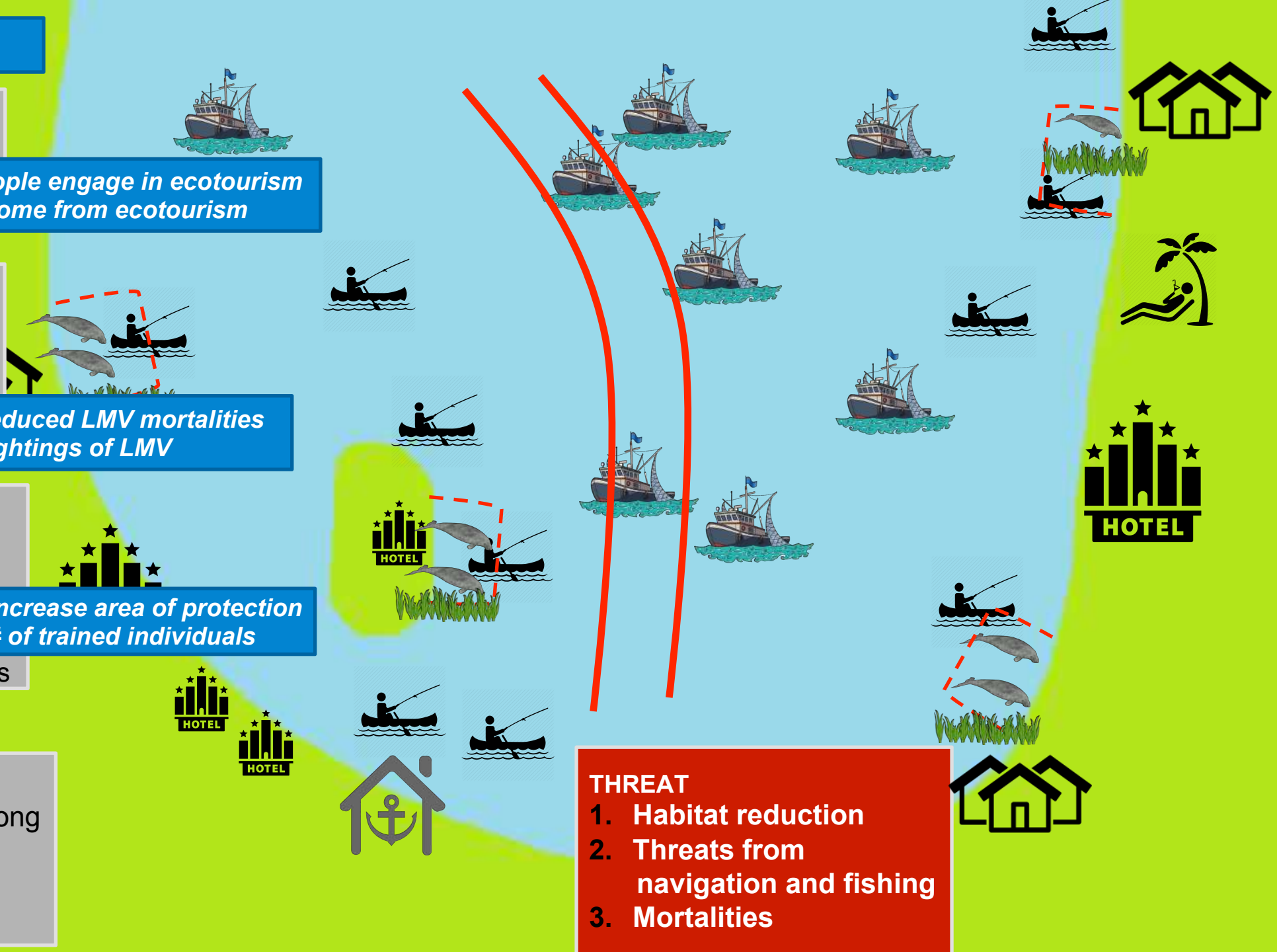
- Increase area of protection
- # of trained individuals

INPUTS

1. Determine areas w/ dugong
2. Coastal zoning
3. Joint agreements
4. Trainings for ecotourism

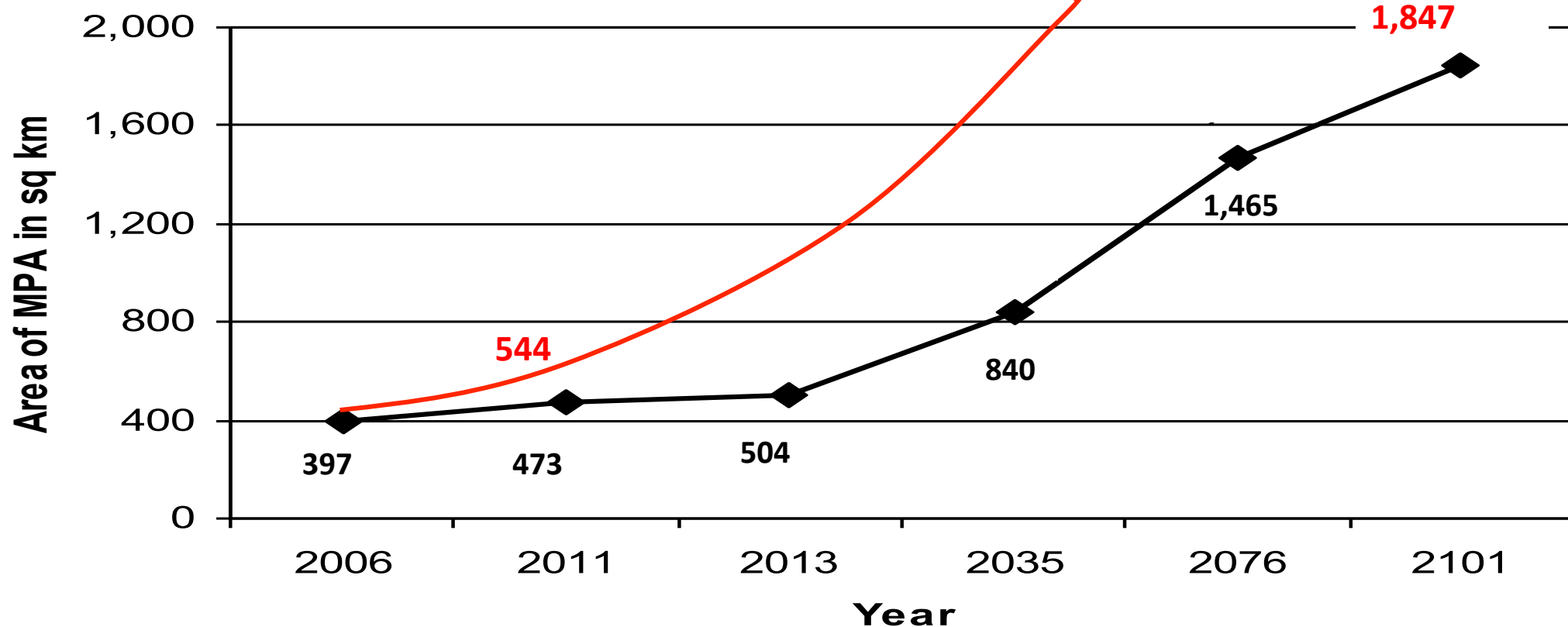
THREAT

1. Habitat reduction
2. Threats from navigation and fishing
3. Mortalities



Why form MPA Networks?

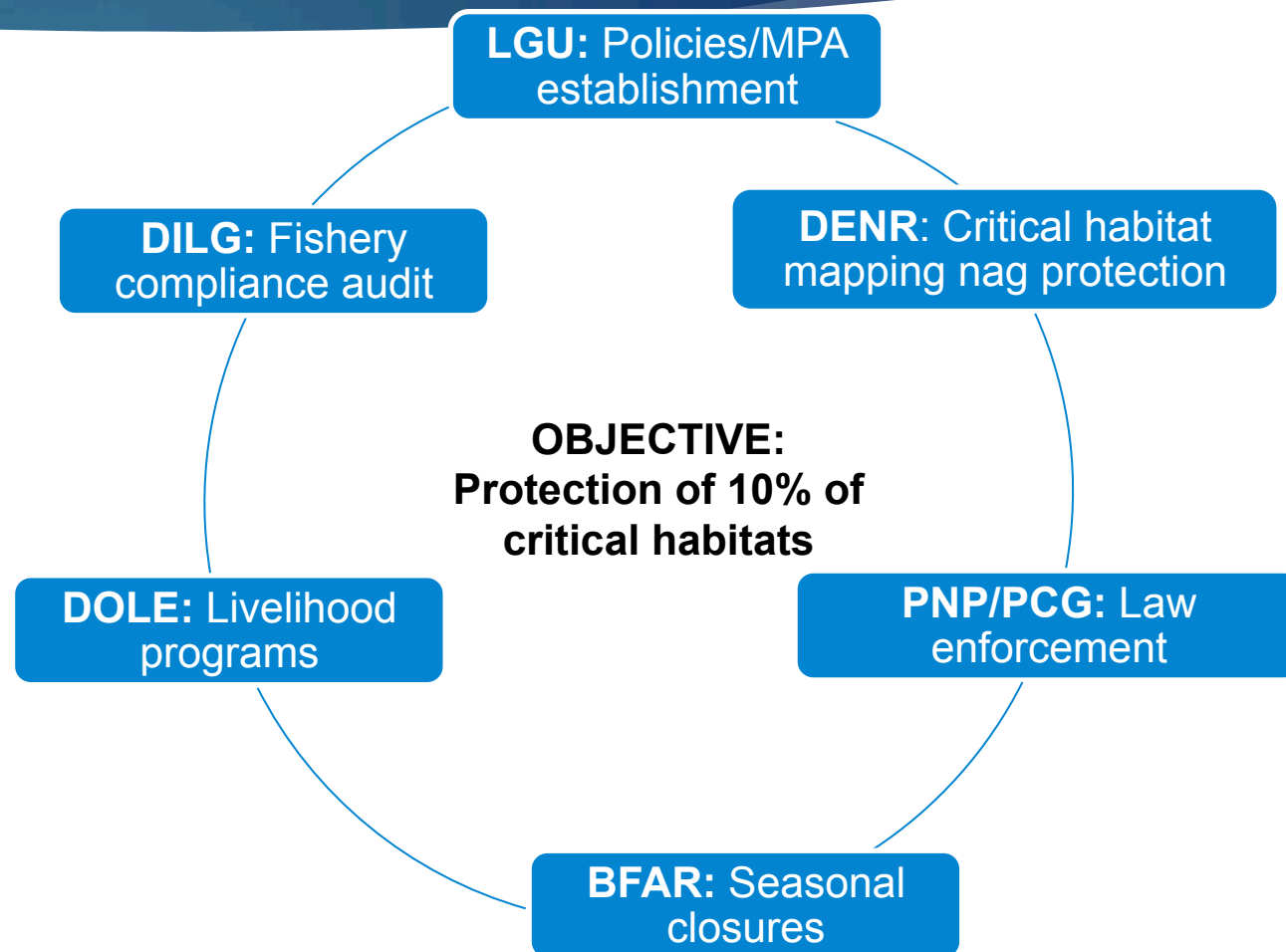
- ▶ *Protecting 10% of the coral reefs in the Philippines would take 100 years:*
ACCELERATE THE AREA COVERED AND IMPROVE ITS EFFECTIVENESS.



Networking and Convergence to achieve objectives



Enhancement & maintenance of coastal & marine ecosystem services



Considerations in designing the M&E system to gauge ecological resilience

(Critical habitats, connectivity, resilient sites, source/sink, seasonal aggregations, redundancy, sentinel sites for monitoring threats)

Protection of contiguous habitats

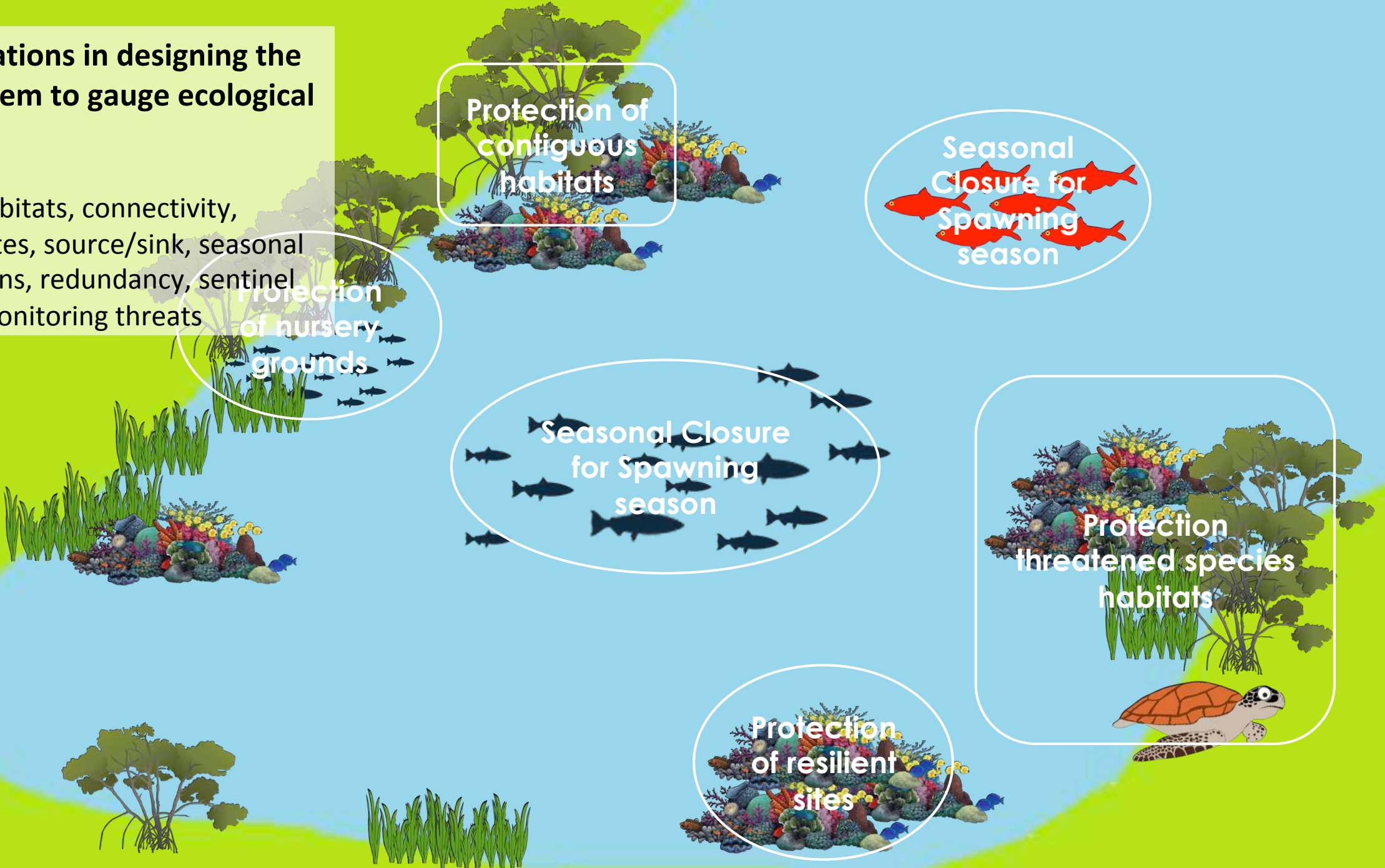
Protection of nursery grounds

Seasonal Closure for Spawning season

Seasonal Closure for Spawning season

Protection threatened species habitats

Protection of resilient sites



Verde Island Passage

LONG-TERM OUTCOMES

1. Increased and diversify income
2. Sustained benefits

SHORT-TERM OUTCOMES

1. Reduction of threat
2. Improved fish population
3. Increased fish catch

OUTPUTS

1. Seasonal closure established
2. Fishers are skilled
3. IEC, M&E systems

INPUTS

1. D
 2. D
 3. J
 4. A
- ADAPTIVE MANAGEMENT**
1. Educational incentives for children fishers
 2. Other alternative livelihoods

- **High compliance**
- **Increase fish abundance**

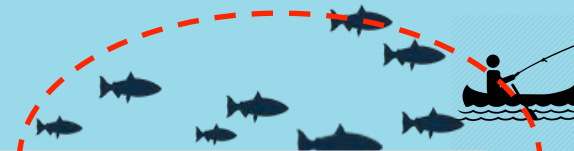
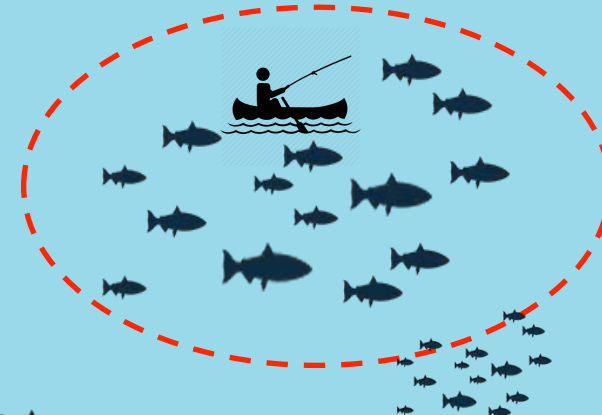
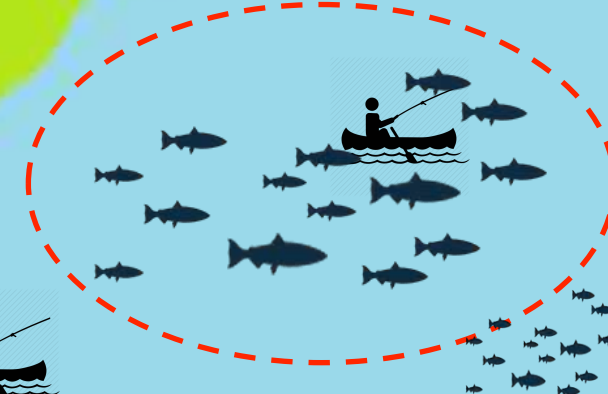
- **Displaced fisher**

- **Increase area of protection**
- **# trained individuals**

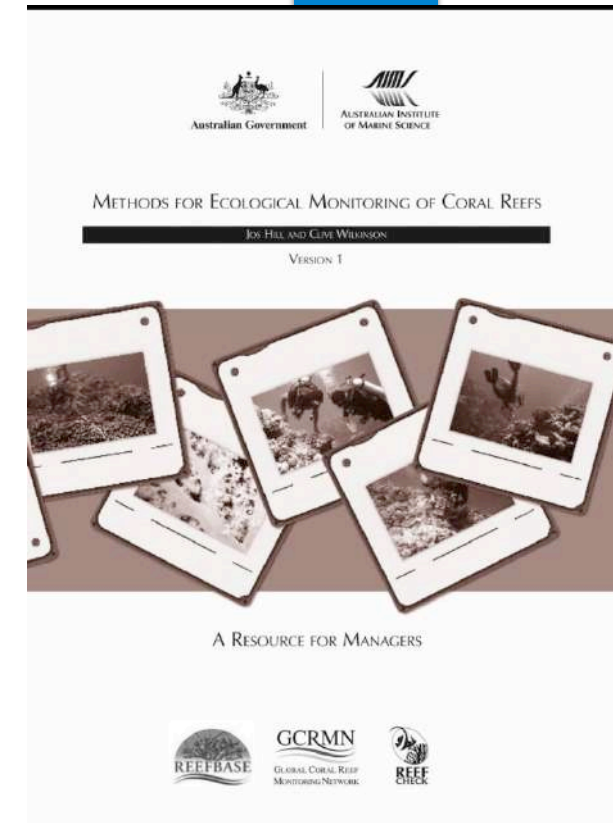
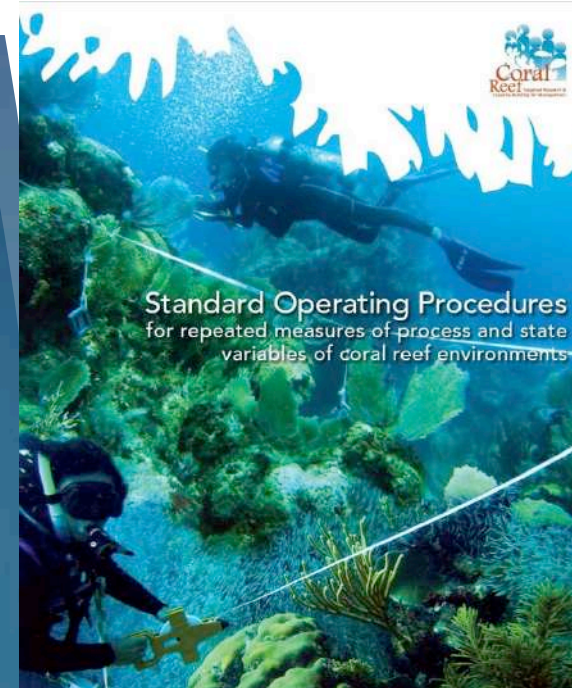
Results-feedback

THREAT- OVERFISHING

1. High fishing dependence
2. High fishing pressure
3. Unregulated fishing
4. Reduced fish catch

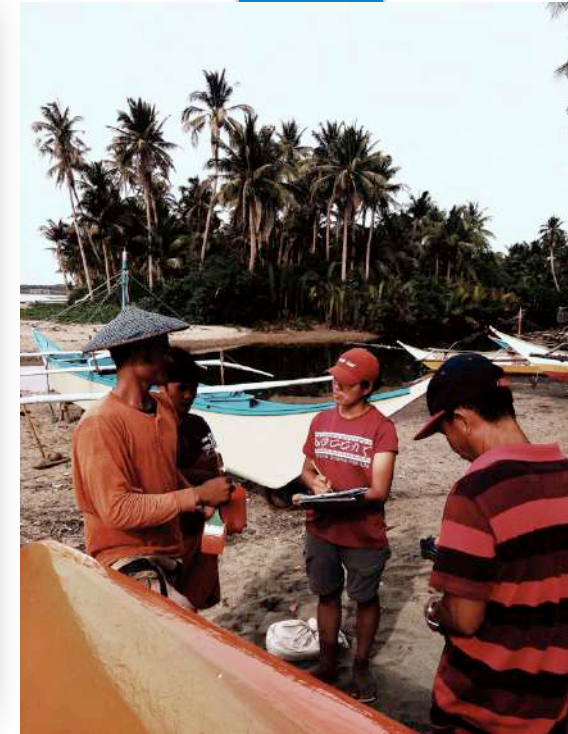
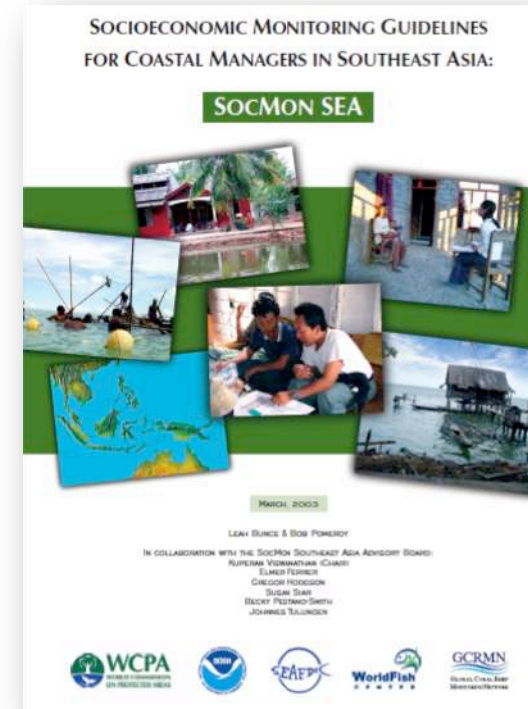


Sample ecological assessment tools



Sample socioeconomic assessment tools

- Secondary data gathering, Key Informant Interviews (KII), Focus Group Discussions (FGDs), Individual household surveys



Assessing the Socio-Economic Benefits of MPAs: SEAT

MAIN AUTHOR: Rina Maria P. Rosales (ECOFISH PROJECT)



MPA/N management assessment tools

- Can be used to identify gaps in the governance aspects

Management Effectiveness Tracking Tool

Reporting Progress at Protected Area Sites: Second Edition



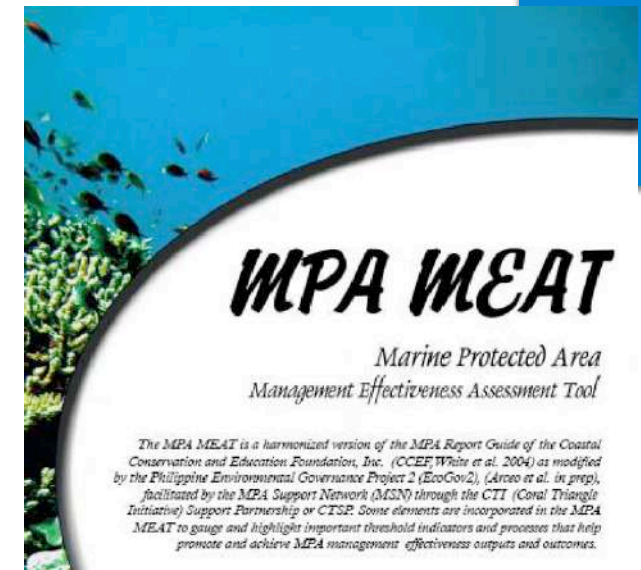
July 2007



COMPETENCE ASSESSMENT TOOL

A Guide for Marine Protected Area (MPA) and MPA Network (MPAN) Managers and Practitioners

A publication supporting the 'Strengthening Marine Protected Areas to Conserve Marine Key Biodiversity Areas in the Philippines,' a project of the Department of Environment and Natural Resources Biodiversity Management Bureau and the United Nations Development Programme.



MPA MEAT

Marine Protected Area
Management Effectiveness Assessment Tool

The MPA MEAT is a harmonized version of the MPA Report Guide of the Coastal Conservation and Education Foundation, Inc. (CCEF, White et al. 2004) as modified by the Philippine Environmental Governance Project 2 (EcoGov2), (Arceo et al. in prep), facilitated by the MPA Support Network (MSN) through the CTI (Coral Triangle Initiative) Support Partnership or CTSP. Some elements are incorporated in the MPA MEAT to gauge and highlight important threshold indicators and processes that help promote and achieve MPA management effectiveness outputs and outcomes.

COMPLIANCE TO R.A. NO. 8550 OR THE PHILIPPINE FISHERIES CODE OF 1998 AS AMENDED BY R.A. NO. 10654

Quarter: __ Year: __

GENERAL INFORMATION

NAME OF CITY/MUNICIPALITY: _____

PROVINCIAL LOCATION: _____

INCOME CLASS: _____

NO. OF BARANGAYS: _____

INSTRUCTIONS

1. This form is to be accomplished and duly signed by the City/Municipal Agricultural Officer or equivalent, and certified as true and correct by the City/Municipal Mayor or designated alternate.
2. Please supply the information being required.
3. Put a check mark (✓) on the appropriate box or line; otherwise provide the value required. Note that shaded boxes are not to be marked.
4. The DILG Regional Office is to ensure that all items in this form are satisfactorily filled out.



Daghang Salamat!



Local Partners

TAÑON STRAIT

NETWORKING

LONG-TERM OUTCOMES

1. Increased income
2. Sustained benefits

- *Increase income*

SHORT-TERM OUTCOMES

1. Reduction of threats
2. Improved fish population
3. Increase fish catch

- *Increase compliance*
- *Fish biomass in&out PA*
- *Increase CPUE*

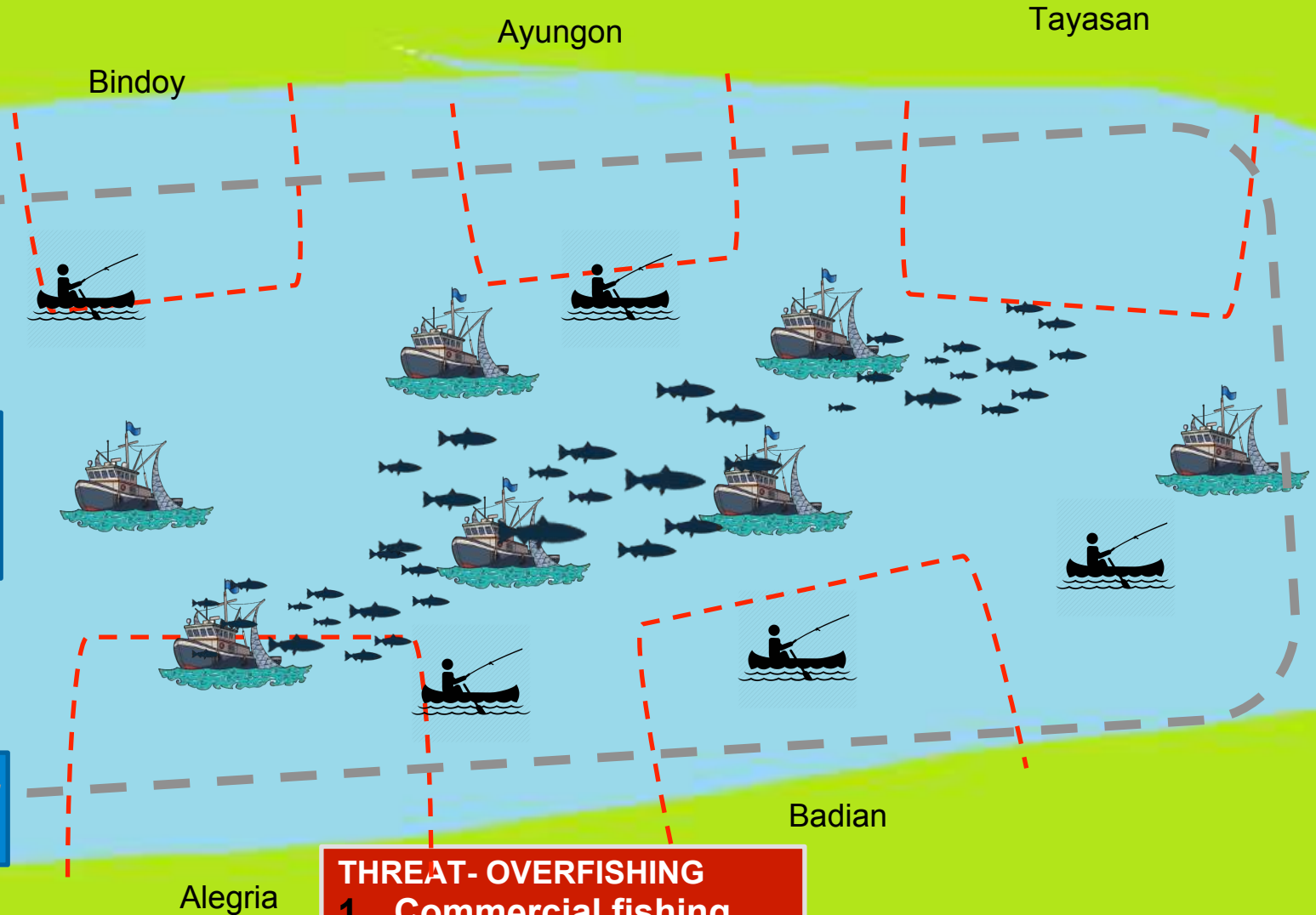
OUTPUTS

1. Increased managed access areas
2. Joint enforcement activities
3. IEC, M&E system

- *Increase area of protection*
- *Reduced enforcement cost*

INPUTS

1. Joint agreements
2. Coordinate mgt plans and policies



THREAT- OVERFISHING

1. Commercial fishing
2. Unregulated fishing
3. Reduced fish catch (abundance and biomass)