The Coastal and Marine Environmental Protection in the Philippines, its Partnerships with Other Countries and their Interconnectivity

Outline of Presentation

- Status of Philippine Coastal and Marine Environment
- Threats and Challenges
- Initiatives on the National Level
- Initiatives on the International Level
- Connectivity

Status of the Philippines' Coastal and Marine Ecosystem

- Archipelago composed of 7,107 islands
- Coastal length of about 36,289 kilometer
- Total area of marine environment including the Exclusive Economic Zone and Benham Rise is more than 2.35 million square kilometers
- Acknowledge as the center of marine biodiversity

Status of the Philippines' Coastal and Marine Ecosystem

Coral Reefs

- Philippines has the 2nd largest coral reef area in Southeast Asia (Burke et.al., 2002)
- Estimate total area is 30,000 square kilometre or 3M hectares
  - ✓ 94% poor to fair condition
  - ✓ 5% good condition
  - ✓ 1% excellent condition (Gomez, et.al, 1994)

Status of the Philippines' Coastal and Marine Ecosystem

Seagrass Beds

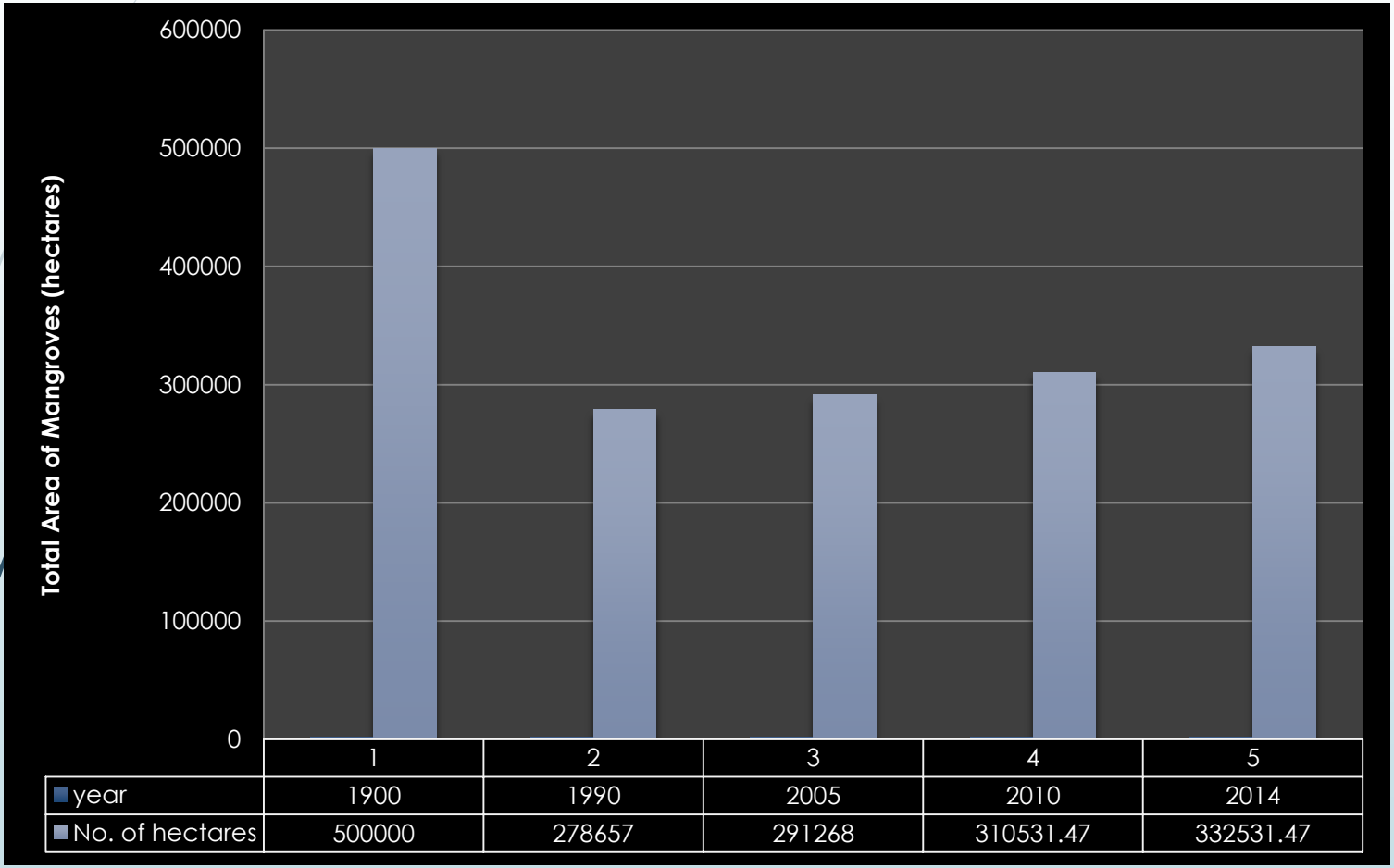
- Philippines is home to 16 species of seagrass covering a total area of 344,560 hectares
- Important nursery and feeding grounds for a wide variety of commercially important species (e.g.danggit and shrimps)

Status of the Philippines' Coastal and Marine Ecosystem

Mangroves

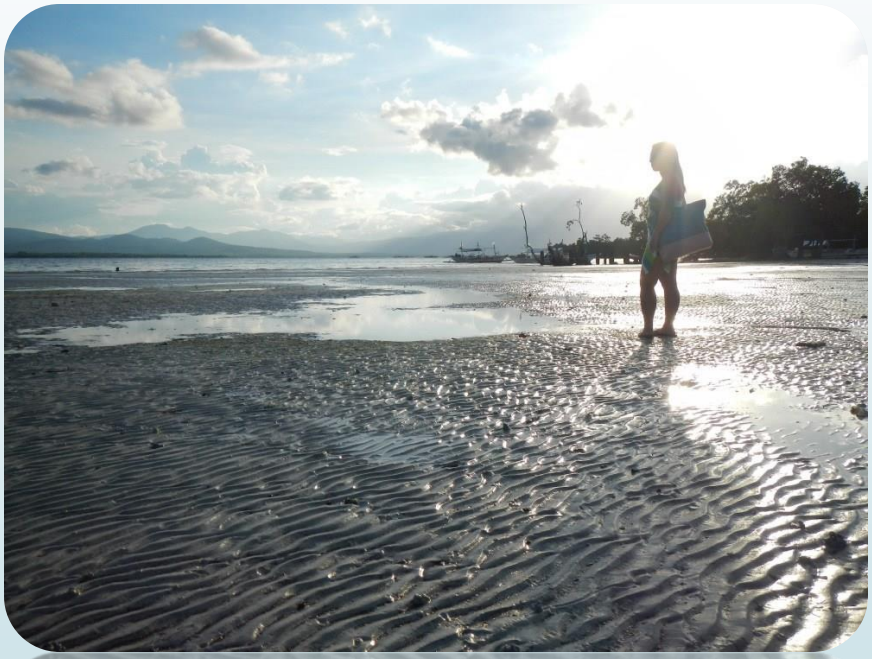
- Home, nursery and feeding ground to at least 54 species of crustaceans, 63 species of mollusk, and 110 species of fish, many of which are commercially important

Mangrove Forest in the Philippines



Status of the Philippines' Coastal and Marine Ecosystem

- **Mudflats/Soft Bottom**
  - Low lying intertidal coastal lands covered with water during flood tide and exposed during ebb.
  - Often component of estuaries and sediments, are mostly muddy to sandy



Importance of Mudflat/Soft Bottom

- habitats for a wide variety of prey items (annelids, mollusk, crustaceans and echinoderms)
- Feeding ground for many species of food fish and wildlife
- Nutrient Cycling
- Make up “blue carbon” habitats

Threats and Challenges

- **Anthropogenic**
  - ✓ overexploitation
  - ✓ reclamation
  - ✓ destructive fishing practices
  - ✓ habitat loss
  - ✓ unsuitable coastal development
  - ✓ sedimentation
  - ✓ pollution
  - ✓ invasive alien species
  - ✓ burgeoning population

Threats and Challenges

- **Natural**
  - ✓ effects of climate change such as:
    - sea level rise
    - warming of the oceans
    - intensified weather disturbances
    - ocean acidification

Recent Developments and Ongoing Initiatives on Coastal and Marine Resources Management

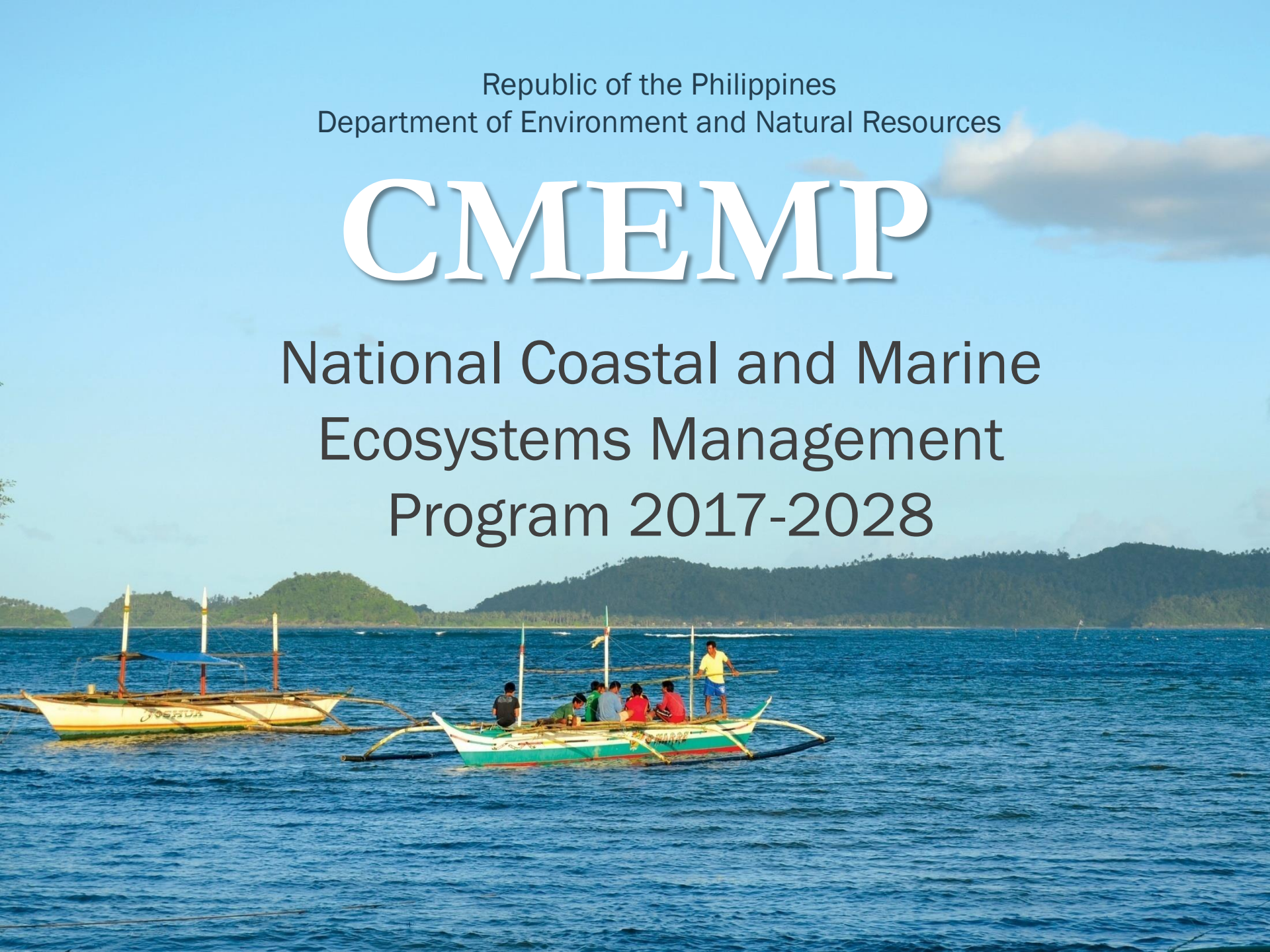
National Level

- Coastal Environment Program (CEP) – 1993 to 2002
- Integrated Coastal Resources Management Project (ICRMP) – June 2007 to 2014
- Sustainable Coral Reef Ecosystems Management Program (SCREMP) – 2013 to 2016
- Coastal and Marine Ecosystems Management Program (CMEMP) – 2017 to 2028

Republic of the Philippines
Department of Environment and Natural Resources

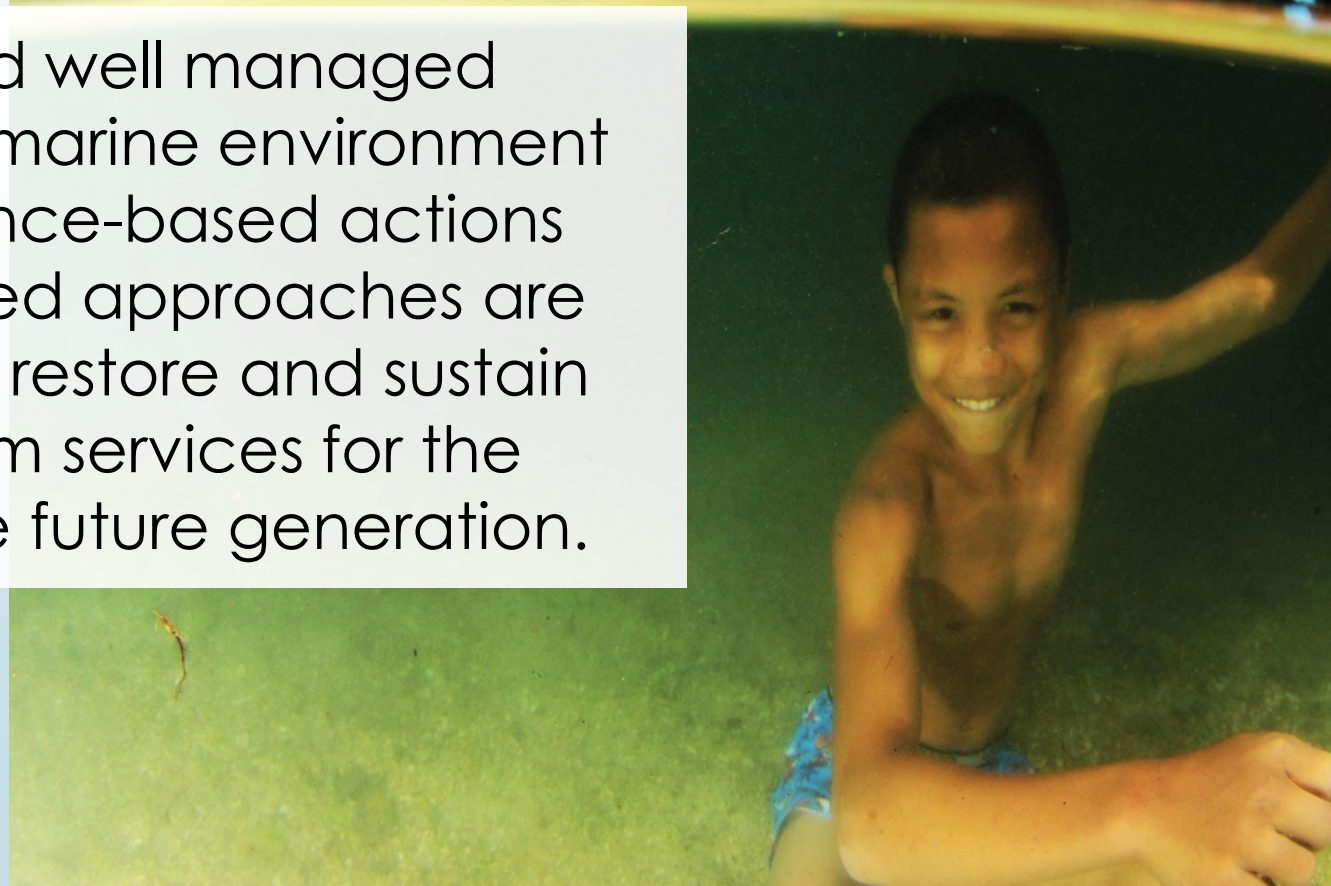
CMEMP

National Coastal and Marine Ecosystems Management Program 2017-2028



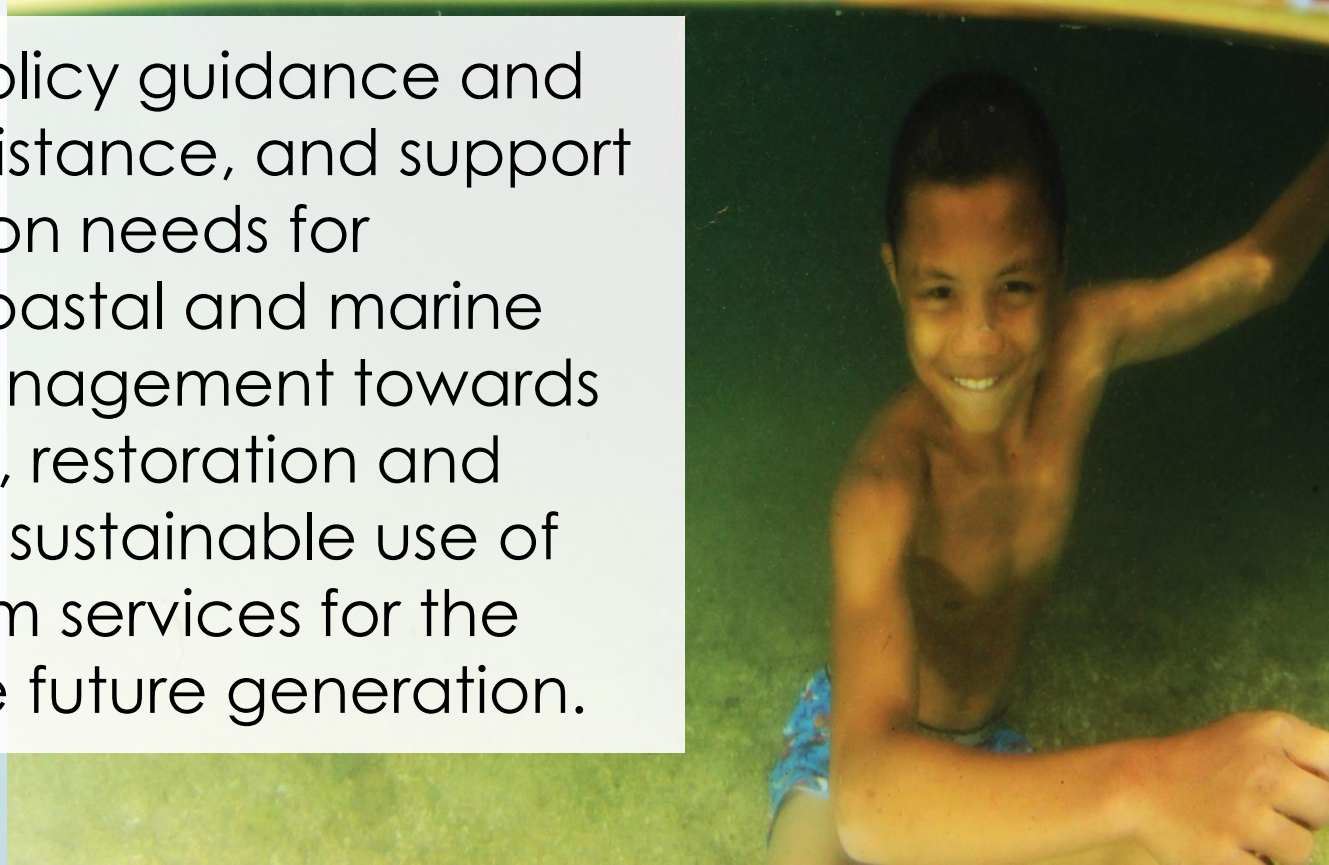
Mission

A resilient and well managed coastal and marine environment where evidence-based actions and integrated approaches are employed to restore and sustain the ecosystem services for the benefit of the future generation.



Vision

To provide policy guidance and technical assistance, and support the information needs for integrated coastal and marine resources management towards rehabilitation, restoration and promotion of sustainable use of the ecosystem services for the benefit of the future generation.



OBJECTIVES

1. Establish a well-connected network of MPAs to ensure the effective and sustainable management of coastal resources;

2. Implement sustainable management of coastal and marine resources to contribute to food security and improve human well-being of the coastal communities;

3. Effectively reduce threats and factors of degradation on coastal and marine ecosystems;

OBJECTIVES

4 Enhance the formation of positive values among all stakeholders including the youth through shared responsibilities in sustainable management of coastal and marine resources and habitats; and

5 Develop and/or enhance the skills and expertise of DENR concerned staff as well as other stakeholders on coastal and marine management.

Program Components

1. MPA Network Establishment and Strengthening
2. Biodiversity-Friendly and Social Enterprise Development
3. Capacity Building
4. Technical Assistance
5. Knowledge Management
6. Social Marketing and Mobilization
7. Monitoring and Evaluation

Management Approaches

1. Integrated Coastal Management
2. Partnership Building
3. Ecotourism/Sustainable Tourism
4. Protection, Management and Law Enforcement
5. Communication, Education and Public Awareness
6. Valuation of Ecosystems Services

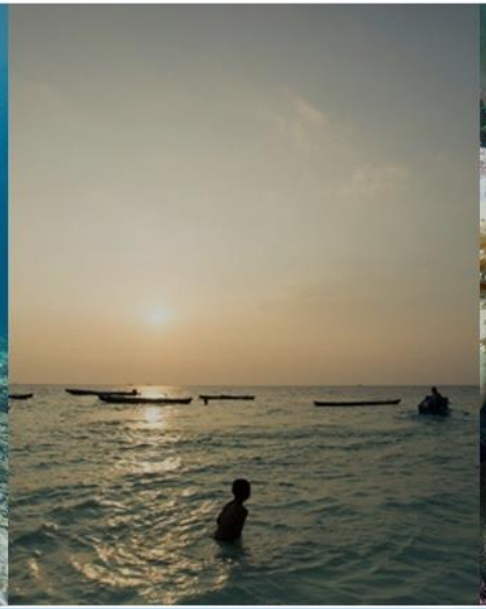
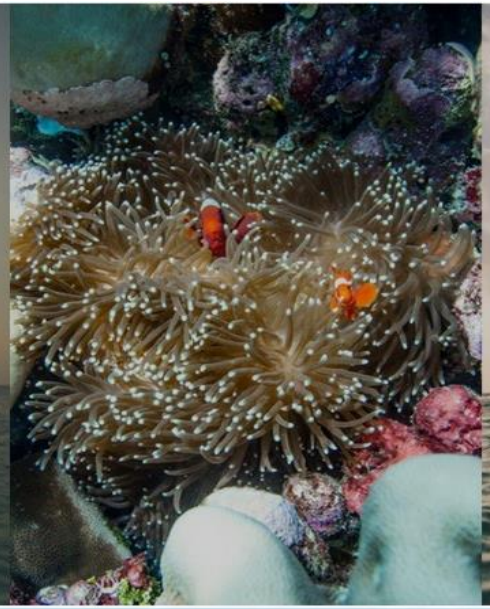
Palaui Marine Reserve, Cagayan

Recent Developments and Ongoing Initiatives on Coastal and Marine Resources Management

International Level

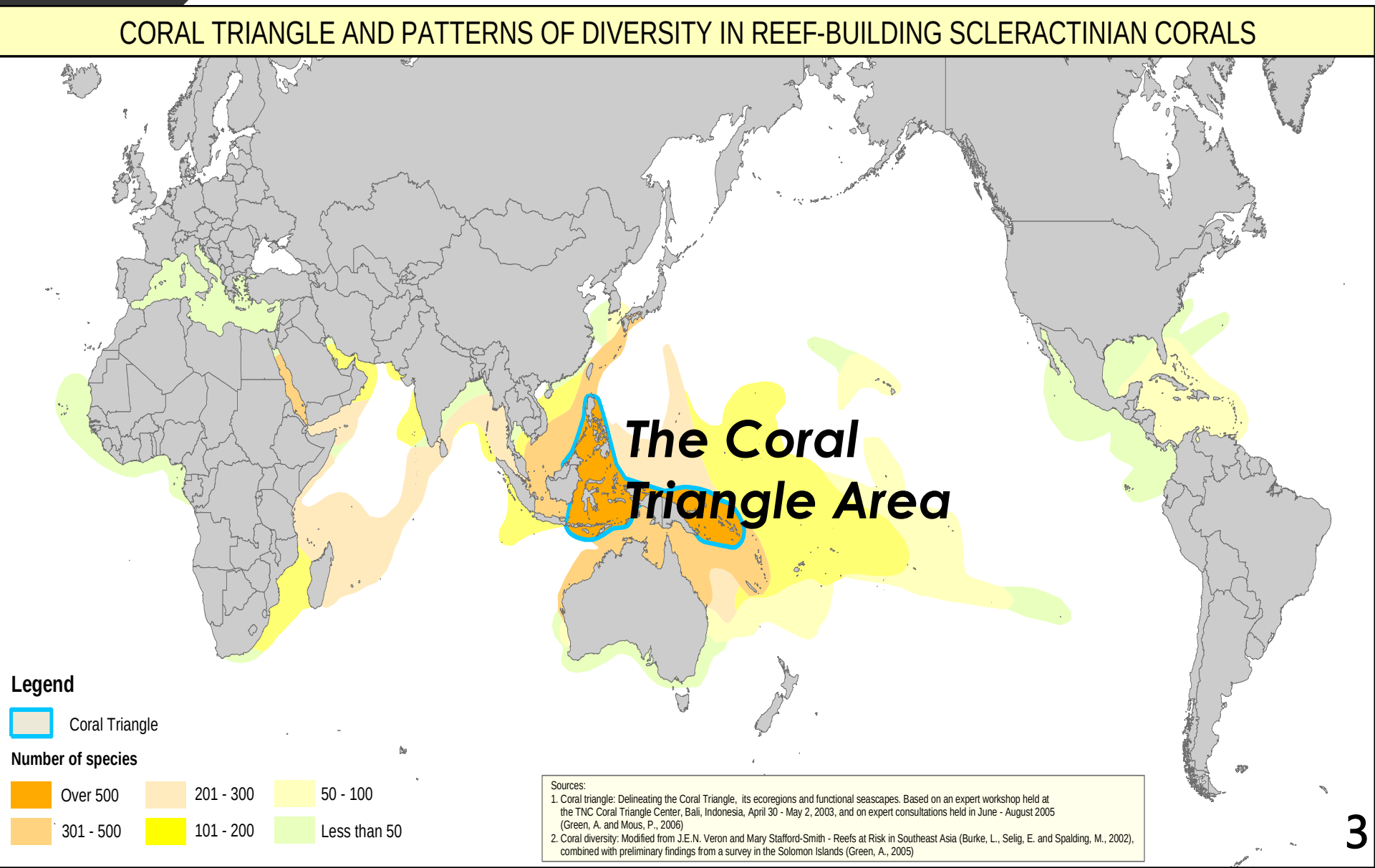
- Convention on Biological Diversity
- Sustainable Development Goals
- Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention)
- Green Fins
- Coral Triangle Initiative

CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY


Coral Triangle Marine Ecoregion

Small, but "the global center of marine diversity"… (Veron et al., 2009)



General Facts About CTI Region

Total area of reefs: **75.000 Km²**

Home of more than **500** coral & **3000** fish species **30% of World Coral Reefs**

Region with mangrove forest: **ca. 46.000 Km²**

Tuna spawning & nursery grounds support **multi-billion** tuna industry

Support livelihood & food security of highly-populated region **Ca. 370 million** people

FAO: ca. 28 kg/capita/year of fish supply in the CT6 countries

CT-6 Demand: ca. 10 Mio tons / year

General Facts About CTI Region

Total annual value of reefs, mangroves & associated habitats estimated at **US $ 2.3 billion**

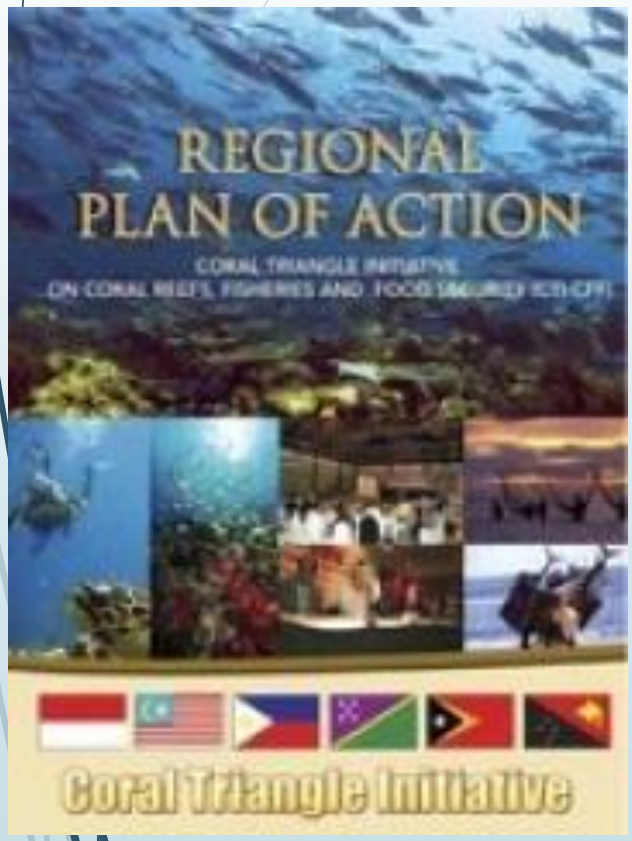
Estimated total annual economic values of marine resources in CT6 countries: ca. **US $ 10 billion in Fisheries + 2.3 billion in services = 12.3 billion per year**

CTI Leader's Summit

- Held in Manado, Indonesia last May 15, 2009
- Formal Launching of CTI-CFF
- Affirm commitments of the CT6 countries to promote sustainable management of the Coral Triangle
- Formalize the partnership and cooperation of the CT6 countries

CTI-CFF Regional Plan of Action

(set for 10 years to 2020; 5 goals; 10-targets; and 37-regional activities)

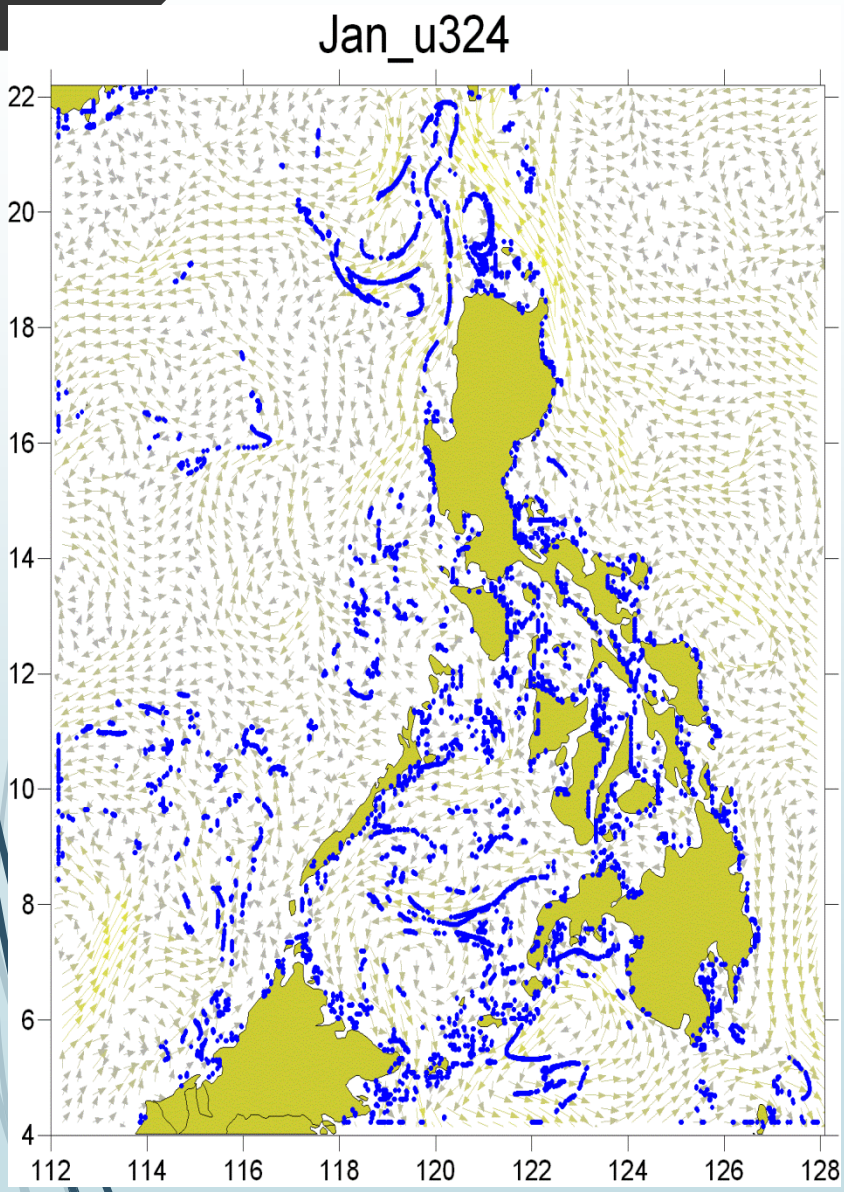


1. Priority Seascapes designated and effectively managed
2. Ecosystem Approach to Management of Fisheries (EAFM) and other marine resources fully applied
3. Marine Protected Areas (MPA) established and effectively managed
4. Climate Change Adaptation (CCA) measures achieved
5. Threatened Species (TS) status improving

Threats in the Coral Triangle Region

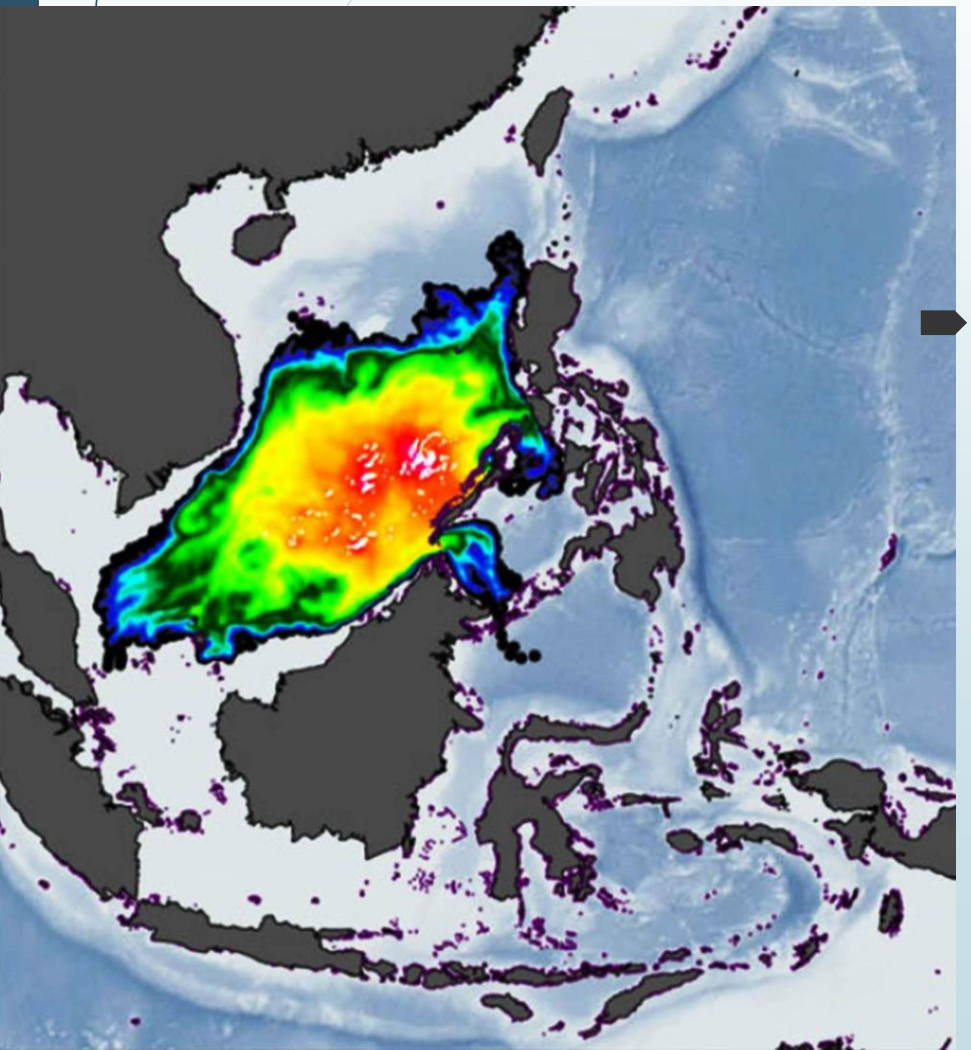
- Coastal Development (e.g. coastal engineering and infrastructure, runoff from costal construction, sewage discharge)
- Watershed-based pollution (e.g. erosion, nutrient fertilizer/pesticide waste)
- Marine-based pollution and damage (e.g. solid waste, contaminated bilge water, oil spills, raw sewage)
- Overfishing and destructive fishing (e.g. IUU fishing, overexploitation of fish resources)
- Future threats: the rapid increase in greenhouse gases in the atmosphere

Connectivity



- All habitats connected by water circulation
  - Reproduction
  - Nutrients
  - Genetics
- Efforts in one region contributes to the adjacent region
- Cooperation and complementation of efforts

Connectivity



- Healthy coral reefs in the West Philippine Sea (=SCS) are important for the productivity of neighboring marginal seas, thru larval connectivity
- "Present-day oceanographic conditions lead to the transport of larvae from the South China Sea into the Coral Triangle region via the Sulu Sea, and from northern Papua New Guinea and the Solomon Islands via Halmahera. "(Kool, 2011)

Coral Reef Ecosystem services value

CORAL REEF	Int.$/ha/yr
Provisioning services	**55,724**
Food	677
Raw Materials	21,528
Genetic resources	33,048
Ornamental resources	472
Regulating services	**171,478**
Climate regulation	1,188
Disturbance moderation	16,991
Waste treatment	85
Erosion prevention	153,214
Habitat services	**16,210**
Genetic diversity	16,210
Cultural services	**108,837**
Esthetic information	11,390
Recreation	96,302
Cognitive information	1,145
Total economic value	**352,249**

Global estimates of the value of ecosystems and their services in monetary units (de Groot et al., 2012)

Economic value of coral reefs and what we are losing

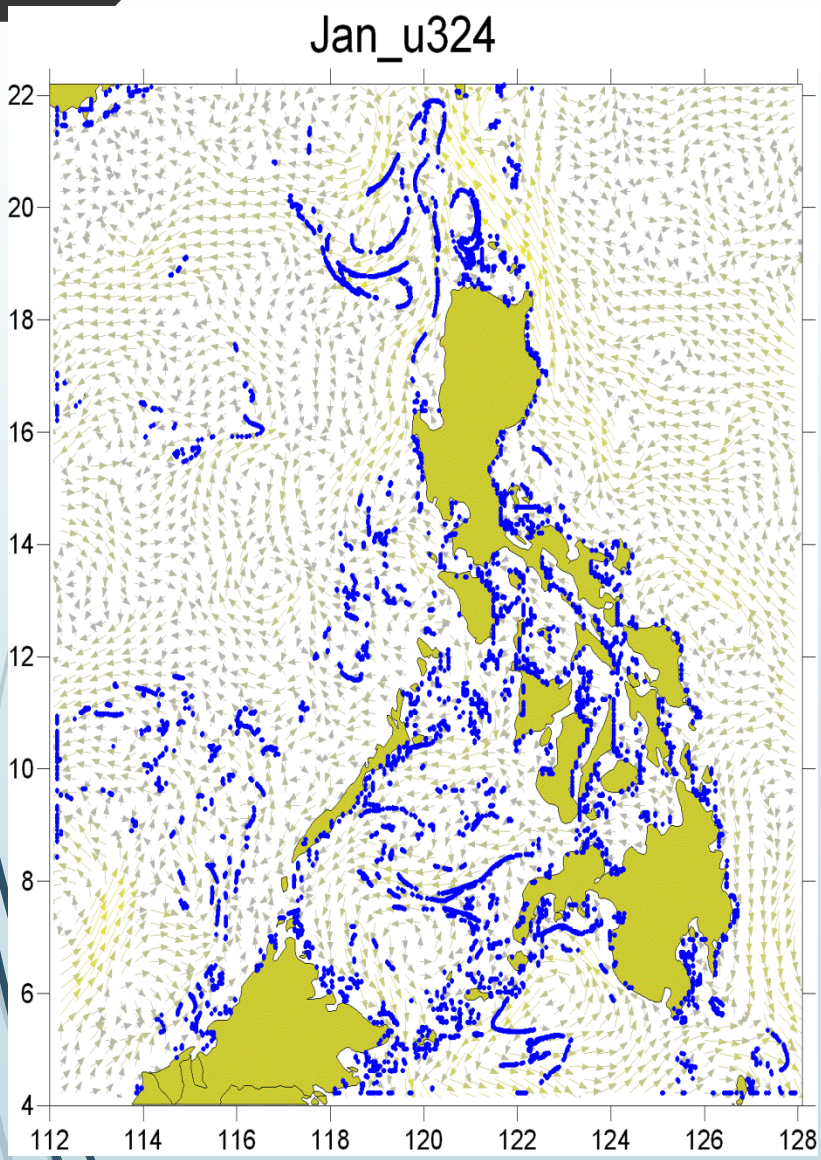
- Considering direct use, indirect use, existence values, etc. - de Groot (2012)

  @ $350,000/hectare/year

- Applied to the area reclaimed to date ~ 311 hectares

- Gives more than $ 100,000,000.00 lost to the countries around the South China Sea annually

Conclusion



- Shared responsibility to protect our coastal and marine environment
- Whatever our actions will be, whether positive or negative, will surely affect the entire region
- Sustainable ecological and economic benefits
- Cooperation and/or complementation of efforts in conserving and protecting our coastal and marine ecosystems.


Thank you!