Fisheries, ICM, MPAs and Scaling-up to MPA networks in the Coral Triangle

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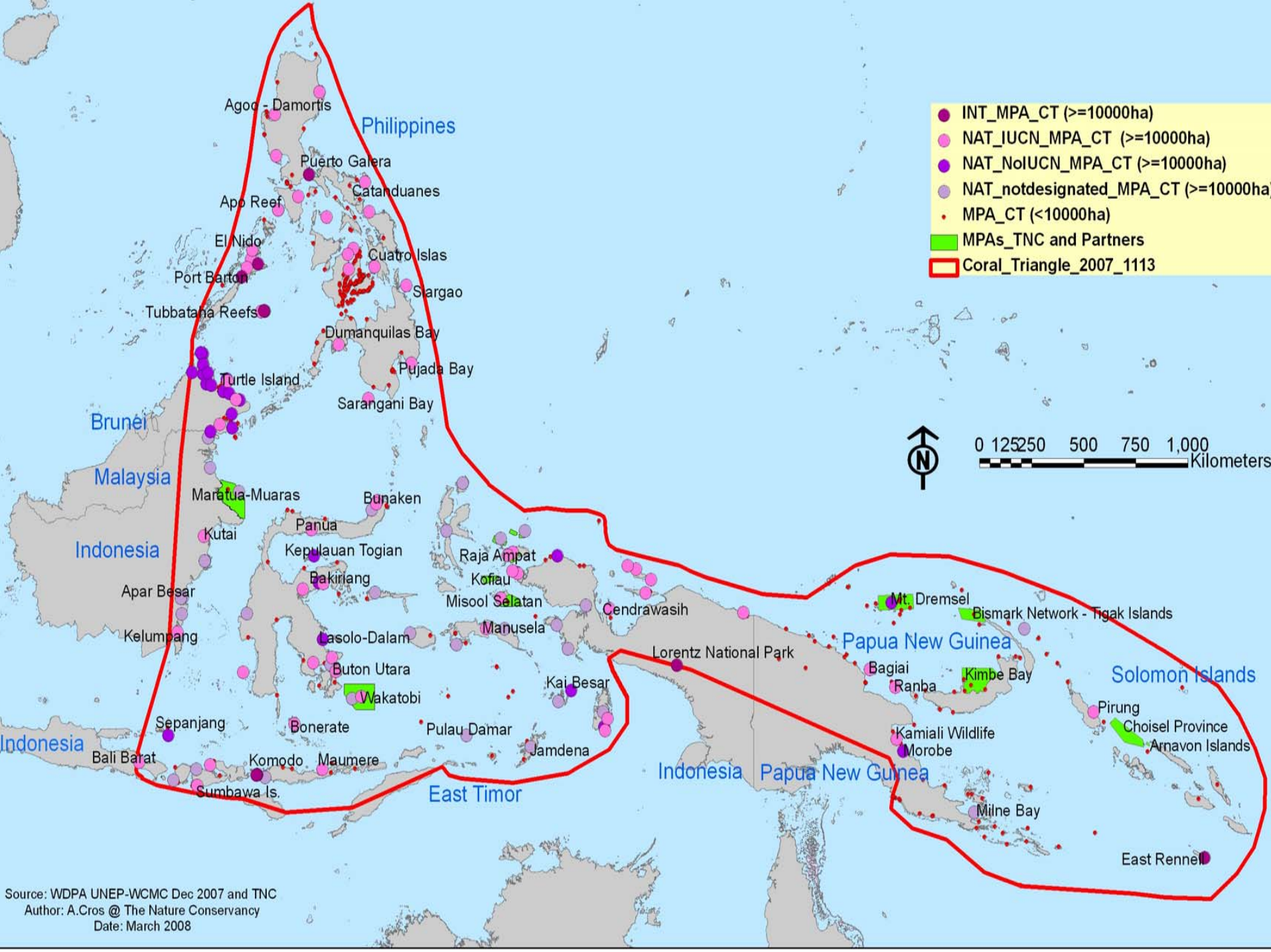
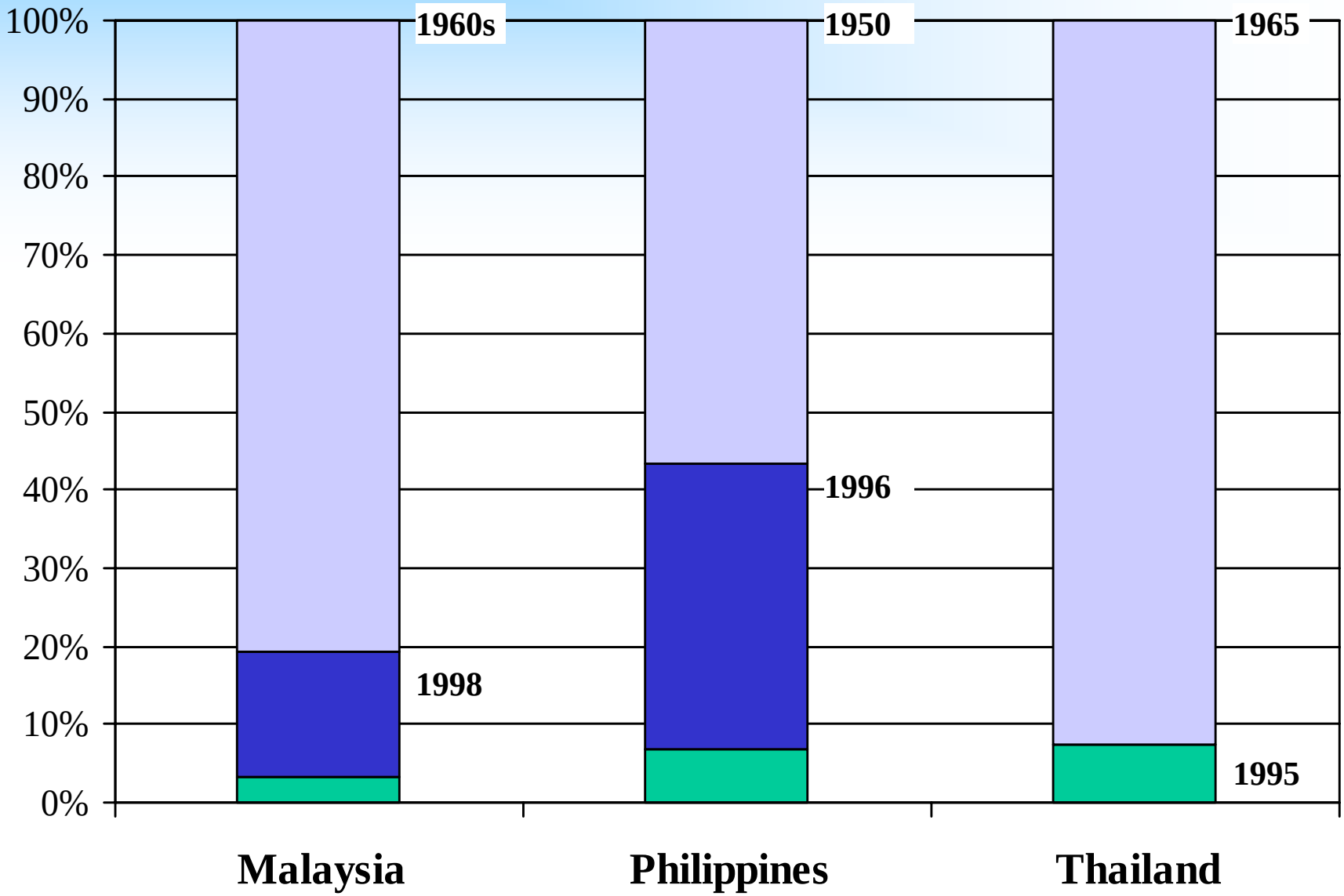


Source: WDPA UNEP-WCMC Dec 2007 and TNC
Author: A.Cros @ The Nature Conservancy
Date: March 2008

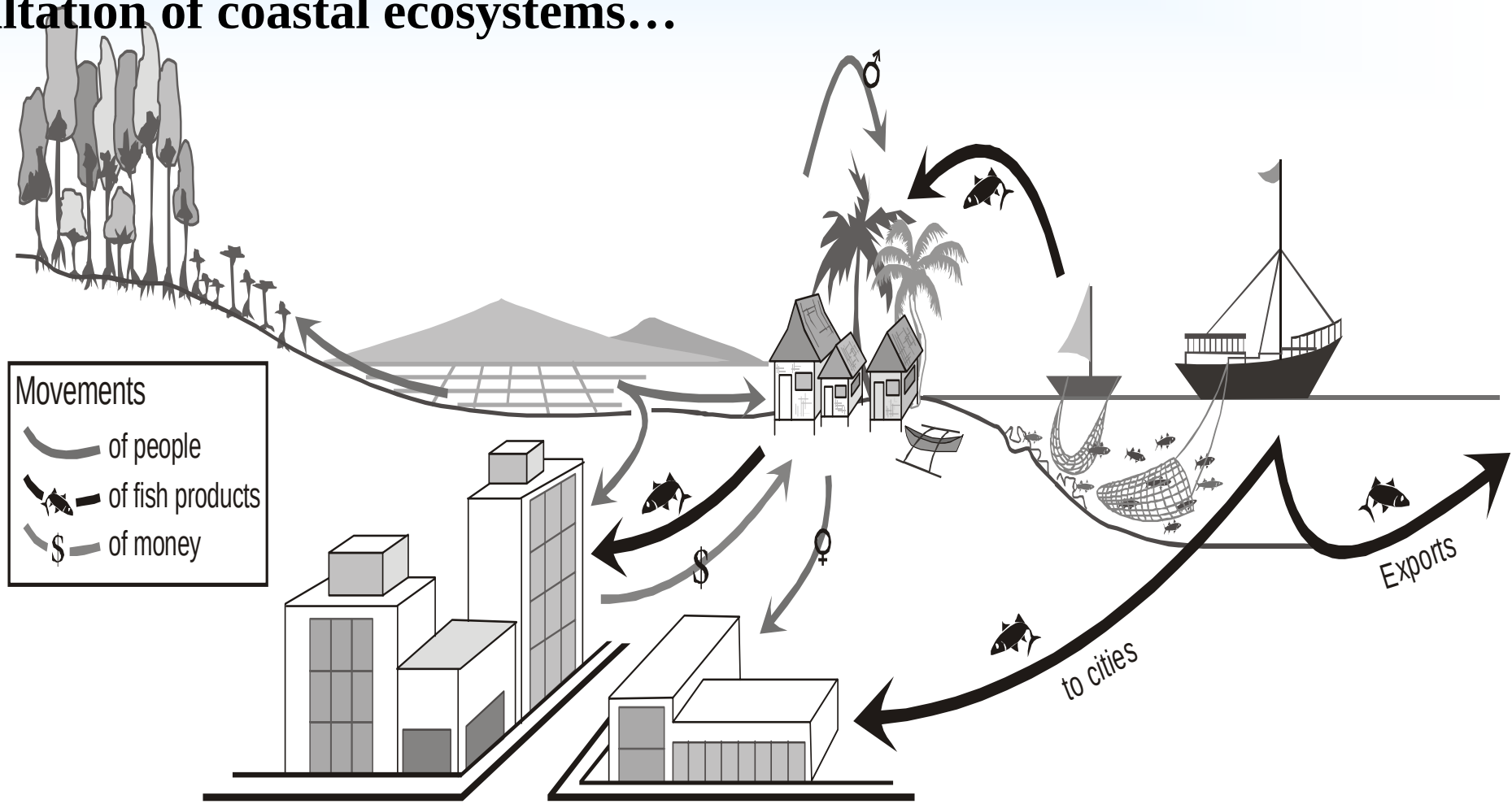
What is the Coral Triangle Initiative? Six objectives/strategies overall…

1. Priority “seascapes”—improved governance & management within existing areas
2. Ecosystem-based fisheries management
3. Strengthened management of MPAs
4. Adaptation to climate change
5. Reduced catch of threatened/endangered species
6. Effective and efficient CTI-scale collaboration and policy dialogue and related governance

Context: Declines of fish biomass in relation to first baseline data (not real baseline)

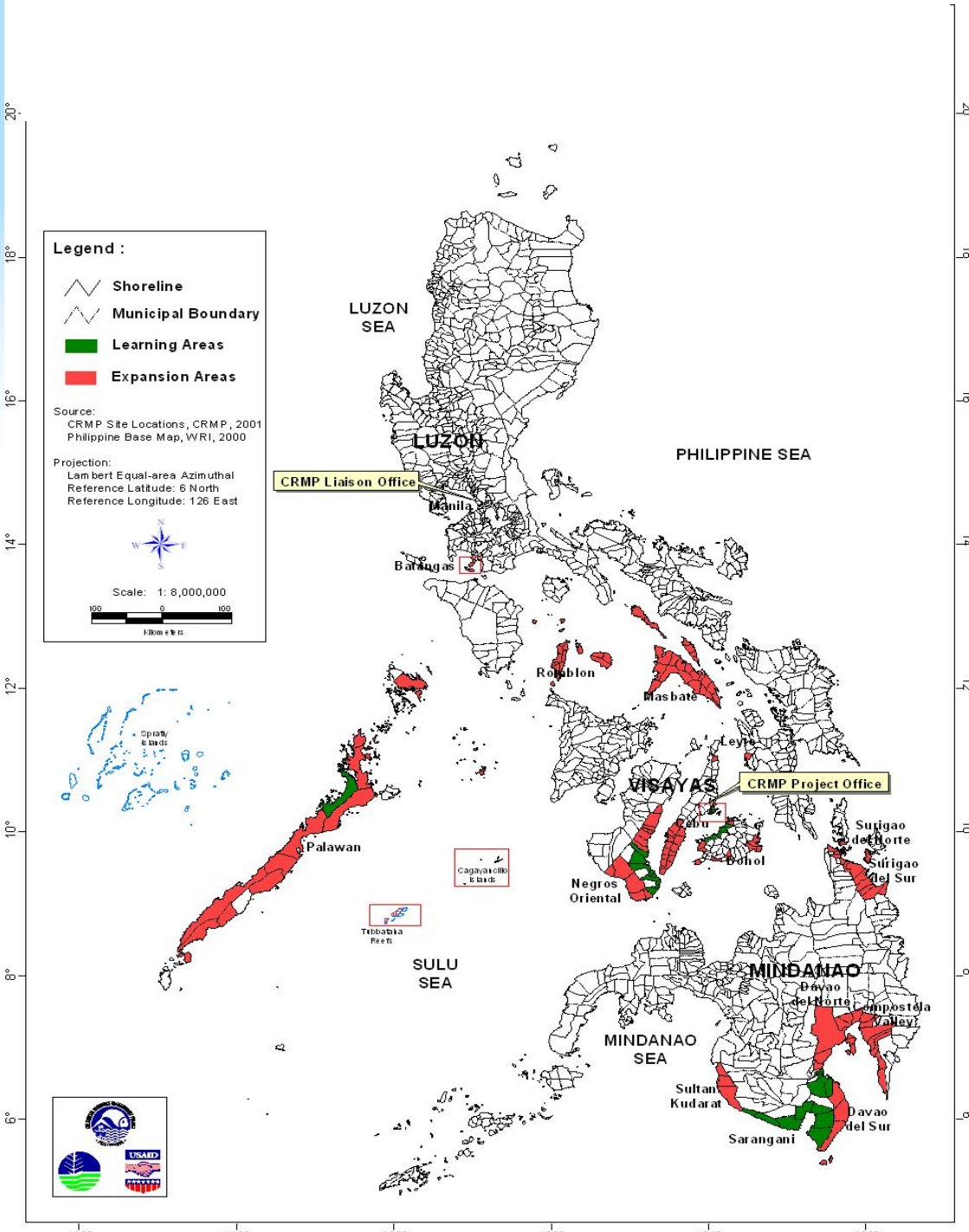


‘Malthusian over fishing’ model of Pauly (1997): Agricultural sector releases landless farmers—traditional fisheries management collapses; excessive fishing pressure exacerbated by inshore industrial fishing, by the entry of children of fishers, and by the subsidies from women working in cities, etc. Deforestation leads to siltation of coastal ecosystems…

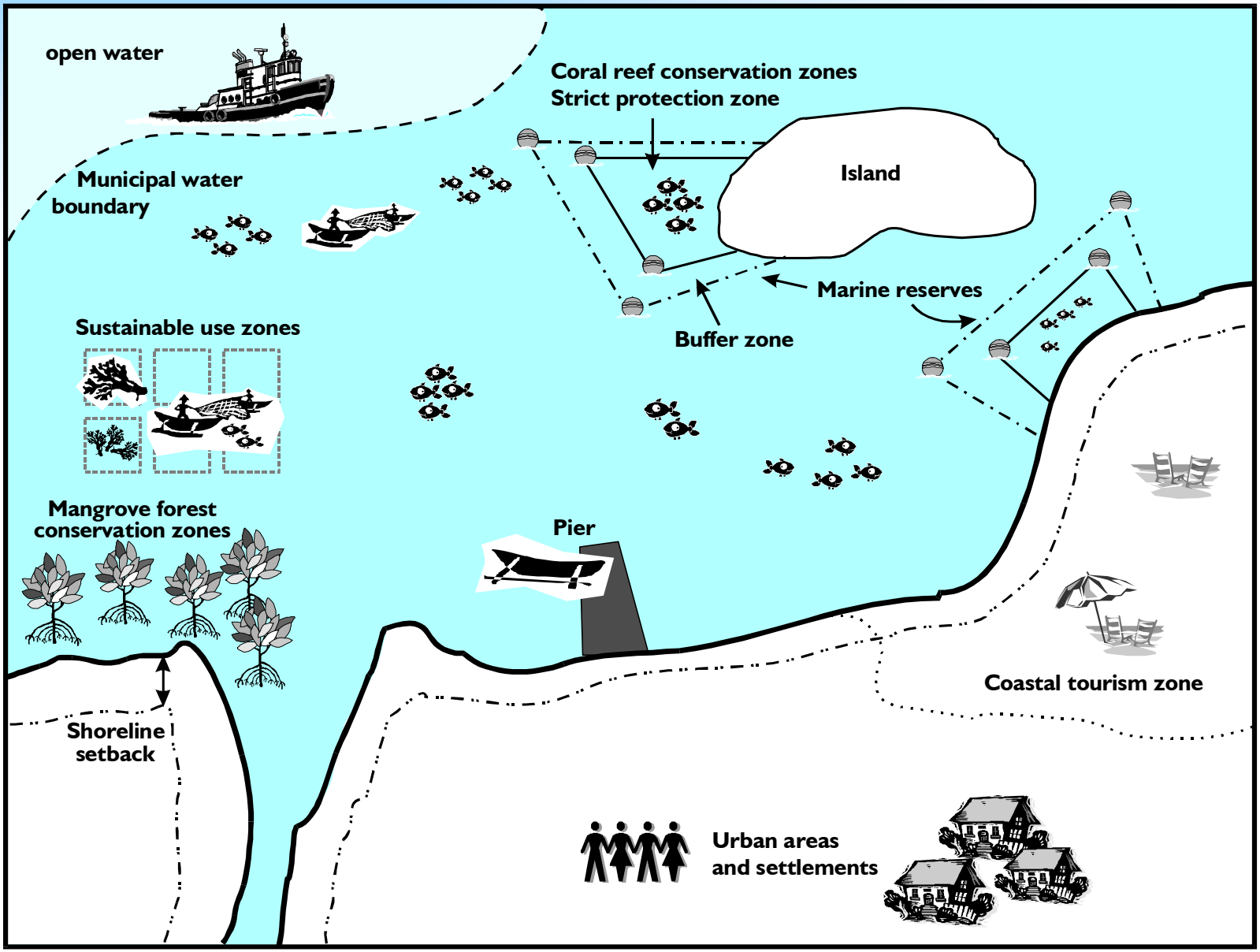


CRMP (1996-2004)

111 coastal municipalities, 3,000 km+ achieving benchmarks for Coastal Resource Management Levels I and II



“Best Practices” and zoning municipal waters use



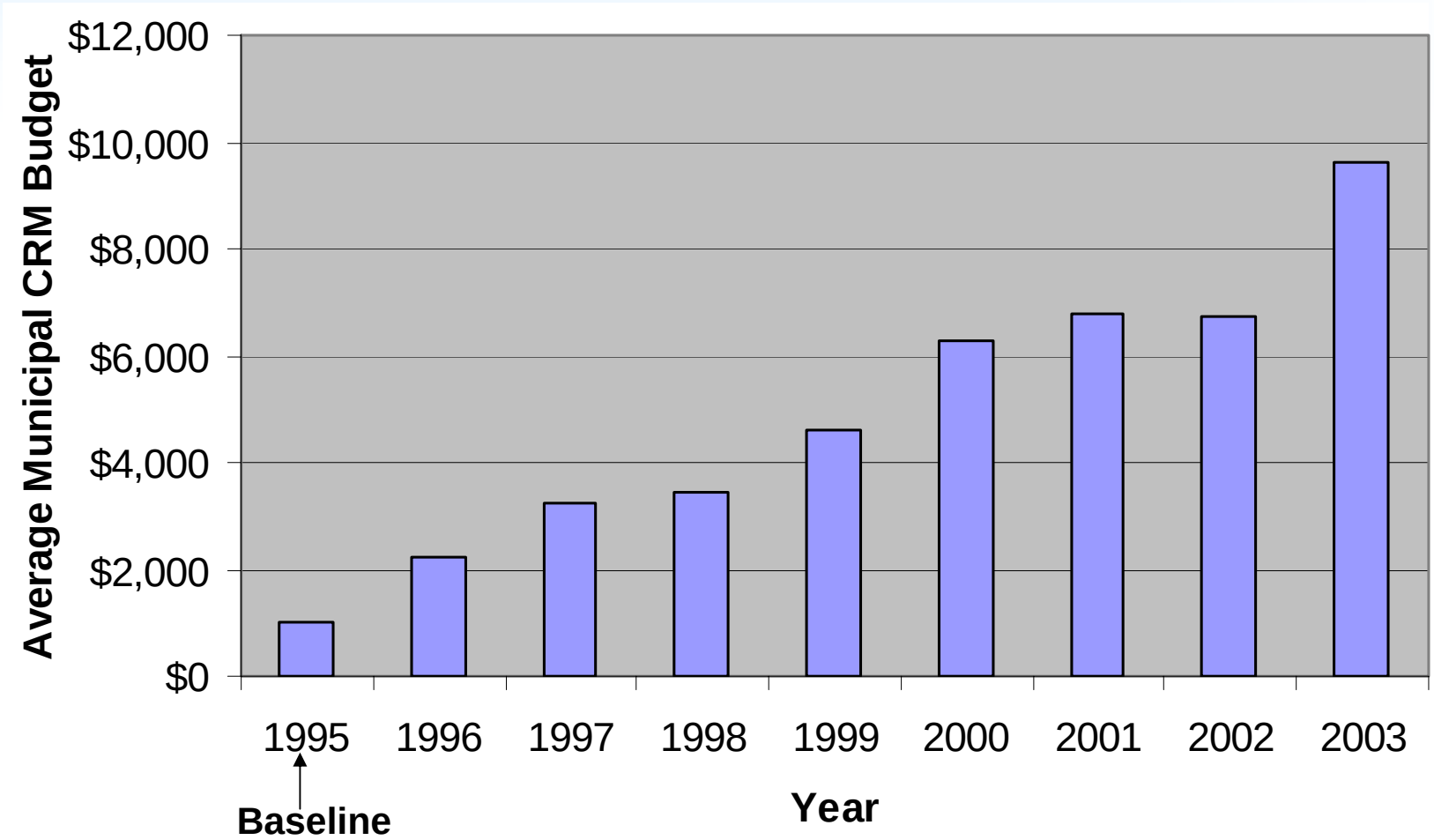
Coastal law enforcement is essential to restoring small scale fisheries

CLE Continuum

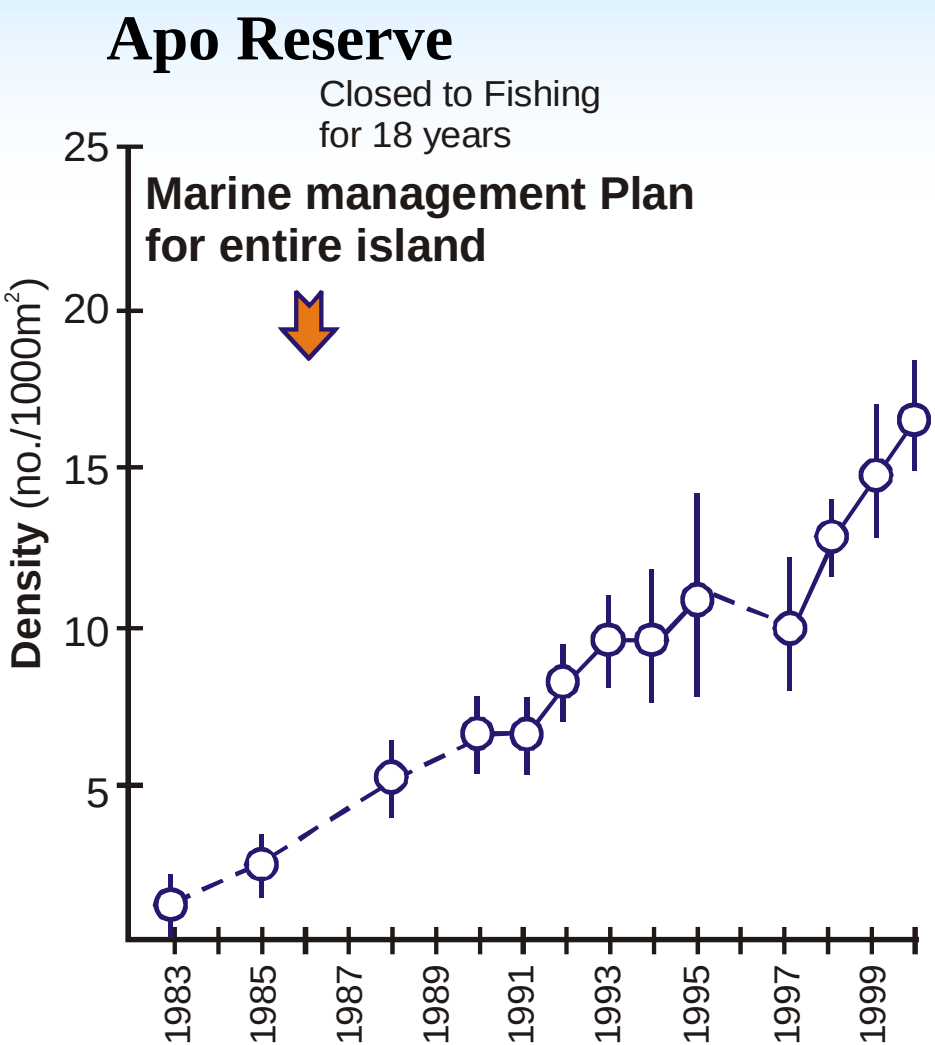
Preventive……..Corrective

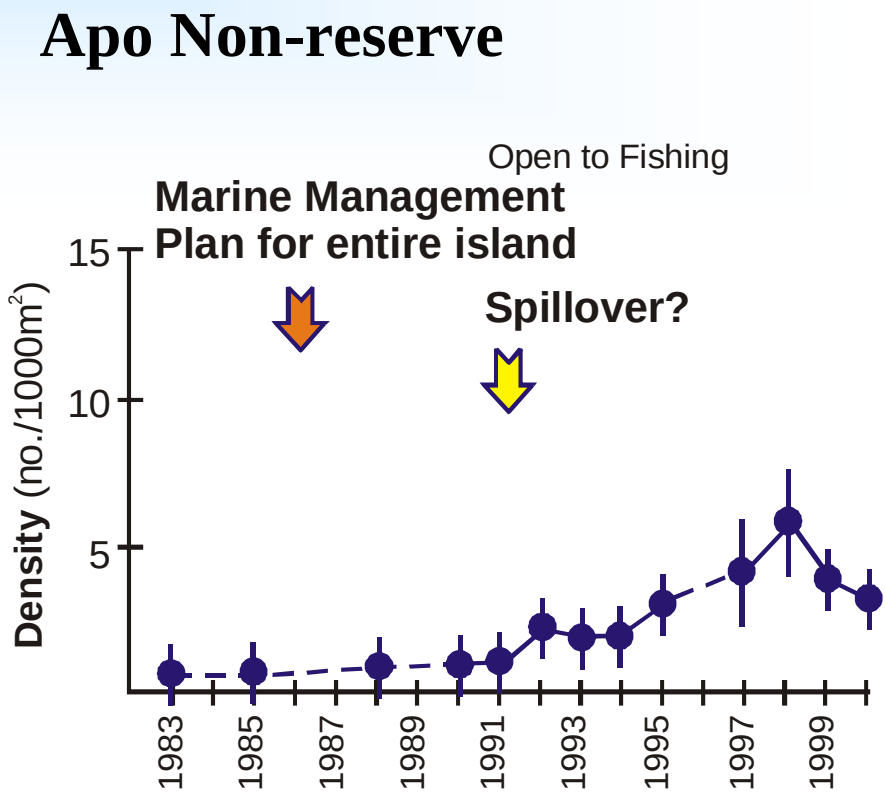
Prevent → **Apprehend** (Search, arrest, seize/confiscate) → **Prosecute** (Criminal/ Administrative)

Local government must continue to invest in management to sustain diverse benefits derived from coastal resources



Why focus on MPAs? Biophysical results known and provide incentives for EBM/ICM--more fish in MPAs





Source: Russ and Alcala 2003

Meta-analysis of MPA database in Philippines shows trends…

- > 5 years= Sig more fish
- Sig. more fish inside than outside when management rating >3
- Size matters (> 15 ha)
- Habitat quality

(Maliao et al. in prep.)

Why scale up to a network approach?

- Foster integrated ocean and coastal management through 3 interrelated functions and benefits:

1. Ecological – maintain functional systems by encompassing temporal and spatial scales of ecological systems; improve resilience by spreading risk

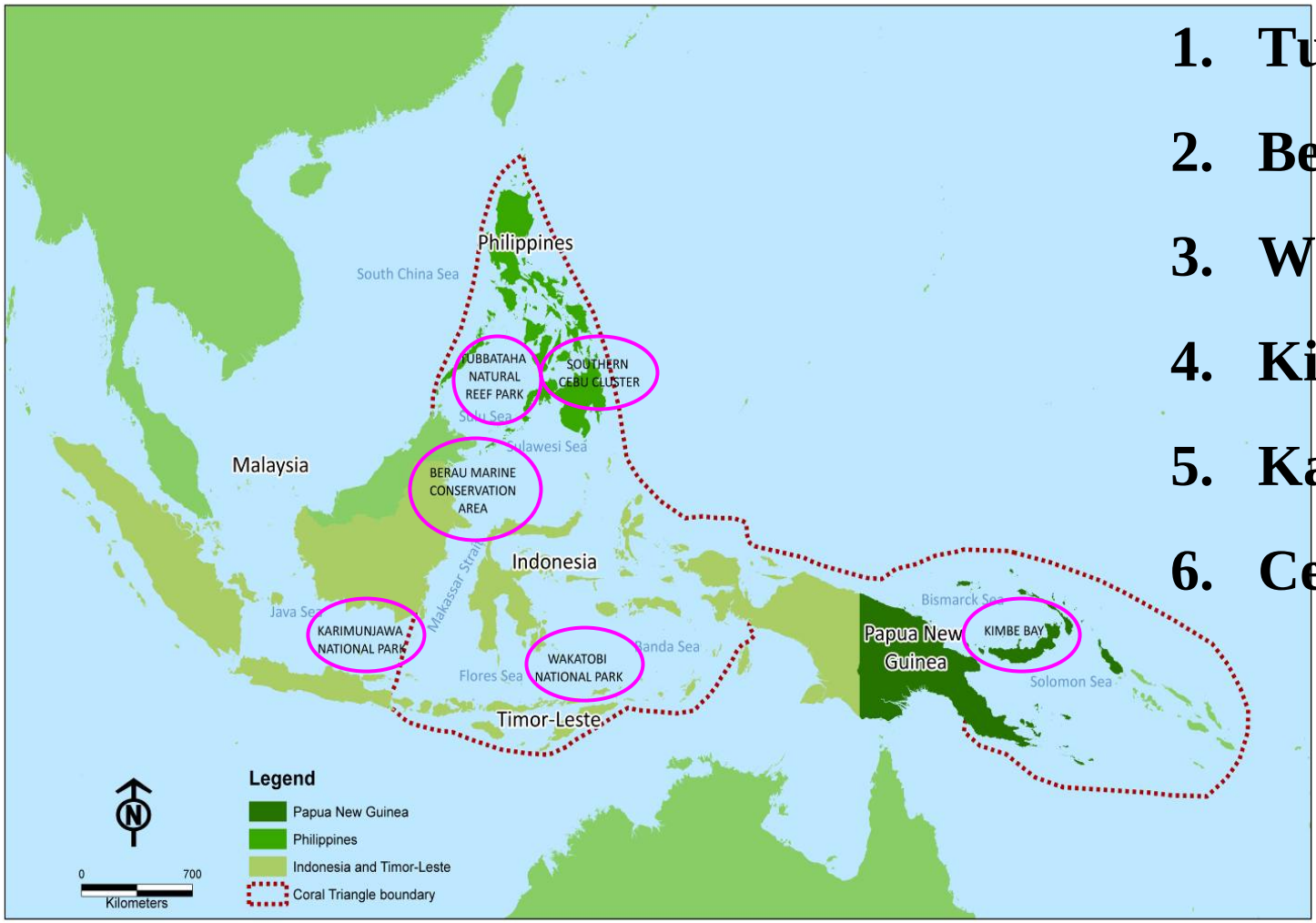
2. Social – help resolve and manage conflicts and impacts without compromising conservation and fisheries benefits

3. Economical – facilitate the efficient use of resources; help reduce poverty and generate income

Learning partnership among TNC, WWF, CI, WCS and USAID- started in 2004 with two overarching questions…

1. "How can we effectively design, implement, and manage representative and resilient MPA networks in tropical marine ecosystems?"
2. "What ecological, socioeconomic, and institutional principles, if met, will ensure that MPA networks provide enduring and effective conservation for marine diversity?"

Coral Triangle and MPA network survey sites



1. Tubbataha
2. Berau
3. Wakatobi
4. Kimbe Bay
5. Karimunjawa
6. Cebu

Coral Triangle boundary source: Coral Geographic (Veron et al unpublished data)

From Coral Triangle Survey: Level of impact of human activities and natural disturbances

Stressors	Disturbance
General illegal fishing*	Highest
Commercial fishing*	2nd highest
Waste (plastics etc)*	3rd Highest
Chemical Poisoning*	4th Highest

Stressor	Disturbance
Industrial Pollution*	4th Lowest
Coral Bleaching*	3rd Lowest
Typhoons*	2nd Lowest
Aquarium Fishing*	Lowest

N = 94, * The mean difference is significant at 0.05 level

Planning and Design Phase

"It is quite difficult to put places under certain management regimes as you think best, when you need to consider social / economic considerations of people living in the area"

- *Main assisting NGO*

Workshop for 6 sites in CT discussed ideal vs reality of MPA network implementation--2008

1. Ecology:

- How to design for resilience to climate change?
- How to consider connectivity issues in MPA network design?
- Evaluation of ecosystem services beyond fisheries
- Lack of effective biophysical monitoring with data management

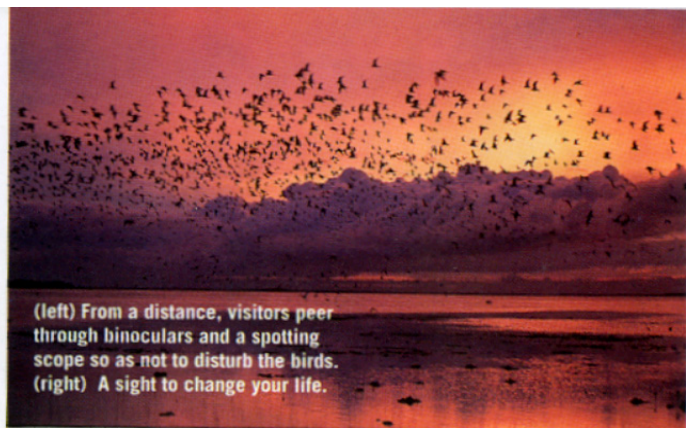
…points in MPA workshop

2. Social and Governance:

- Devolution from national to local--governance
- Need for holistic conflict resolution
- Increased community engagement and participation
- More education to raise awareness
- Simpler regulations better than complex (zoning)
- Support comprehensive management plans
- More and better social and learning networks

…points: 3. Finance and economic returns

- Value coastal resources and return on investment
- Start sustainable financing early
- Broad economic development strategies
- Financial support for integrated plans
- Generate revenues thru MPAs, tours, etc.
- Integrate alternative livelihood within ICM



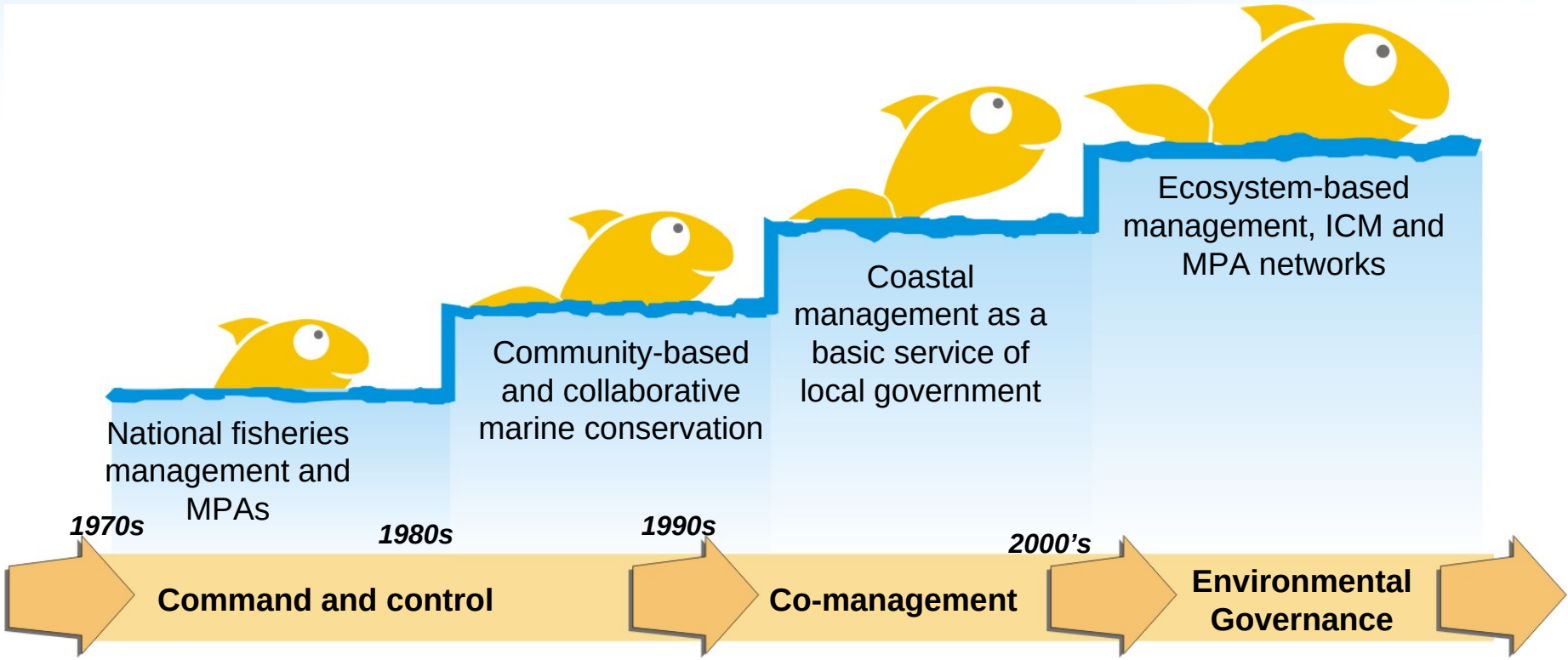
Recurring Themes in the Coral Triangle areas surveyed in 2008

- Opportunities for capacity building of MPA managers & supporting governments and NGOs
- Lack of understanding of “network” among practitioners and scientists
- Potential for learning network of MPA practitioners
- **Need for basic planning and management within most to all MPAs before "networks" will be functional**

Prerequisites to form MPA networks: Participation and scale are key

- Need institution that operates at scale of potential network **OR**
- Institutions must be networked and coordinated
- Monitoring and data management system capability within institution(s) at scale
- Innovate in ICM/EBM through local level programs that capacitate

Change must be adaptive building on lessons learned and outcomes of previous steps within national and regional context



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Great Barrier Reef Marine Park Authority

Let's learn from the emerging lessons of ICM, EBM and MPAs to build sustainable fisheries and resource use--
Thank you!

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