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Biodiversity conservation in the Yellow Sea Large Marine Ecosystem (YSLME)

Mark Walton

UNDP/GEF YSLME Project

EAS Congress 2009

T3.3: Innovation in biodiversity and habitat conservation in the Yellow Sea

Manila, Philippines. 23-27 Sept 2009





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Yellow Sea LME

The current state

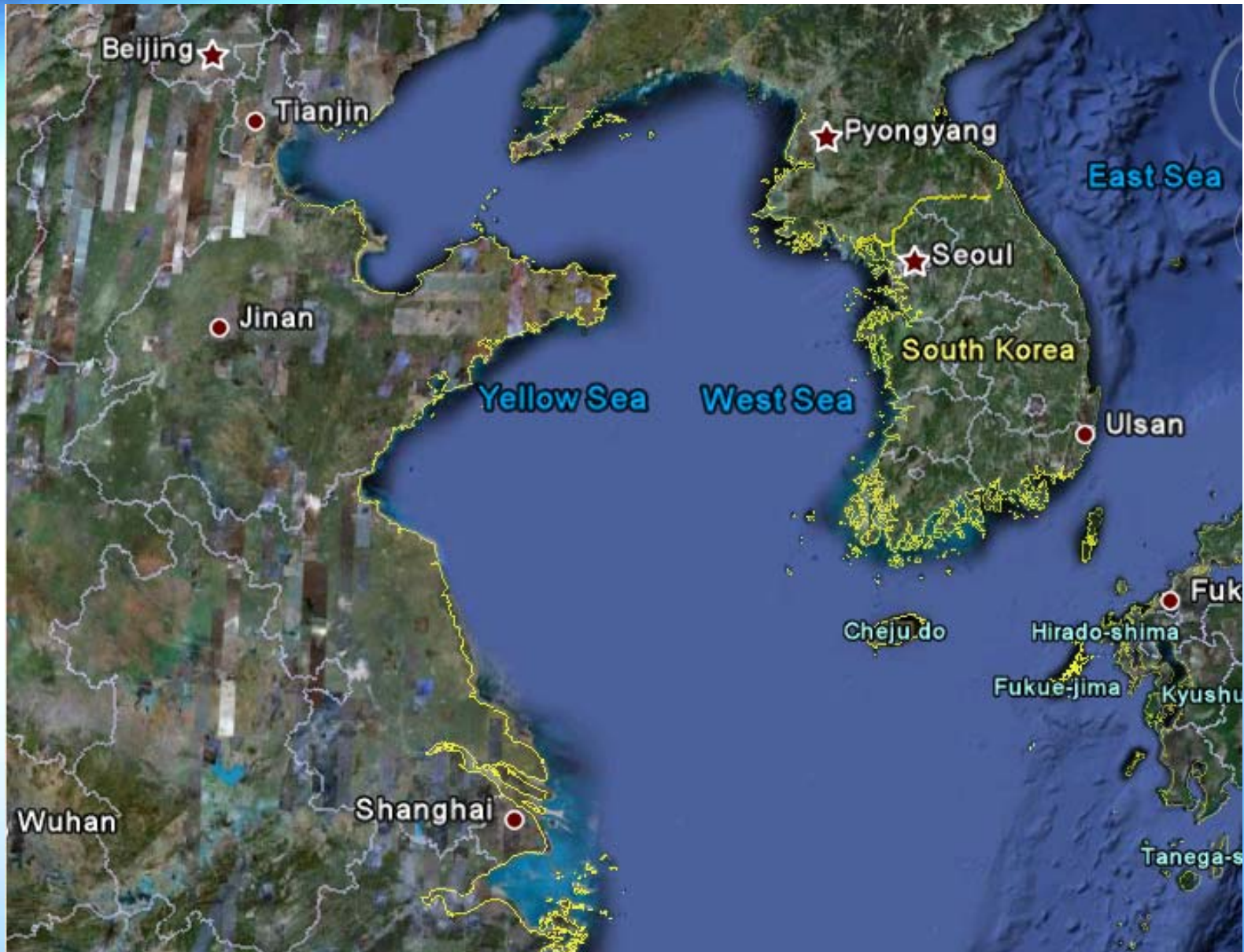
Environmental Status Reports of R. Korea & China, TDA, RSC, YSEPP,....



The Yellow Sea

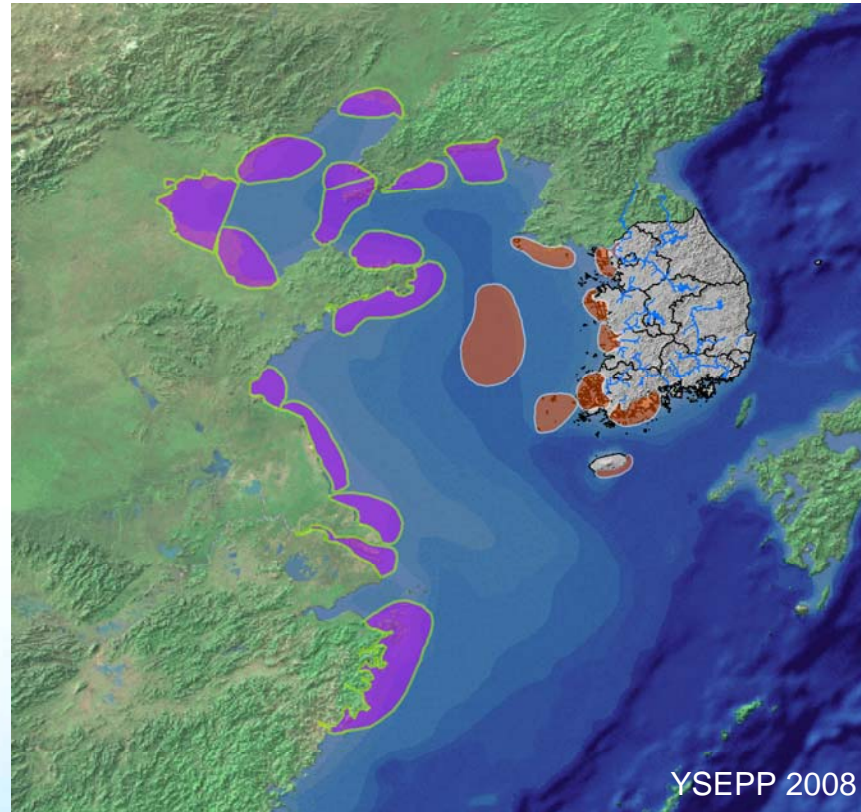


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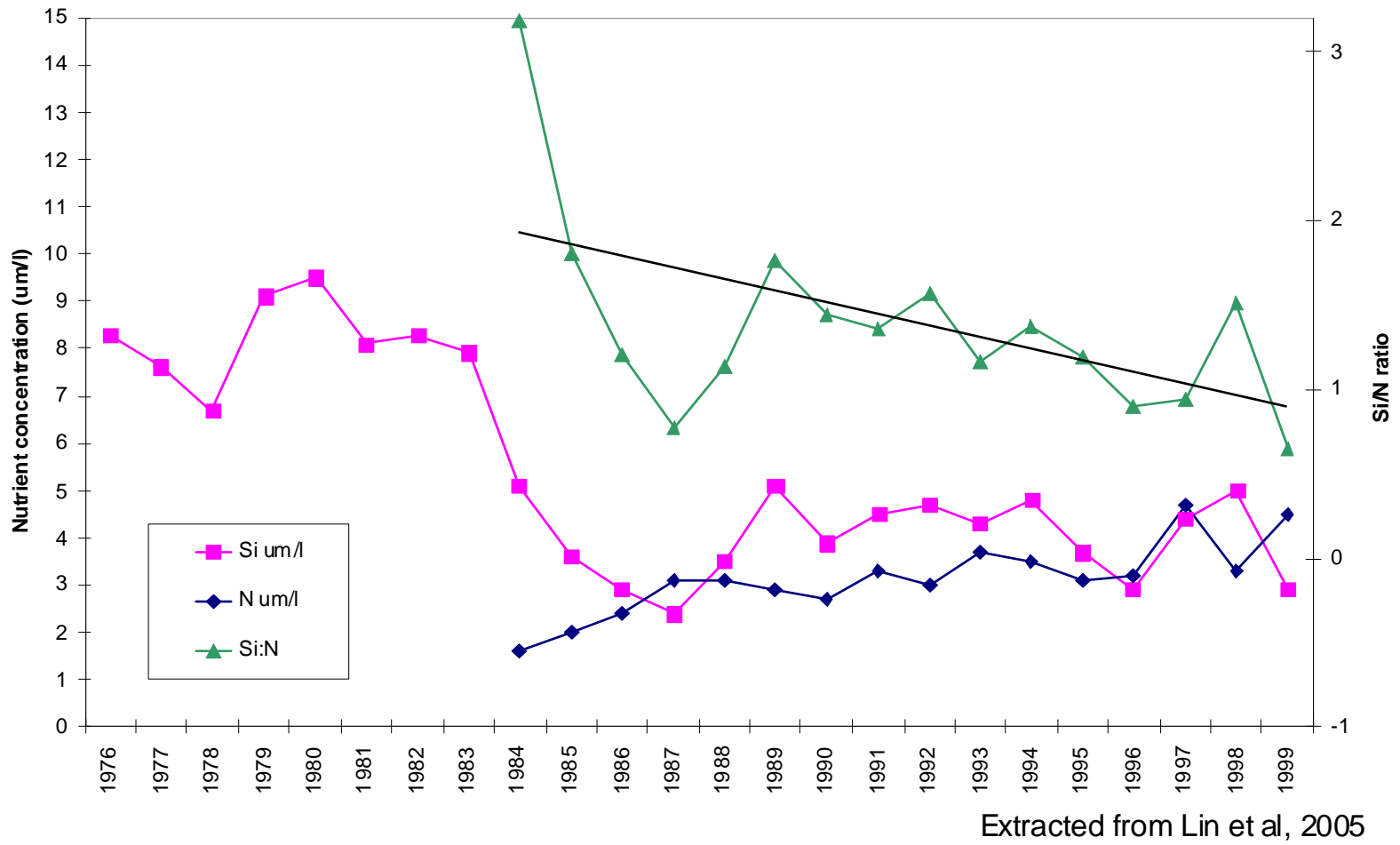
Impacts: Habitat loss and degradation



Climate change: Mean SS temp. increased $0.4 - 0.9^{\circ}\text{C}/\text{decade}$ in the Yellow Sea

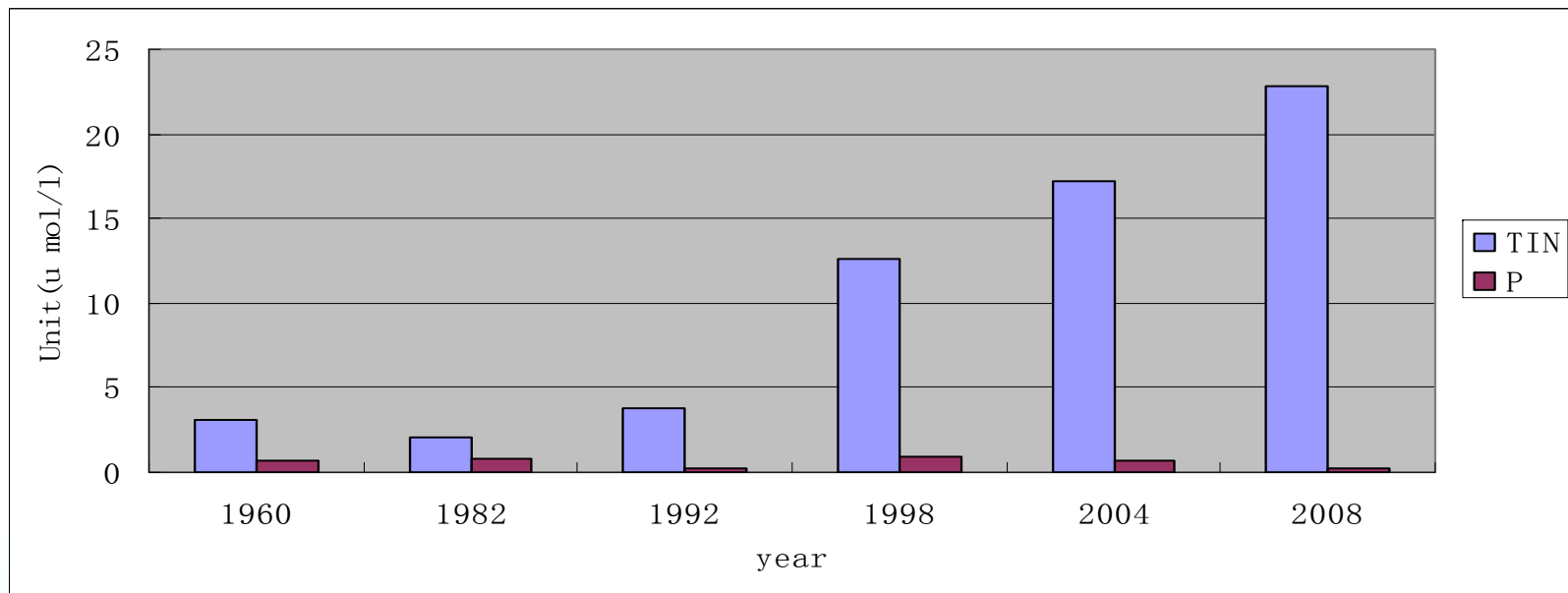


Impacts: Pollution





Impacts: Pollution

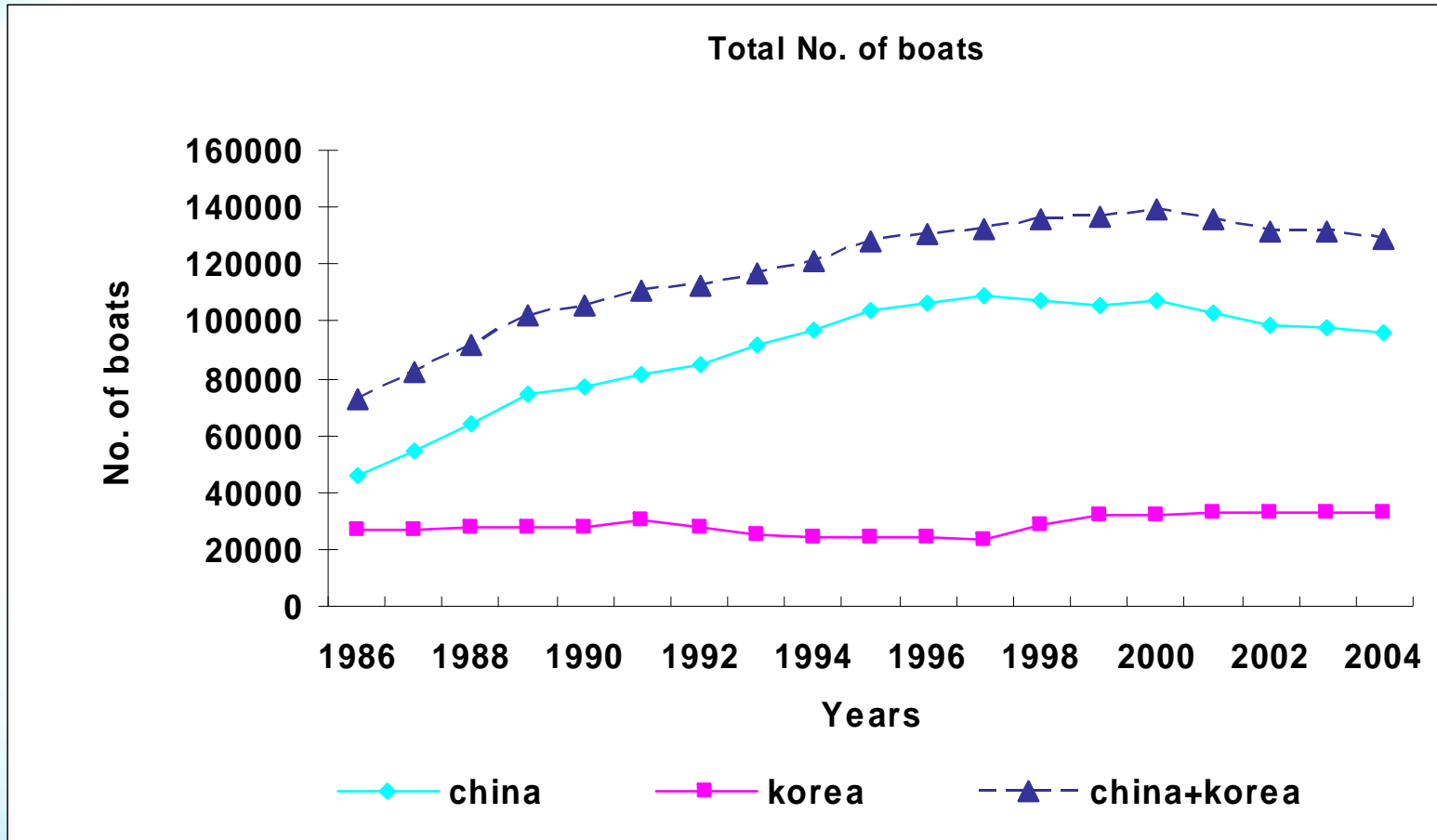


Changes in total inorganic nitrogen and phosphorus in Laizhou Bay, Bohai Sea

From Tang LME APEC workshop 2009

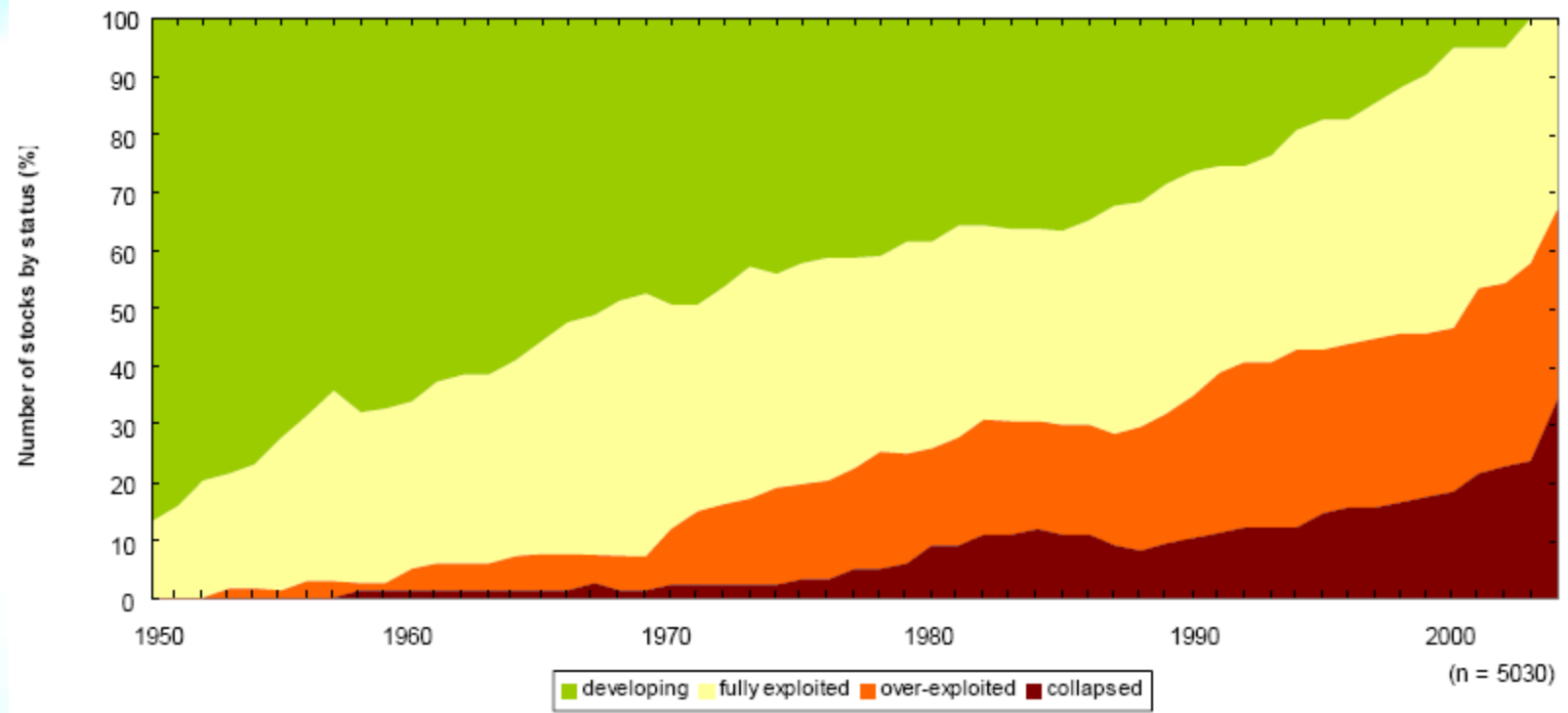


Impacts: Overfishing





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UNEP LME report 2009



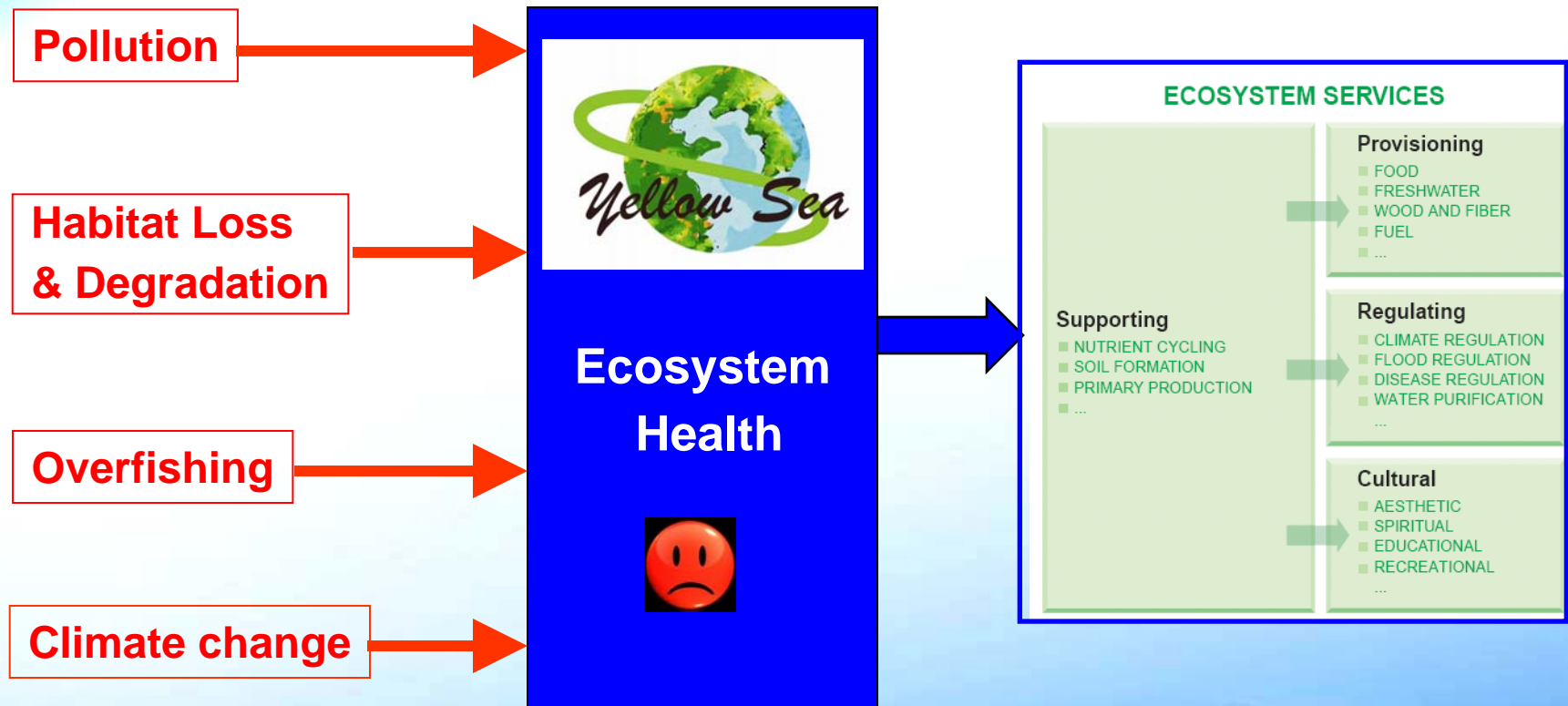
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Implications for Management & Strategic Action Programme (SAP)



Ecosystem Carrying Capacity

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Measuring Ecosystem Health = Monitoring



Impacts of a decline in ecosystem health

- **Increased likelihood of nonlinear changes**
 - There is *established but incomplete* evidence that changes being made in ecosystems are increasing the likelihood of nonlinear changes in ecosystems (including accelerating, abrupt, and potentially irreversible changes), with important consequences for human well-being

- **Fisheries Collapse**
 - Eg. Atlantic cod stocks off the east coast of Newfoundland collapsed in 1992

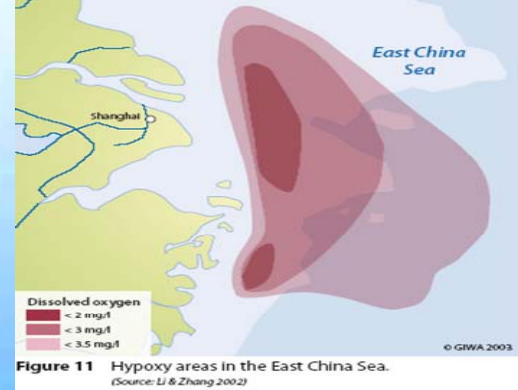
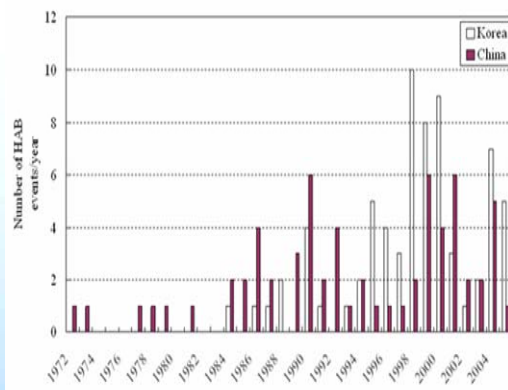
- **Eutrophication and hypoxia**
 - Once a threshold of nutrient loading is achieved, changes in freshwater and coastal ecosystems can be abrupt and extensive, creating harmful algal blooms (including blooms of toxic species) and sometimes leading to the formation of oxygen-depleted zones, killing all animal life



Decline in ecosystem health

Changes to phytoplankton and zooplankton communities

Increasing frequency of red tides, algal and jellyfish blooms



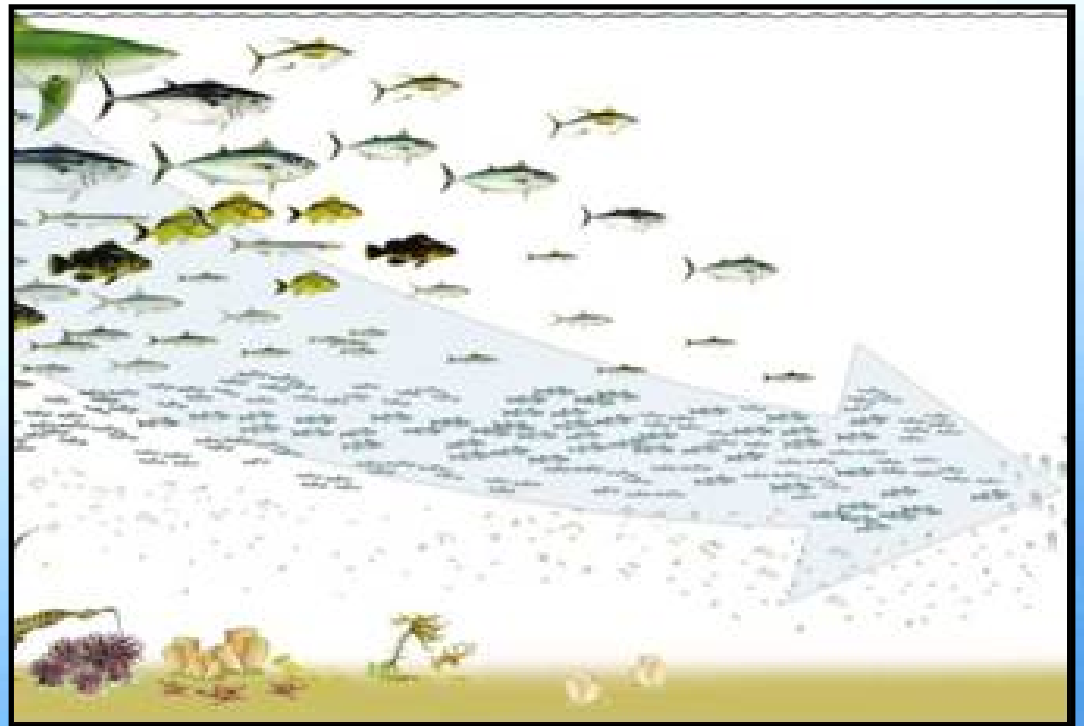
From Tang LME APEC workshop 2009



Impacts on Provisioning services

In the last decades the decline in ecosystem health and overfishing have impacted fish stocks:

- Fish catch composition
- Biomass (40% decline between 60's and 80's)
- Mean trophic level
- Size at maturity
- Mean size at capture





Y.S.I.M.F

ECC

Provisioning

Regulating

Cultural

Supporting

Regional Targets

25-30% Reduction in fishing rate

Rebuilding depleted fish stocks

Improvements in mariculture tech.

Meeting Conventions on Pollution

Reduction in contaminants loading

Reduction in polluting beaches

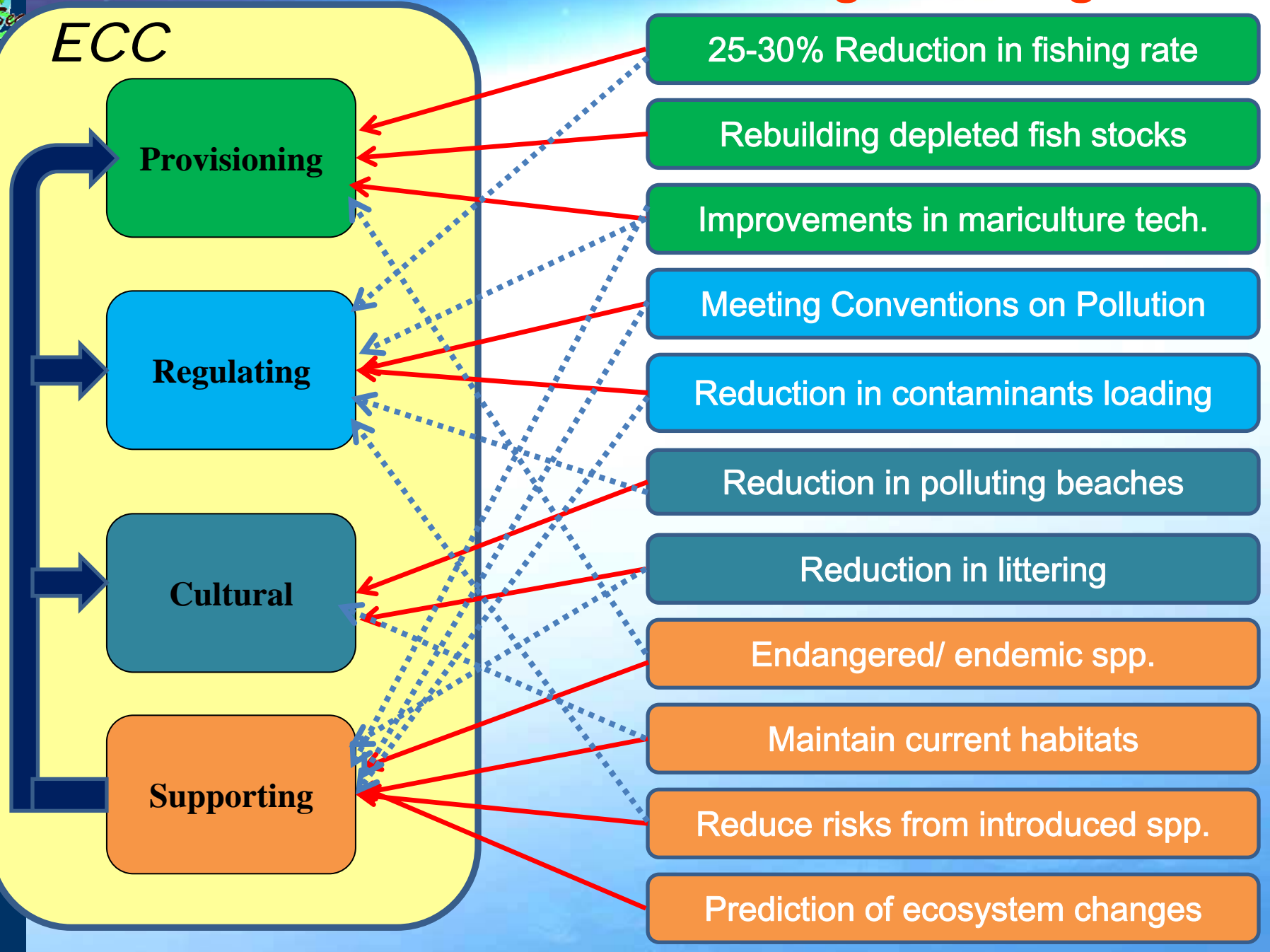
Reduction in littering

Endangered/ endemic spp.

Maintain current habitats

Reduce risks from introduced spp.

Prediction of ecosystem changes





Management Actions

Fisheries

- 25-30% reduction in fishing effort
- Rebuilding of fish stocks through stock enhancement and habitat improvement
- Introduction of more sustainable mariculture

Pollution

- Control total loading from point sources
- Control total loading from non-point sources and sea-based sources

Biodiversity

- Establish and implement regional conservation plan to preserve biodiversity
- Develop regional guidelines for coastal habitat management
- Control new coastal reclamation
- Promote public awareness of the benefits of biodiversity conservation
- Establish network of MPAs

Regional Monitoring Network – adaptive management



How are we doing?

General

- SAP endorsed Nov 2009 by China and R. Korea, with DPRK committed to supporting it.
- National Strategic Actions Plans nearing completion
- YSLME Commission is being set up to coordinate SAP implementation – to ensure EBA to management
- 2nd phase preparation

Fisheries

- More US\$ 300 million spent of reducing fishing effort
- Billions of larvae released each year
- Millions spent on habitat improvement

Pollution

- China and R. Korea committed to reducing point-source loading
- Current demonstration activities will recommend policy changes to reduce non-point source pollution



Biodiversity

- 3 demonstration activities in each country
- Management plans being drafted
- One demonstration site – now designated a provincial MPA
- Co-operation with KMI and YSESP to develop a network of MPA





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Stakeholder involvement contributed to generate political and public support in marine environmental protection



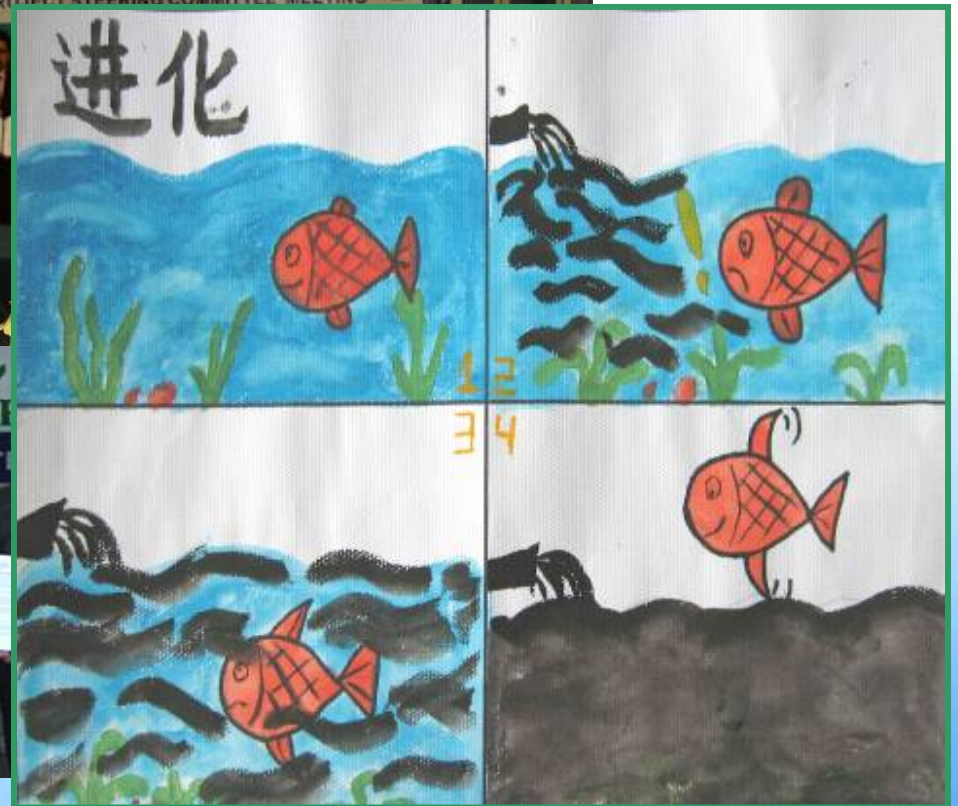
Parliament



Local government



NGO's involvement



Children's participation



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Capacity building contributed to better involvement of all stakeholders in marine environment protection



Capacity building

Small grant programme

Local governmental officer's training

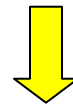


Conclusion

Public awareness



Stakeholder Involvement



Control Impacts



Healthy Habitats



Biodiversity



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Thank you to our Partners

- Organisers of our demonstration projects
- Small grants recipients
- Regional partners

Thank you

www.yslme.org