

Visit to Korea (2016):

2016 NEAMPAN Workshop

“Sharing experiences in MPA Management”

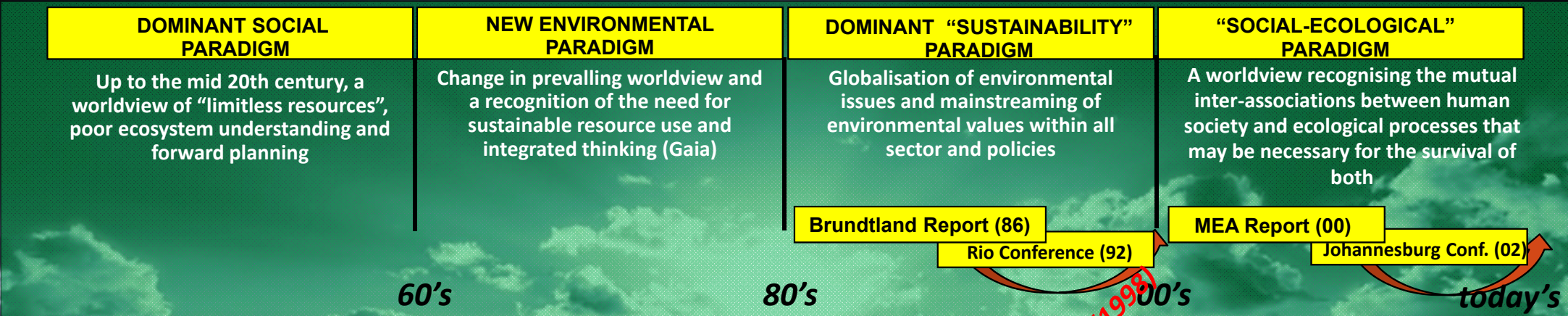
2nd NEAMPAN Steering Committee Meeting



***The Importance of Ecosystem-Based Management for
Marine Protected Areas: Introducing a formal approach,
the EBMS***

Rafael Sardá (Ph.D., MBA)

The Ecosystem Approach (EA)



The Ecosystem Approach-EA (CBD, 1998).- Strategy for the Integrated Management of land, water and living resources that promotes conservation and sustainable use in an equitable way

The EA is aimed to develop new management approaches. The EA brings together the human, biological and physical parts of the system for which management action is needed

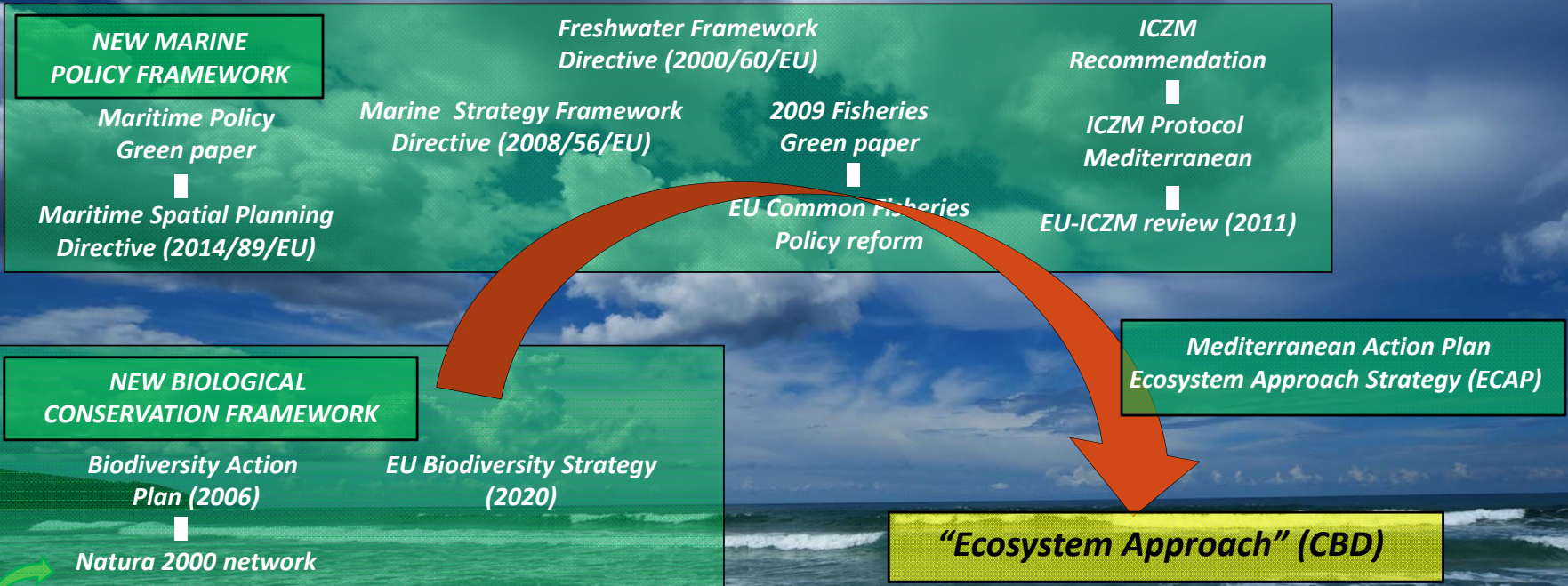
The Ecosystem Approach (EA) Strategic Principles

1. • The objectives of management are a matter of **societal choice**.
2. • Management decentralized to the **lowest appropriate level**.
3. • Managers should consider **effects** on adjacent ecosystems.
4. • Manage the ecosystem in an **economic context**
 - (i) **reduce market distortions that adversely affect biological diversity;**
 - (ii) **promote biodiversity conservation and sustainable use;** and,
 - (iii) **internalize costs and benefits in the given ecosystem.**
1. • Keep ecosystem structure and functioning to **maintain ecosystem services**”.
2. • Ecosystem managed within the **limits of their functioning**.
3. • Appropriate **spatial and temporal scales**.
4. • Set **long-term objectives**.
5. • Management must recognize that **change is inevitable**”
6. • Balance between integration, conservation and use of **biodiversity**.
7. • Decision-making should consider all forms of **relevant information**.
8. • **Involve** all relevant sectors of society and science.

Convention Biological Diversity (1998). Report of the Workshop on the Ecosystem Approach, Lilongwe, Malawi, 26–28 January 1998, UNEP/CBD/COP/4/Inf.9, p. 15.

The Ecosystem Approach in the EU (and overseas)

Marine Policy



At the hearth of the Ecosystem Approach is the assumption that coupled social and ecological systems can be studied and managed in a holistic manner.

The Ecosystem Approach in practice

The Ecosystem Approach strategy which accepts that humans are part of the global ecosystem and not separate from it, has emerged as the dominant paradigm for managing coastal and marine ecosystems

Being a dominant paradigm in regulation. It is rarely used in practice... WHY?

Lack of proper governance frameworks

Lack of a common language

Too many concepts

Lack of adequate EA-driven visions

Policy fragmentation issue (Drivers-Pressures)

Babel Tower dilemma (confusing/different terms)

Lot of guidelines and compendiums

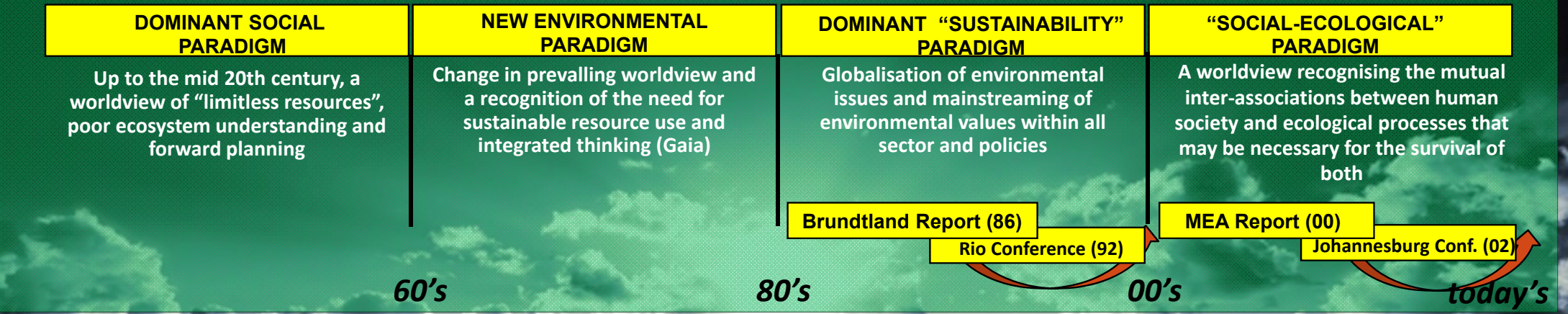
Not proper visions developed for management

Conservation of ecosystem structure and functioning to maintain ecosystem services is a priority target of the Ecosystem Approach... as well as for Marine Protected Areas (MPAs)

Necessity to reconcile the theory of ecosystem science with practice of ecosystem management

Necessity to improve the effectiveness of governance structures and management tools

From Environmental Quality Management to Ecosystem-Based Management



Ocean & Coastal Management xxx (2015) 1–11

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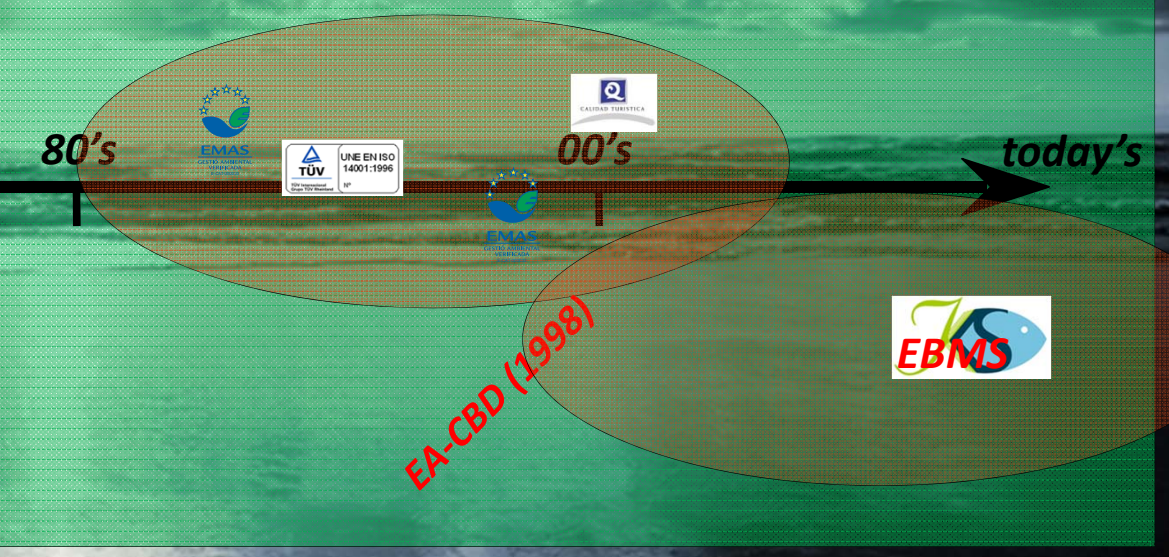
Ocean & Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman

Towards a new Integrated Beach Management System: The Ecosystem-Based Management System for Beaches

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MPA's Networks

Environment and Development



Economic and Social Commission for Asia and the Pacific

ENEA Office



Energy



Green Growth and Green Economy



Quality of Growth



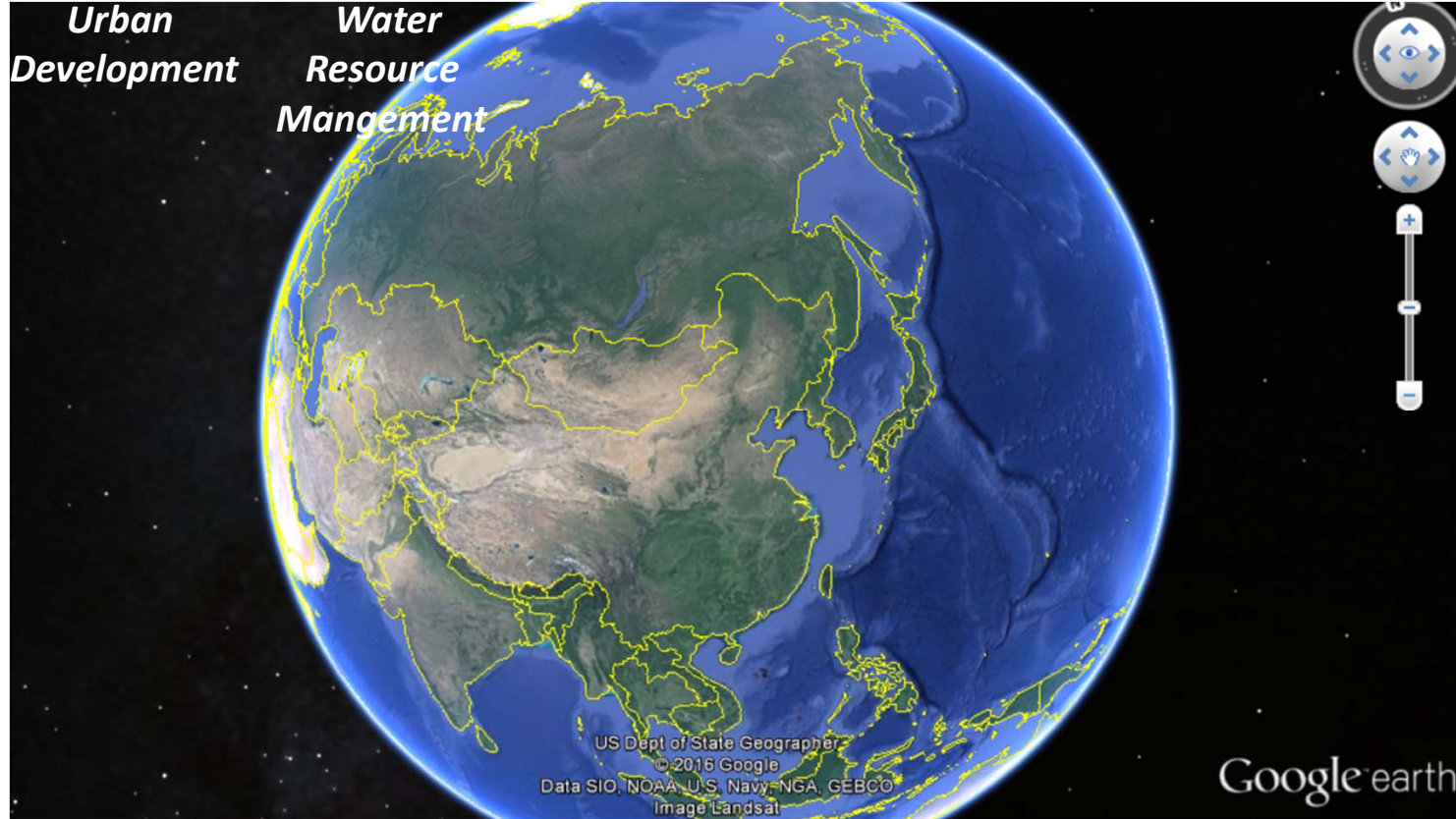
Urban Development



Water Resource Management



Ecosystem Approach (Strategy implementation)



MPA's Networks



MEDPAN

Network of Marine Protected Area managers in the Mediterranean



NEAMPAN

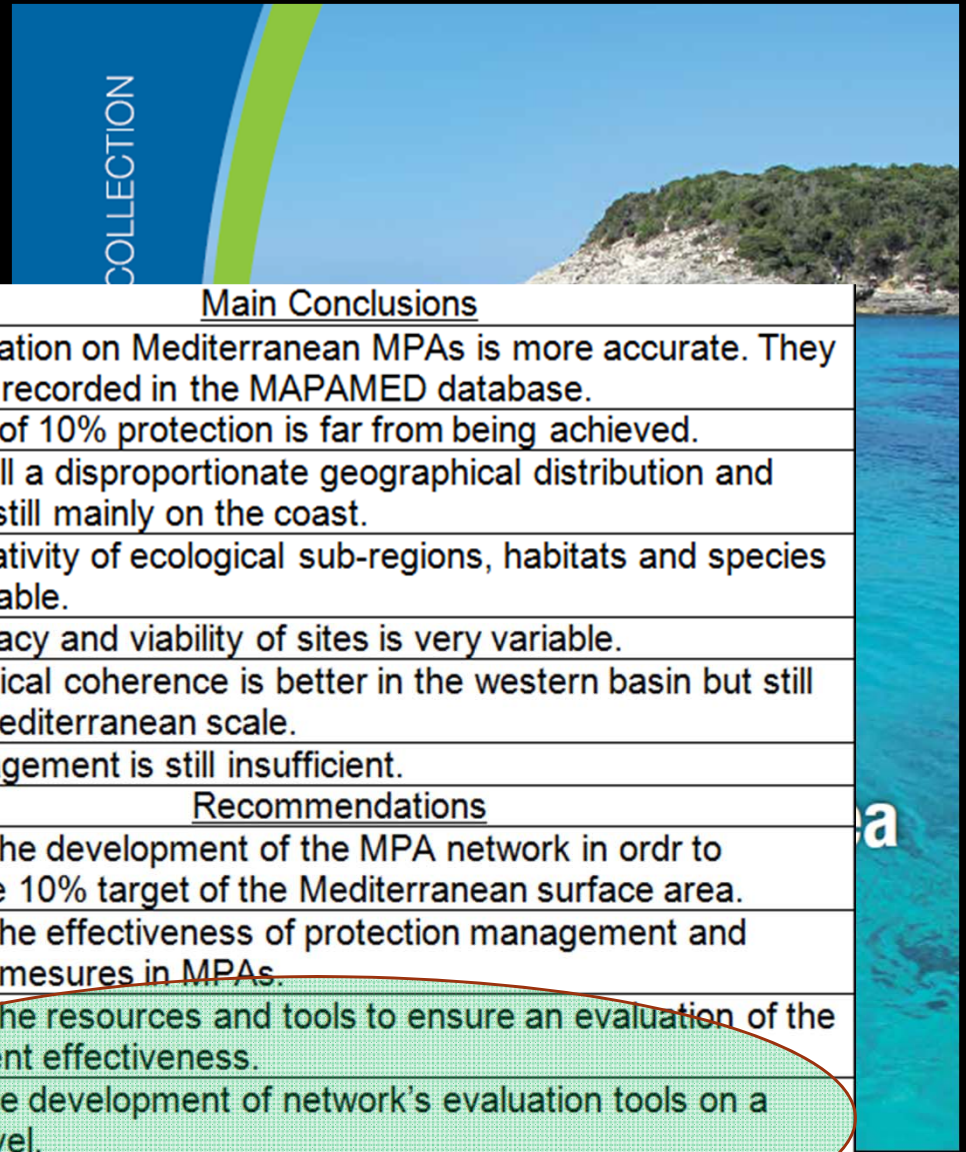
North-East Asian Marine Protected Areas Network



MPA's Networks (MEDPAN)



Network of Marine Protected Area managers in the Mediterranean



COLLECTION

<u>Main Conclusions</u>	
1	The information on Mediterranean MPAs is more accurate. They have been recorded in the MAPAMED database.
2	The target of 10% protection is far from being achieved.
3	There is still a disproportionate geographical distribution and MPAs are still mainly on the coast.
4	Representativity of ecological sub-regions, habitats and species is very variable.
5	The adequacy and viability of sites is very variable.
6	The ecological coherence is better in the western basin but still low on a Mediterranean scale.
7	MPA management is still insufficient.
<u>Recommendations</u>	
1	Reinforce the development of the MPA network in order to achieve the 10% target of the Mediterranean surface area.
2	Reinforce the effectiveness of protection management and evaluation measures in MPAs.
3	Reinforce the resources and tools to ensure an evaluation of the management effectiveness.
4	Promote the development of network's evaluation tools on a regional level.
5	Ensure a better management of threats to MPAs.
6	Enhance the Mediterranean MPAs international recognition.

a

MPA's Networks (MEDPAN)

NEASPEC
North-East Asian Subregional Programme
for Environmental Cooperation

NEAMPAN

North-East Asian Marine Protected Areas
Network



<http://www.neaspec.org/our-work/marine-protected-areas-mpa-north-east-asia?ckattempt=1>

The MPAs in North-East Asia show, however, some severe limitations:

- **New concept:** Protected areas have been mostly in the terrestrial context; most MPAs have only been designated within the last decade
- **Different terminologies:** Characteristics, purposes and regulations regarding MPAs vary by country - marine nature reserves (China), national parks (Japan), wildlife reserves (Russian Federation), wetland reserves and ecosystem reserves (Republic of Korea), and habitat reserves (DPRK)
- **Inconsistency in MPA identification:** Statistics about the number of MPAs in the region vary among different countries, international organizations, and research organizations
- **Different institutional settings of management:** Administering bodies of MPAs include different ministries and entities that operate at various levels of local and national governments
- **Deficiencies in national-level MPA networks:** Attempts to create national-level MPA networks are hindered by the borderless nature of the marine environment
- **Limited international cooperation:** Despite the international monitoring efforts, North-East Asia lacks a comprehensive approach encompassing the entire region

MPA's Networks



- Reinforce effectiveness of protection management*
- Promote network evaluation tool's*
- Ensure a better management of threats to MPAs*
- Enhance International recognition*

- Different terminologies used*
- Different institutional setting of management*
- Limited international cooperation*

The need for a formal management standard for MPAs, a list of requirements, specifications, guidelines or characteristics that can be used consistently to ensure that the MPA is managed according to its vision.

The Ecosystem-Based Management System (EBMS)

The importance of Ecosystem-Based Management for MPAs

Setting the scene of management

principle 6

Using a system approach to management (enhancing participation, achieving a common view on societal choices)

principle 1

Need for adaptive management (targeted long-term visions with operational short ones)

principle 8

Advocacy for the use of the ecosystem services jargon

principle 5

Working with decision-making procedures in a decentralized way

principle 2-4

Developing an environmental accounting framework

principle 3-11

Contemplating all scaling effects

principle 7-9

Considering humans as part of the global ecosystems (but having clear the site/network vision and involving all sectors of society)

principle 10-12

The Ecosystem-Based Management System (EBMS)

The EBMS is an intended standard operational procedure

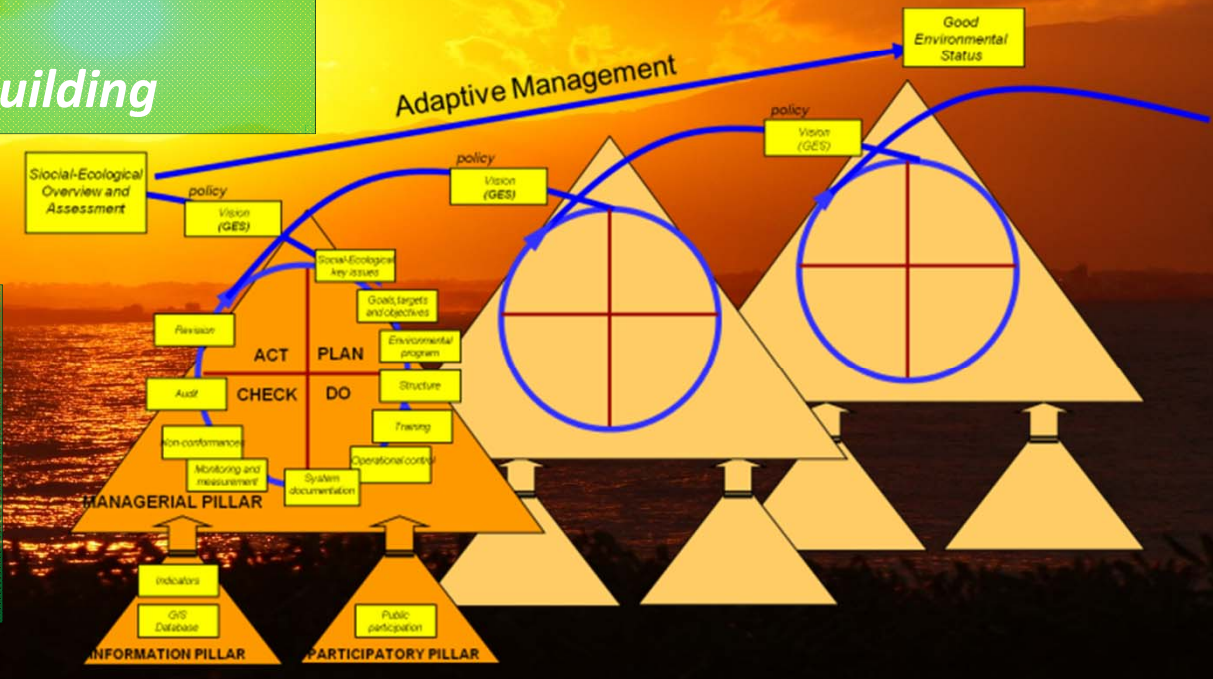
Quality assurance, adaptive management tool
Runs under Quality and Risk management schemes
Normalizing a common set of instruments
Introducing a common language
Intended for real practice and capacity building

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Sardà, R., T. O'Higgins, R. Cormier, A. Diedrich, and J. Tintore 2014. A proposed ecosystem-based management system for marine waters: linking the theory of environmental policy to the practice of environmental management. *Ecology and Society* 19(4):51. <http://dx.doi.org/10.5751/ES-07055-190451>

Research, part of a Special Feature on *Systems Science for Managing Europe's Seas*

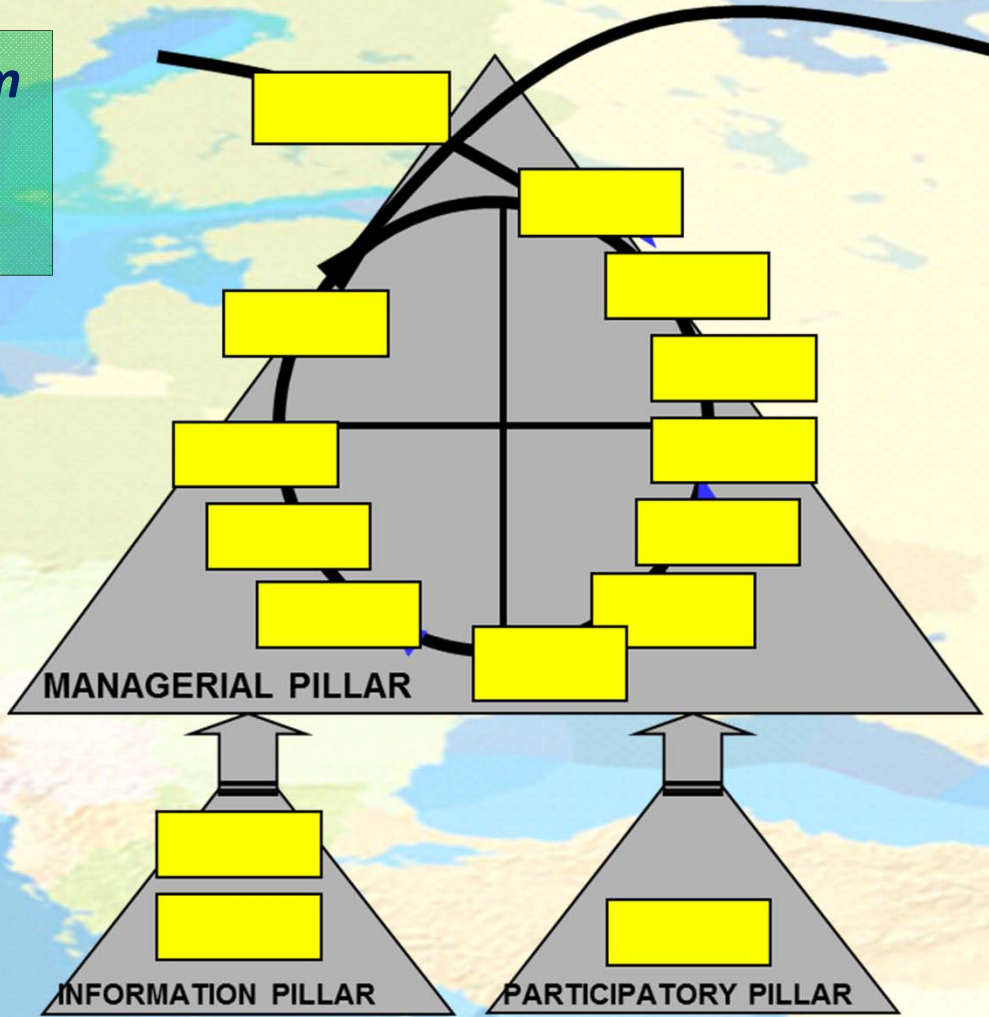
A proposed ecosystem-based management system for marine waters: linking the theory of environmental policy to the practice of environmental management

Rafael Sardà¹, Tim O'Higgins², Roland Cormier³, Amy Diedrich⁴ and Joaquín Tintore^{5,6}



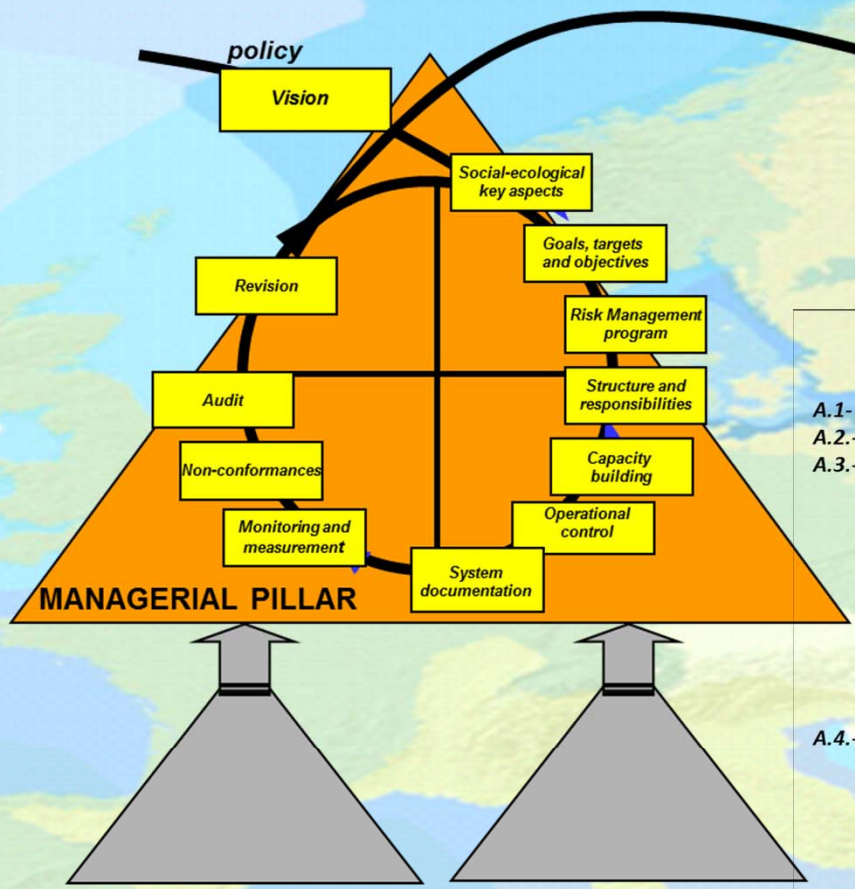
The Ecosystem-Based Management System

The EBMS is a three pillar structure. The system as a whole and its different pieces work to use the EA principles.



Combined, these three pillars can facilitate a wider use of sustainable development principles such as integration, adaptability, transparency or participation inside a quality assurance mechanism.

The Ecosystem-Based Management System



The **Managerial pillar** is the engine of the EBMS. It retains the format of an EMS-ISO standard. It is based on the ISO 14001 structure in which the planning and implementation phases works with the newly ISO 31010 on Risk Management.

EBMS Managerial Pillar	
A.1- General Structure.	
A.2.- Vision (Good Environmental Status)*.	
A.3.- Planning.	
A.3.1.- National and international requirements*.	
A.3.2.- Social-Ecological key aspects*.	
A.3.3.- Risk Management Plan*.	
A.3.4.- Risk Management programs*.	Risk Assessment
- collaborative agreements,	
- concerted actions,	
- best management practices,	
- marine protected areas,	
- regulatory policy alignment,...	
A.4.- Implementation and Operation.	
A.4.1.- Structure and Responsibilities.	
A.4.2.- Capacity building*.	
A.4.3.- Communication.	
A.4.4.- EBMS Documentation.	
A.4.5.- EBMS Operational Control.	
A.4.6.- Vulnerability assessment and response.	
A.5.- Checking and Corrective Measures.	
A.5.1.- Monitoring.	
A.5.2.- Unplanned events and conflict resolution*.	
A.5.3.- EBMS Records.	
A.5.4.- EBMS Audits.	Audit
A.6.- Management Review (updating the vision).	

Risk Assessment

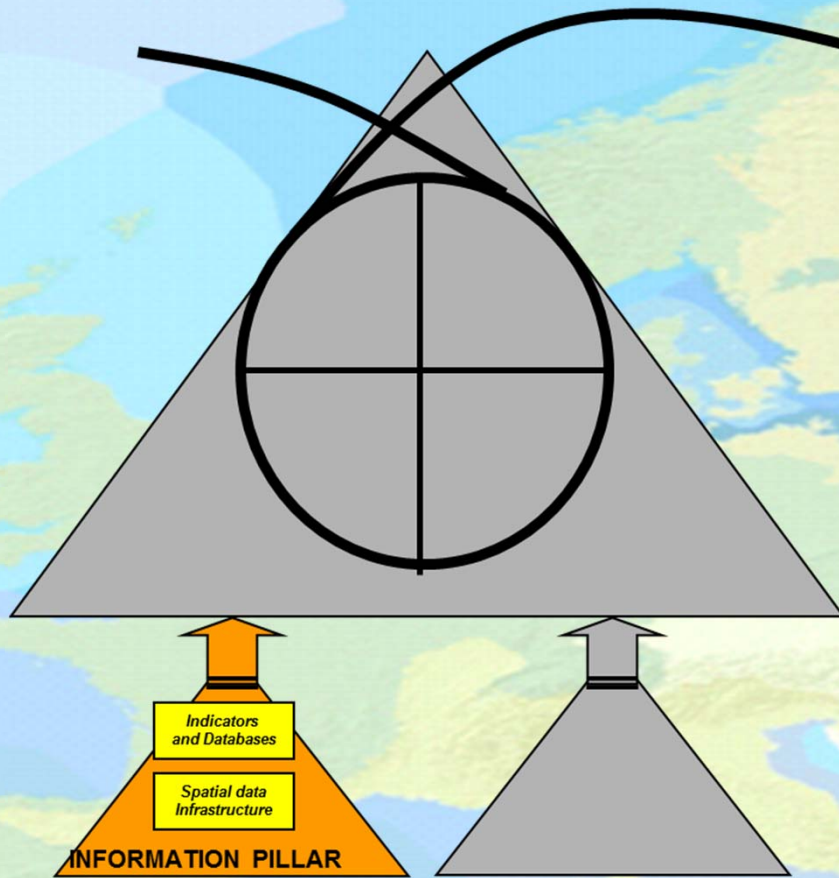
Risk Treatment

Audit

Cormier, R. Kannen, A., Elliott, M. et al., ICES Cooperative Research Report 317, (2013).

<http://www.msfd.eu>: KnowSeas Deliverable 6.1

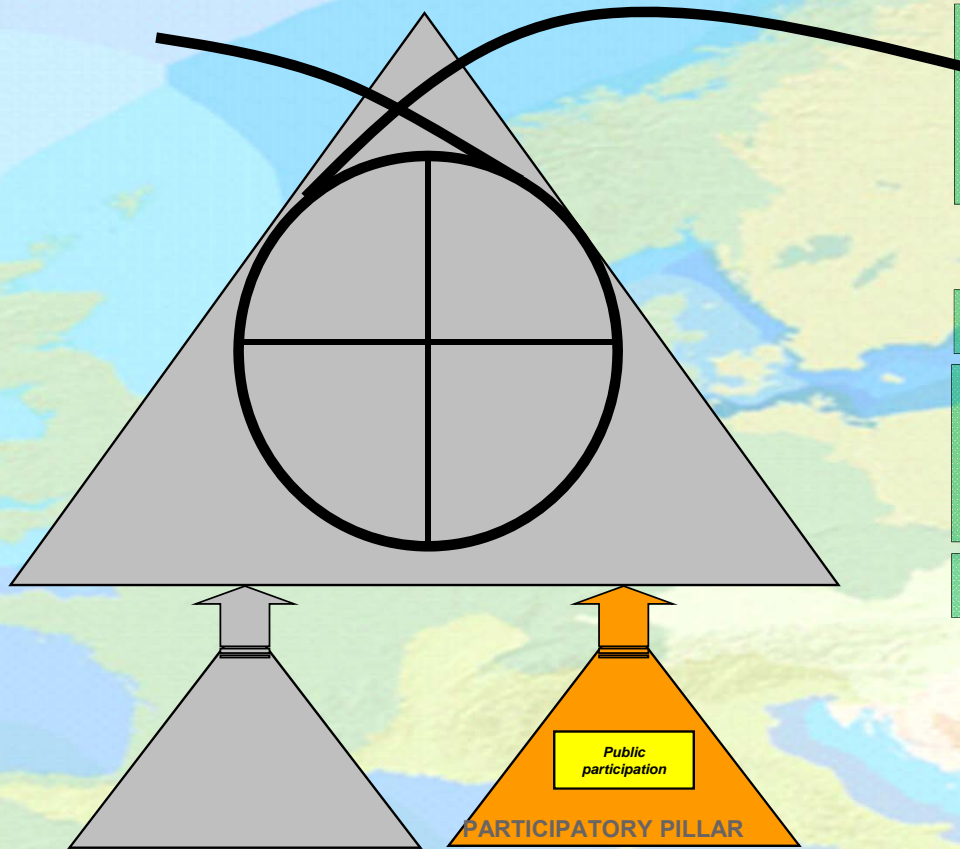
The Ecosystem-Based Management System



The Information pillar must provide the managerial pillar with user-friendly tools to facilitate the flow of information into the decision making process and implementation. An Spatial Data Infrastructure (SDI) following standard procedures and an indicator platform that follows the Driver-Pressure-State-Welfare-Response (DPSWR) are its basic elements.

Cinnerella, S., March, S., O'Higgins, T. et al.,
International Journal of Spatial Data Infrastructures Research,
7: 323-352, (2012).

The Ecosystem-Based Management System



The **Participatory pillar** is aimed to enhance communication with stakeholders and build public capacity to participate.

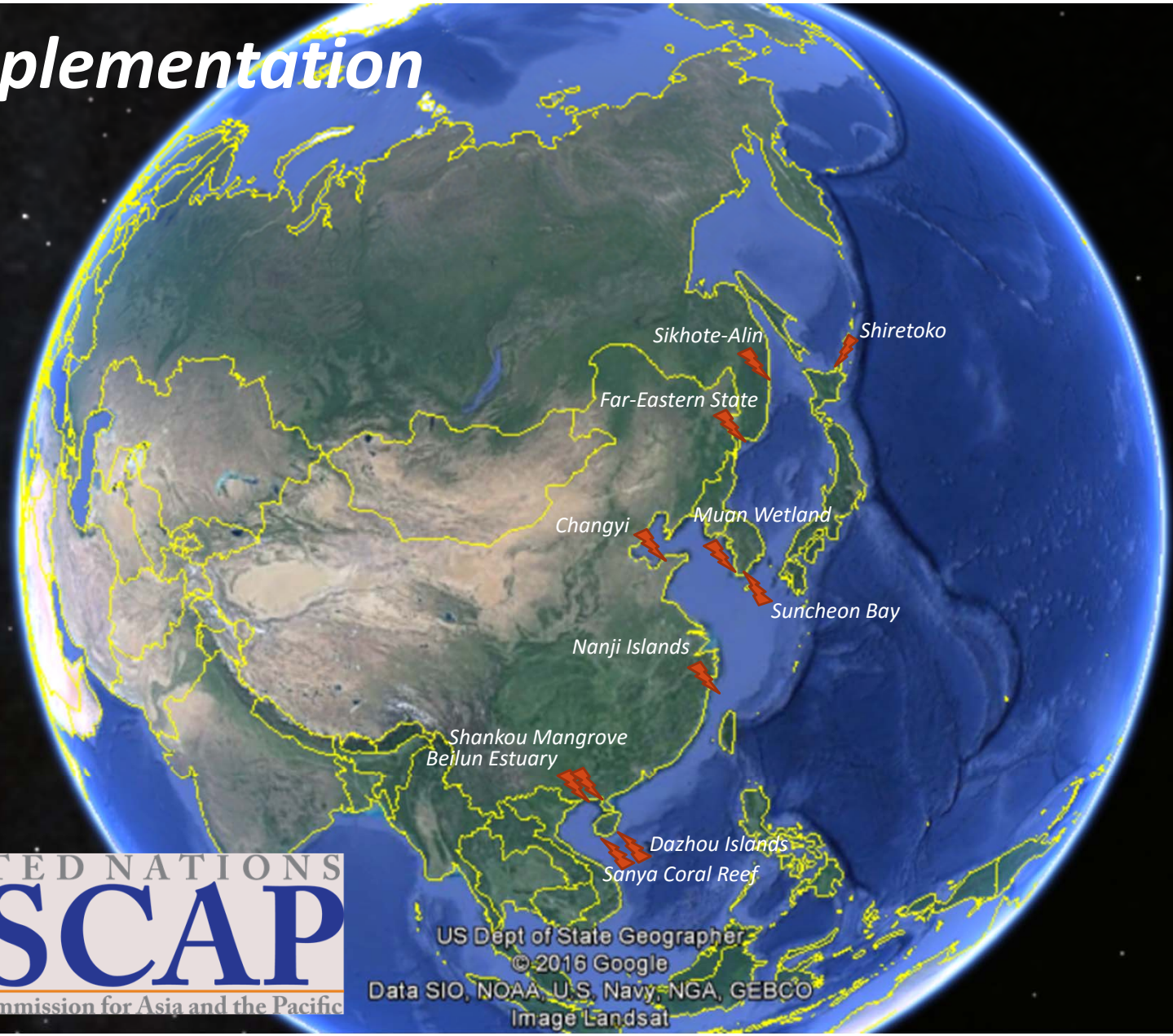
- **Facilitation of Stakeholder identification**

- **Facilitation of effective public participation and conflict resolution.**

*Lozoya, J.P., Sardá, R. & J.A. Jimenez, (2014).
Land Use Policy, 38: 397-414.*

- **Improving Capacity building and Training.**

EBMS implementation



US Dept of State Geographer
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Image Landsat

Google earth

EBMS implementation

***Incorporates all Malawi principles in the management
Introduce a common language for management
It is easily scalable
Facilitate institutional coordination and governance
It is a quality assurance vision-oriented tool***



US Dept of State Geographer
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Google earth



EBMS Key aspects

It follows a **vision-driven process**, a societal vision needs to be developed prior to use the framework.



**Initial
Assessment
Report**

Adaptive Management

Vision

EBMS Key aspects

Conservation of ecosystem structure and functioning to **maintain ecosystem services** is a priority target of the EBMS.

Offers new opportunities but requires:

- ✓ *Better understanding of how marine social-ecological systems operate*
- ✓ *How they generate goods and services*
- ✓ *How well these benefits are captured*
- ✓ *How human degradation of the systems affect human welfare and generate costs*
- ✓ *And the complex social relations and value systems underpinning its governance systems*

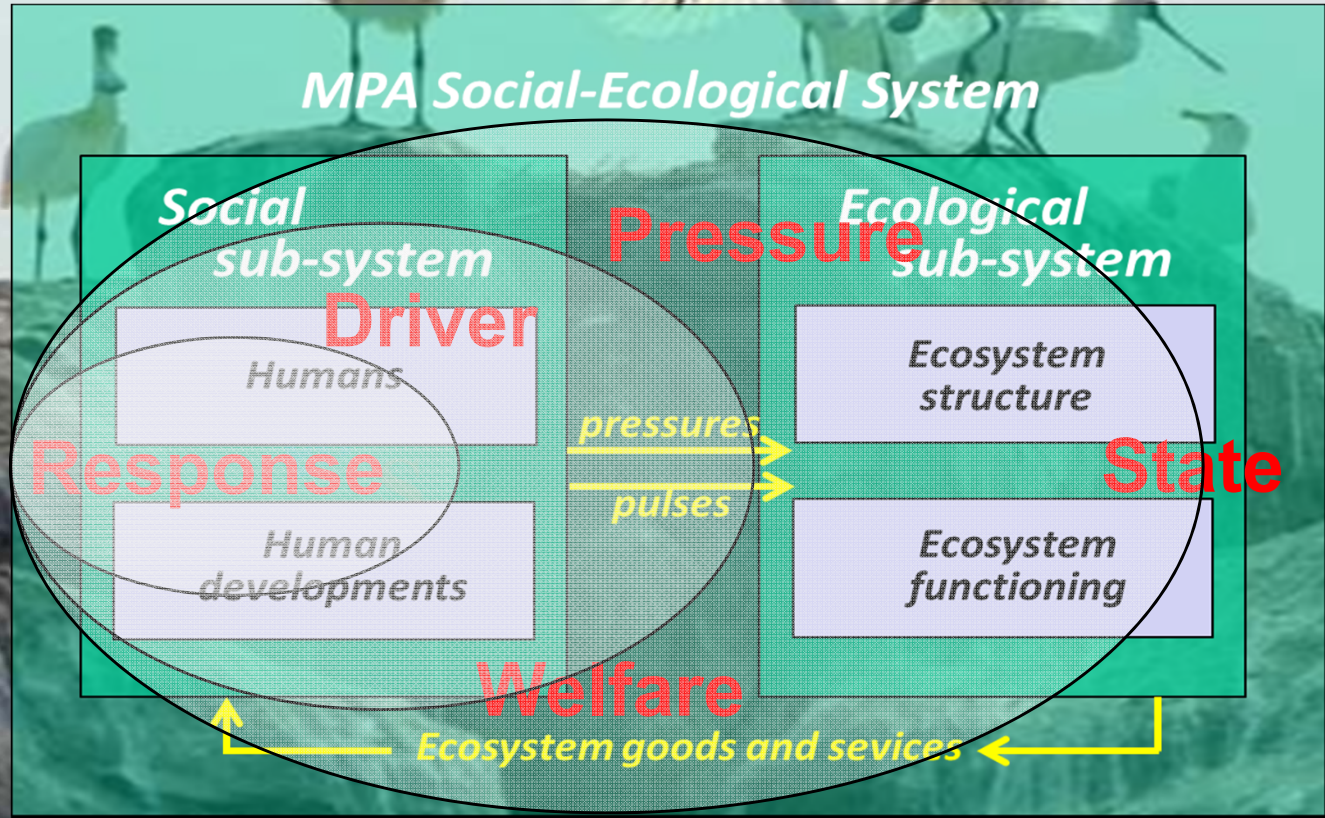
EBMS Key aspects

*The system prioritizes activities, inside policy cycles, intended to reach and/or maintain the desired vision using **risk management** tools.*

A decision making risk management-based tool help MPA managers to determine, based on trade-off analysis and the MPA vision, which projects and/or activities should be carried out before others.

EBMS Key aspects

Information tools follows a Driver-Pressure-State-Welfare-Response. (DPSWR) accounting framework.



EBMS Key aspects

Participatory tools ensuring stakeholders active involvement.

Normally, MPAs are established through consultation processes; national planning forums, expert panels or other type of approaches to come up with a list of potential areas for protection that will require governmental approval. Scientific and preparatory work is needed to inspire governments to conserve and restore the richness of marine life and habitat.

Once the MPA has been designated, in order to implement a well-structured functioning of the area collaborative approaches are appreciated . The framework will set the scene, will frame the institutional context, will develop ecosystem services scoping and will articulate values that guide decision-making.

Concluding Remarks

Conservation of ecosystem structure and functions to maintain ecosystem services is a priority target of the Ecosystem Approach (EA) ... as well as in the EBMS proposed tool.

Both NEAMPAN and MEDPAN have different institutional setting of management and ask for international cooperation and recognition

A formal standardized management tools as the EBMS would allow authorities to manage, in an integrated way, the different MPAs functions of and the ecosystem services they provide .

Standardization

The EBMS introduces a common language, a common set of procedures that can be useful to facilitate implementation of the EA principles and knowledge sharing.

Commonality

The EBMS is scalable, For MPA's this facilitates the introduction of conservation objectives and measures using nested approaches. The structure can be adopted for any program of measures from initiatives at the regional level to provincial or local levels.

Scalability



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Thanks
for your
attention