



# Ecosystem-Based Management and Integrated Coastal Management: Divergence and Complementarity

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# Outline

- Origins of the ICM and EBM approaches
- Obstacles to EBM implementation
- ICM implementation in East Asia
- Current status of ICM and EBM in the East Asian region
- Combining local ICM with regional EBM
- Conclusions

# Background

- In recent years ICM has been actively promoted in East Asian region
- New initiatives are advocating more conservation-based management
- Some confusion over the relationship between the two approaches and their application at different spatial scales

# Origins of ICM

- Local communities in the USA tried to solve user conflicts in open-access coastal areas
- High value of coastal space requires a long-term perspective, which includes social, economic and environmental concerns
- Sustainable development requires an ecocentric approach, because human demands invariably exceed ecosystem capacity

# Origins of EBM

- Conservation ethic can be used to establish priorities between competing uses
- Managing for ecosystem sustainability requires understanding of large-scale processes within ecologically-defined spaces
- Internationally-accepted framework requires regional TDAs, national SAPs and local implementation

# Obstacles to EBM implementation

- Lack of long-term systematic data
- Lack of scientific capacity, including human resources and funding
- Can be difficult to communicate the implications of scientific research to policymakers
- Opposition from economic interests
- Uncertainty about how conservation and resource use should be balanced in practice

# ICM implementation in East Asia

- Main emphasis has been on sectoral and governmental integration
- Successful programmes have usually focused on small geographic scales
- Scientific information has not always been integrated effectively
- Environmental improvement programmes have often struggled to secure funding

# ICM implementation in Xiamen, China

- 1st cycle: new legislation, SAPs, pollution reduction
- 2nd cycle: sea use zoning, habitat restoration
- 3<sup>rd</sup> cycle: transboundary issues including upstream pollution
- Effective involvement of scientific expert group
- Demonstration site for 10 more ICM sites in China

# Difficulties with ICM implementation

- Other East Asian initiatives have not successfully advanced from policy making to implementation
- Obstacles include: high population density, low socioeconomic level, inadequate technical and management capacity, reliance on external funding and assistance
- Long-term sustainability requires observable benefits, stable institutions, a legal framework and effective enforcement

# ICM and EBM in East Asia

- The East Asian region includes six LMEs: Yellow Sea, East China Sea, South China Sea, Sulu-Celebes Sea, Gulf of Thailand and Indonesian Sea LMEs
- Putrajaya Declaration and SDS-SEA provides a clear commitment to greater regional cooperation
- Several countries have developed national coastal policies and made implementation of the SDS-SEA part of their coastal and marine agenda
- The Philippines has made ICM a national policy while Vietnam has established a government division for integrated coastal zone and river basin management

# ICM and EBM in East Asia

- South China Sea project: seven participating countries, improved fisheries management, protecting and restoring coral reefs, mangroves, sea grasses and wetlands
- Included the Mekong Basin project, biodiversity protection efforts, regional TDA and national SAPs
- TDA activities have also been conducted for the Yellow Sea LME by PR China and Republic of Korea governments.

# ICM and EBM in East Asia

- China's CBSP is a national SAP for river-basin and coastal management based on EBM principles
- Over US\$5 billion of environmental infrastructure to reduce nutrient loading
- Local governments of three provinces, two cities and local counties implement CBSP measures, with assistance from central government agencies
- Has led to raised environmental awareness, changes in behavior, and reduced pollution discharges

# Integrating local ICM with regional EBM

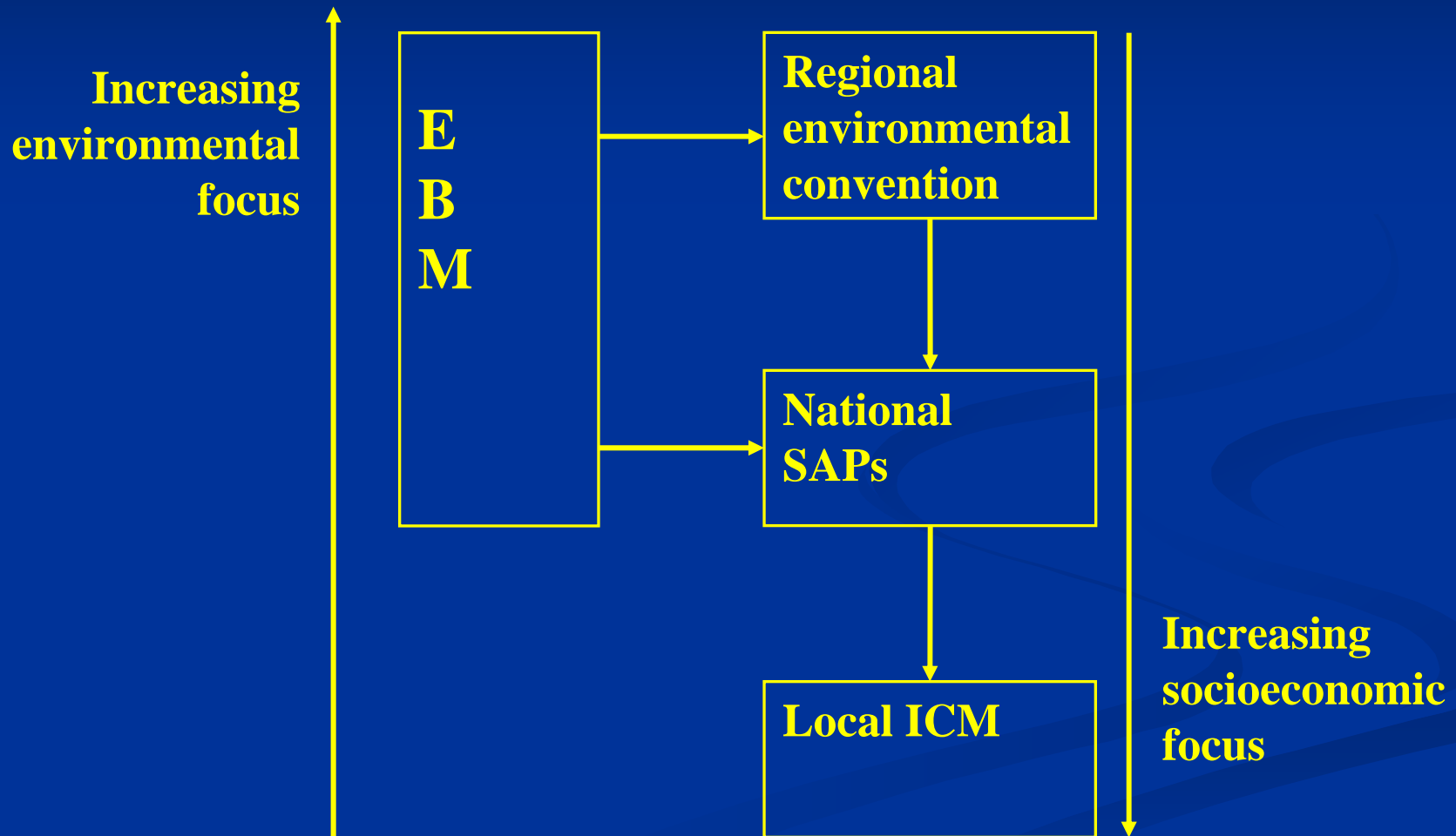
- Local management will prioritise development when socioeconomic level is low and benefits of environmental protection are external
- Natural conflict between local participatory resource management, and top-down efforts to ensure biodiversity conservation
- This causes some divergence between local ICM priorities and EBM principles

<b>EBM</b>	<b>ICM</b>
More emphasis on natural sciences	More emphasis on social sciences
<b>Operational methodology developing</b>	<b>Established management framework</b>
Conserves ecosystem structure and function, including future human uses	Accommodates multiple competing uses to achieve sustainable development
<b>Ecosystem units correspond to management challenges</b>	<b>Geographic limits defined by governing bodies</b>
Management at a variety of spatial scales, decentralised to lowest appropriate level	Local management (e.g., less than 5 municipalities), legal and institutional arrangements at appropriate levels
<b>Considers processes that occur over multiple timescales</b>	<b>Aims to achieve goals within policy cycle, typically 5-10 years</b>
MPAs networks, including fully and partially protected areas	Functional zoning scheme determines dominant and compatible uses

# Integrating local ICM with regional EBM

- Without an SAP provided by central governments, local ICM programs are unlikely to pay attention to long-term consequences of coastal ecosystem change
- SAPs should contain goals and targets for local ICM initiatives to implement, within the context of local needs and conditions and an awareness of what is politically and socially feasible
- At national and regional levels, it is more likely that the scientific and technical capacity will be available to make use of EBM tools, and governments and international conventions are more likely to take the wider public interest into account

# Combining EBM and ICM at different coastal management scales



# Conclusions

- EBM is a more ambitious paradigm than ICM but difficult to translate in practical management initiatives, especially at local levels
- Local management in developing countries lack of will to prioritise ecological sustainability over socio-economic objectives
- An ecocentric approach at larger spatial scales can be translated into practical outcomes if improved guidance is provided to local ICM by national SAPs
- National governments should incorporate specific ecosystem-based goals and targets into national SAPs, to provide a basis for pragmatic policy implementation by local ICM

# Conclusions



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