

Implementing Marine Ecosystem Management: Framework and Practice

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Introduction

Ecosystem-Based Management (EBM) was proposed as a new concept and an effective tool for marine and coastal management. How to set up EBM framework and implement EBM in marine and coastal area needs to be resolved for the practice of EBM.

Framework

A framework and methodologies of Marine Ecosystem Management (MEM) were proposed according to the framework and experience on terrestrial ecosystem management and the characteristics of marine ecosystem using multidisciplinary approaches to promote marine and coastal management towards sustainability. The framework includes four parts, preliminary, technical support system, management proposal, and public participation (Fig. 1).

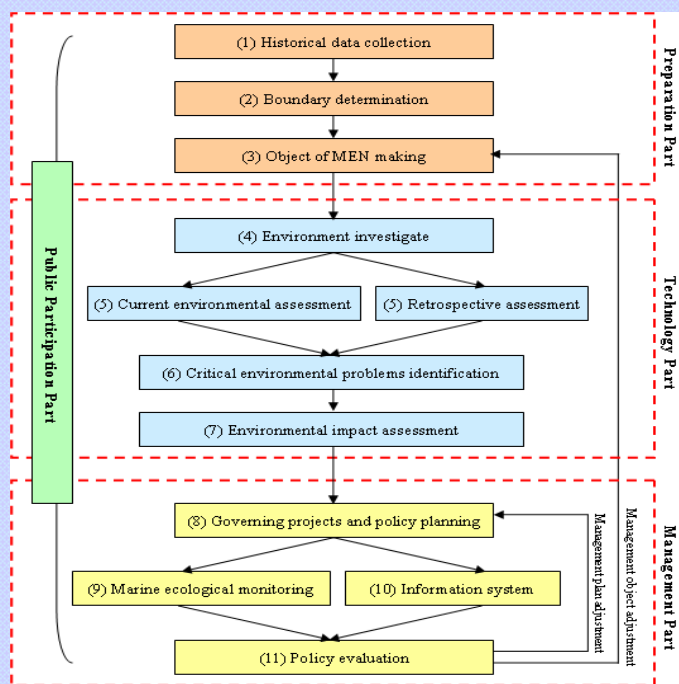


Fig.1 Framework of marine ecosystem management

Methodology

The Methodologies (Fig. 1) include: data collection, the preliminary assessment of study area, the determination of marine ecosystem boundary and management objectives in preliminary stage; the current, retrospective and impact assessment of marine ecosystem health, ecological security and cumulative effects of human activities in technical support system including the areas of marine hydrological dynamics, environmental quality, marine ecosystem, coastal socio-economic development and the evaluation of marine resources and ecosystem service function; management proposal based on Resource-Oriented Principle including political and management proposal, marine monitoring planning, management information system, administration and policy evaluation, and; public participation throughout whole MEM processes.

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Case Study

The case study in Strategic Environmental Assessment of Reclamation Planning of Xiamen Bay, China, was done for the practice and implementing MEM.

The research area, Xiamen Bay and its adjacent area, can be subdivided into eight sea areas. There were 47 reclamation areas (total area 73.59km²) proposed, and divided to ten project proposals in the case. Project proposals from No.1 to No. 9 were showed in Fig.2.

Using the Framework and Methodologies of MEM proposed, the results showed that 17 reclamation areas are feasible, 17 reclamation areas need farther consideration, and 13 reclamation areas are infeasible (Fig.3). The management proposal was set up by the results.

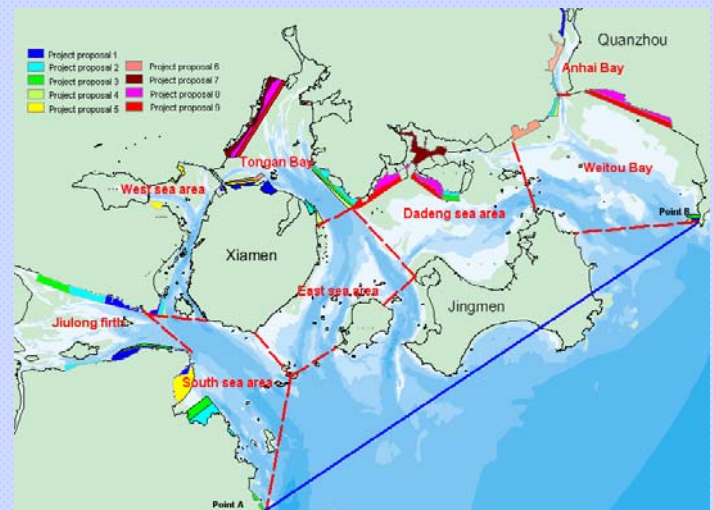


Fig.2 Study Area And Coastal Reclamation Requirements



Fig.3 Design Proposals For The Results of Assessment

Conclusion

EBM could be implemented in coastal area by using MEM Framework .

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