

Marine Spatial Planning: An Effective Tool for Ocean Management

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The number of people who use sea areas is growing daily. It creates the possibility of user-user conflicts, conflicts between different users or stakeholders, user-environment conflicts, and conflicts between maritime uses and preserving the marine environment. All of these situations pose dangers to the marine environment. That is why Marine Spatial Planning (MSP) is a tool necessary for maritime resource efficiency. In the context of escalating economic activity in sea basins, MSP offers a framework for managing human sea usage. To address the issues caused by the stress exposure of marine protected or sensitive areas due to anthropogenic activity and/or natural processes, national authorities began to use spatial planning of the marine environment in the early 1980s as an environmental conservation management

process. Since it was the first country to implement MSP at the Great Barrier Reef Marine Park management system in 1981, Australia is regarded as a pioneer in this field. In the 1990s and 2000s, the idea of MSP was spread all over the world. Several nations have passed laws and established institutional frameworks to support the creation and execution of spatial plans in the marine waters under their control. Marine Functional Zoning (MFZ) emerged in Xiamen, as it did throughout China, due to the necessity to organize maritime operations, whose rapid and frequently uncontrolled expansion was impeding societal advancement and seriously harming the coastal and marine habitats. Since its creation, government organizations and marine users have supported the MFZ with few exceptions, despite the significant

changes it has brought about for many of the latter. Although the nested system of government and the MFZ ensure a high level of vertical collaboration and adequate coherence between national, provincial, and city MFZ plans, the level of horizontal cooperation at the regional and city levels has been hampered by a tradition of competition for development opportunities.

MSP promotes integrated, consistent, forward-looking policy and practice decision-making throughout regional space. The MSP made it possible to adopt a strategic approach that increased consistency and trust in decision-making and allowed for creating a "spatial vision" for a specific area. Growing interest has been shown in the potential of spatial planning to support the achievement of sustainable development goals in the marine environment and to control the competing and frequently at-odds demands on the sea. The process of MSP brings together a variety of ocean users, such as those involved in energy, industry, government, conservation, and recreation, to discuss and decide how to manage marine resources sustainably. MSP typically employs maps to build a complete image of a maritime area, highlighting the natural resources and habitats and where and how an ocean area is being utilized. The strategy, which aims to streamline sectorial decision-making frameworks and provide more consistency and integration of industry interests in sea use planning and management decisions, is fundamentally concerned with the administration of ongoing activities. The competition for marine space for aquaculture, renewable energy technology, and other applications has brought attention to the need for more cogent water management. MSP works across sectors and boundaries to ensure effective, safe, and sustainable human operations at sea. The phenomenon whereby geographic patterns are distinguished by the

layout and shape of boundaries drawn for administrative or measuring purposes is known as a boundary problem. Geographical analysis, or locational analysis, is a sort of spatial analysis that aims to mathematically and geometrically describe patterns of human behavior and their spatial expression. Techniques are used in spatial analysis to manipulate, extract, find, and examine geographic data. GIS analysts use geoprocessing technologies and data analysis to investigate the connections between map features. An overview defining the objective and intended use is one of the components, along with details on the quality, lineage, spatial accuracy, attribute correctness, logical consistency, and completeness. Spatial data represent information concerning the precise location and geometry of geometric objects.

There are many MSP objectives, but a few of them are: firstly, support the work of competent authorities and inter-ministerial bodies in the establishment and adoption of marine spatial planning; secondly, where appropriate, support the development of cross-border MSP cooperation with bordering Member States and third countries to ensure that marine spatial planning is coherent and coordinated across marine regions concerned; and thirdly, using the best data and information currently available.

The potential advantages of marine spatial planning are:

- Reduce tensions between industries and foster collaboration between various pursuits
- By establishing stability, transparency, and clearer standards, you can encourage investment and construct energy grids, maritime lanes, pipelines, submarine cables, and other projects; governments

should cooperate more frequently across borders. Protected area networks should also be developed in a coordinated manner

- By early impact detection and diverse space usage opportunities, you can protect the environment
- Provide a method for managing multiple resources uses, where possible and compatible, within the same sea area
- Giving resource allocation decisions a spatial context would help to integrate the interests of various stakeholders and enable regional strategic conflict resolution
- By assisting in reducing the complexity and duplication of effort inherent in sectoral management, you may increase efficiency and boost confidence in regulatory processes and decision-making
- Instead of using the existing reactive and ad hoc system of regulation, allow planning to determine the kinds of plans and policies that would be suitable for a certain maritime area
- Through a Strategic Environmental Assessment (SEA) of all uses at the ecosystem level, information gathering, processing, and distribution will be improved, and understanding of the cumulative and combined consequences of projects and policies will be strengthened
- Improve decision-making transparency and consistency while increasing stakeholder participation
- The MSP process is now in progress in Bangladesh. The following goals

for the Bangladesh MSP are set forth:

- A framework for consistent, transparent, sustainable, and evidence-based decision-making
- Sustainable development and use of marine and coastal space and resources Preservation, protection, and improvement of the environment; conservation and recovery of ecosystems; resilience of climate change impacts
- An integrated framework for management (notably acting as a guide but not as a substitute for single sector planning); and sustainable development and use of inland water resources.

As a maritime nation, there's a large prospect of a flourishing ocean economy and exploring multiple resources avoiding conflicts through planned and sustainable ocean use. MSP enables coordination between different authorities responsible for other sectors and issues to achieve an inclusive, superior, common, unified, and long-term ocean economy. In Bangladesh, about 18.2% of the population depends on the country's maritime economy. So, without establishing standards and guidelines, development and investments to boost this economy can yield short-term gains but will not ensure long-term benefits. Therefore, what is needed now is to implement MSP for sustainable ocean governance.

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