Leveraging Ocean Accounts for Effective Marine Spatial Planning

Key messages

- Ocean accounts integrate diverse datasets, breaking down data silos and fostering collaboration across government agencies and stakeholders involved in marine spatial planning.
- The structured data on ocean beneficiaries, technology, and governance within ocean accounts help identify stakeholder groups, assess the distribution of benefits and burdens, and design inclusive and equitable marine spatial planning processes.
- Ocean accounting data allows planners to assess trade-offs, identify compatibilities between uses, and inform spatial design measures that reduce conflicts while safeguarding marine ecosystems.
- The regular updating of ocean accounts enables continuous monitoring and adaptive management, ensuring that MSP governance remains flexible and responsive to changing conditions, allowing for proactive management and anticipation of future challenges.
- Ocean accounts can facilitate cross-border comparisons and promote collaboration by providing a standardised and consistent framework for mapping policies, legislation, and stakeholder interests across different countries, fostering a cooperative approach to marine management.
- By quantifying the economic contributions, environmental impacts, and social implications of various marine activities, ocean accounts assist in balance competing priorities and interests.

Marine Spatial Planning

Coastal and marine areas are vital to the livelihoods and prosperity of coastal economies, supporting a diverse array of activities ranging from shipping and fishing to offshore energy production and tourism. However, as these activities continue to grow in both number and intensity, conflicts over marine space and resources have become increasingly prevalent. These conflicts can arise between different sectors vying for the same areas (user-user conflicts) or through the degradation of shared marine ecosystems (user-environment conflicts). Effective management strategies are crucial to resolve these conflicts and ensure the sustainable utilisation of ocean resources.

Marine Spatial Planning (MSP) has emerged as a key approach to allocating human activities within marine areas through integrated, participatory processes designed to reconcile the diverse values and priorities of stakeholders. MSP provides a comprehensive and strategic framework for analysing and allocating space for various marine uses, with the aim of minimising conflicts between activities while potentially maximising and ensuring the continued supply of benefits from marine ecosystems[1].

MSP typically addresses multiple sectors, their interrelationships, and cumulative impacts, utilising spatial and temporal measures to guide the appropriate uses of marine areas and resources. These measures may include designating specific areas for particular uses or prohibiting certain activities, as well as implementing place-based or general conditions on resource use. When informed by sustainable development and inclusivity principles, MSP is an inclusive process that seeks to address the needs of society as a whole within the limits of the environment[1].

By providing a coherent framework for managing the increasing competition for marine space and resources, MSP plays a vital role in minimising user conflicts, mitigating environmental impacts, and safeguarding the productivity and resilience of marine ecosystems for current and future generations.

Implementing effective MSP requires a cross-sectoral and transdisciplinary approach that integrates environmental, social, and economic considerations. It necessitates robust stakeholder engagement, sound scientific data, and adaptive governance mechanisms to navigate the complex challenges of sustainable marine resource management in an era of rapid environmental change.

Ocean Accounting

Ocean accounts are integrated, standardised records of data that provide a comprehensive view of a country's ocean resources, economy, and governance. They compile regularly updated information on environmental conditions (like the extent and health of mangroves), economic activities (such as fish sales), and social conditions (like employment in coastal communities).

Ocean accounts follow a structure similar to national accounts used by statistical offices and finance ministries, ensuring compatibility with established frameworks like the System of National Accounts and the System of Environmental-Economic Accounting. This compatibility enables countries to go "beyond GDP," measuring not just economic output but also the value of ecosystem services, the condition of natural assets, and the impact of human activities on the ocean environment.

Key components of ocean accounts include macro-economic data, environmental-economic data (assets, flows, wastes, taxes), ecosystem data (extent, condition, services), and structured data on ocean beneficiaries, technology, and governance. By integrating these diverse datasets, ocean accounts provide decision-makers with insights to inform policies, assess trade-offs, monitor progress towards sustainable development goals, and attract investments in sustainable ocean development.

Fundamentally, ocean accounts provide a unified, data-driven foundation for holistic ocean management, breaking down data silos and fostering collaboration across government agencies and stakeholders.

Using Ocean Accounting to Inform Marine Spatial Planning

Ocean accounting offers a robust framework for capturing the economic, environmental, and social data related to marine and coastal areas. By systematically compiling and analysing these diverse datasets, ocean accounting provides crucial insights that are vital for effective Marine Spatial Planning. This approach aids in monitoring key indicators related to ecosystem health, patterns of human activity, resource use conflicts, and cumulative impacts across sectors. Such comprehensive information supports informed decision-making within MSP processes and the development of spatial plans that balance ecological conservation with sustainable economic development.

Economic

Ocean accounting can quantify the economic contributions of coastal and marine activities, enabling MSP practitioners to understand both the direct and indirect economic benefits derived from marine areas and their linkages to broader economic systems. This facilitates more informed decisions aimed at promoting sustainable economic development within MSP. Key economic data include:

- Employment levels in marine industries such as fisheries, aquaculture, and tourism, disaggregated by geographic area.
- Revenue from marine sectors expressed as a percentage of GDP.

Environmental

By integrating detailed environmental data, ocean accounting supports the assessment of the health and sustainability of marine ecosystems within the context of MSP. Maintaining these habitats is essential for preserving ecosystem services that support marine planning objectives, including biodiversity conservation, coastal protection, and sustainable resource use. Key environmental data include:

- Information related to pollution, such as the total volume of wastewater discharged without treatment.
- Data on the initial conditions of marine and coastal assets to inform progress on restoration or conservation efforts such as the mean age of mangroves, coral length, and other indicators of ecosystem health.

Social

Tracking social indicators related to communities dependent on marine resources, such as employment rates, income levels, and demographic changes, ocean accounting provides a comprehensive view that helps identify vulnerable populations and develop targeted

interventions within MSP processes. Key social data include:

- Coastal risks and vulnerabilities such as the amount of infrastructure exposed to storms and sea-level rise
- The documentation of cultural heritage sites
- Measuring equity access to natural resources across different social groups

Policy considerations

Ocean accounting provides a robust framework for collecting the data and insights necessary to inform these policy decisions. In addressing the complex challenges inherent in marine spatial planning and management, several key policy questions emerge. The following sections explore these critical questions and illustrate how ocean accounting can support the prevention and management of conflicts between marine activities, enhance cross-border cooperation for marine planning and environmental protection, and design adaptive MSP governance structures capable of addressing current problems and future changes.

How can conflicts between different marine activities be prevented and managed?

Conflicts between different marine activities can be prevented and managed by leveraging comprehensive data from ocean accounts. These accounts provide detailed insights into the distribution and condition of marine resources, helping to identify areas where activities overlap, and potential conflicts may arise.

Governance accounts play a crucial role by mapping out the layers of governance within ocean areas, including policies, legislation, and current management actions. This helps streamline the regulatory framework and clarify responsibilities among stakeholders, ensuring that everyone is aligned and informed about their roles. By mapping out these governance layers, policymakers can better understand the existing regulatory landscape, identify gaps or overlaps, and enhance coordination among various regulatory bodies.

Ocean accounts support the alignment of policy targets through ecosystem services, balancing the need for economic development and environmental preservation. By quantifying the economic, environmental, and social values of different marine activities, ocean accounts ensure that policies promote sustainable development. For instance, by valuing ecosystem services such as the carbon sequestration by mangroves, policymakers can justify the protection of these habitats even when there is pressure for coastal development.

Policymakers can develop strategic zoning plans that minimise conflicts by designating specific areas for particular uses and implementing management measures that balance economic, social, and environmental interests. For example, spatial planning can allocate distinct zones for activities such as fishing, shipping, and tourism, reducing the chances of overlap and competition. These zoning plans are informed by detailed data from ocean accounts, which highlight areas of high ecological value that need protection, as well as areas suitable for development.

Continuous monitoring and updating of ocean accounts allow for adaptive management, ensuring that emerging conflicts can be addressed promptly. Regular updates provide the latest data on marine resource conditions and human activities, enabling policymakers to respond to new challenges and changing conditions. This ongoing assessment and adaptation enable proactive management of marine resources, anticipating future challenges, and making necessary adjustments to policies and plans. In this way, governance accounts and ocean accounting together provide a robust framework for managing and mitigating conflicts, promoting sustainable use of marine spaces, and ensuring the resilience of marine ecosystems.

What methods can improve cooperation across borders for better marine planning and environmental protection?

Improving cooperation across borders for marine planning and environmental protection can be achieved by using standardised, consistent, and coherent information from ocean accounts. These accounts offer a common baseline for comparing

policies, legislation, and stakeholder interests across countries, facilitating transparency and mutual understanding.

Ocean accounts enable countries to map relevant policies, legislation, and stakeholders, helping identify areas of synergy and potential conflicts. By providing a unified and comparable dataset, ocean accounts foster a shared understanding of marine resources and challenges, encouraging joint efforts to address common issues. This shared understanding can lead to the development of harmonised policies and collaborative strategies that are more effective than isolated national efforts.

Moreover, ocean accounts ensure vertical integration from local to national and regional levels, aligning efforts across jurisdictions. This alignment helps countries work together more effectively by ensuring that local actions contribute to regional and global marine management goals.

Highlighting ecosystem services, ocean accounts provide a common language for aligning policy targets and harmonising environmental protection efforts. This common language facilitates dialogue and negotiations between countries, promoting cooperative initiatives and joint management plans.

Regular updates to ocean accounts support continuous evaluation and adjustment of strategies, ensuring dynamic and responsive cooperation. This ongoing process enables countries to adapt to new challenges and opportunities, maintaining the effectiveness of their collaborative efforts over time.

How can MSP governance be designed to handle current problems and adapt to future changes?

MSP governance can be designed to handle current problems and adapt to future changes by incorporating detailed insights from ocean accounts. These accounts assist in cost-benefit analyses by providing social, environmental, and economic values, helping to evaluate the implications of different management scenarios.

By maintaining ocean accounts over time, policymakers can monitor the progress of plans towards pre-determined objectives and make necessary adjustments. This ongoing assessment ensures that governance structures remain flexible and responsive to changing conditions.

Ocean accounts provide data on the condition and distribution of marine resources, supporting the development of adaptive policies. This information allows for proactive management, anticipating future challenges and adapting strategies accordingly. Regular updates to ocean accounts ensure that MSP governance is based on the most current data, fostering a dynamic and resilient approach to marine management.

Additional Resources

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