Sustaining Coastal Livelihoods through Integrated Ocean Accounting

Key messages

- Ocean accounts provide a comprehensive framework for capturing the economic, environmental, and social value of marine and coastal ecosystems. By systematically compiling relevant data, ocean accounts measure the importance of ocean ecosystems and resources in sustaining the livelihoods of coastal communities.

- Ocean accounts illuminate the role of ocean ecosystems in economic development, food security, and coastal protection, enabling informed trade-offs to optimise benefits to coastal communities.

- Data on diverse marine industries guide strategies to diversify coastal economies, support varied income-generating activities, and build resilience against sector-specific shocks.

- Environmental data on habitats like mangroves, wetlands, and coral reefs support sustainable management of natural assets, enabling impact modelling of different policy scenarios.

- Social and economic data reveal which coastal communities depend most on marine resources, highlighting vulnerable populations and allowing targeted interventions.

- Social indicators on income, access constraints, and demographics enable the design of equitable policy interventions to ensure that vulnerable populations benefit from sustainable ocean management and economic opportunities.

Coastal Livelihoods

A significant portion of the world's population lives near the coast, with approximately one-third (2.75 billion) of people residing within 100 km of the coast[1]. Many coastal communities rely heavily on marine and coastal resources for their livelihoods. A livelihood is how people use their skills, abilities, and available resources to make a living and support themselves[2]. These resources can be human, social, natural, physical, or financial, and they are affected by the rights and opportunities each person has[3].

Coastal livelihoods tend to be dependent on aquatic resources, such as fishing (including processing and trading) and aquaculture or mariculture. They are however inherently flexible and dynamic, with individuals frequently engaging in multiple occupations that can shift in response to resource availability, financial conditions, personal factors such as age and health, and government policies[4,5]. The natural resource-based primary livelihood is often combined with other activities such as tourism, net making and repair, small-scale businesses or other artisanal activities[2,7].

Coastal communities face significant challenges, such as the unsustainable use of resources, prioritisation of large-scale industrial growth over small-scale local economies, and conflicts between sectors, as well as the marginalisation of communities in decision-making and policy-making[6]. Climate change poses existential threats through sea-level rise, increased frequency and intensity of storms, and ocean acidification, directly impacting coastal infrastructure, fisheries, and ecosystems. Environmental degradation, often exacerbated by unsustainable resource exploitation, further undermines the natural assets upon which many livelihoods depend.

Population pressure and declining environmental assets pose significant risks to coastal community livelihoods, food security, and rights. including access to resources, land tenure, and fishing rights[5]. Economic volatility, particularly in sectors like fishing and tourism, can lead to income instability and food insecurity. Social issues such as inadequate healthcare and limited education opportunities compound these vulnerabilities. These drivers often disproportionately affect poor and vulnerable communities, who are most reliant on these natural resources for their subsistence.

Addressing these challenges require interventions which integrate social, economic, and ecological considerations that tackle fundamental issues such as equity, power relations, access to resources, and the sustainability of resource use. Comprehensive approaches are needed to build resilience, diversify livelihoods, and ensure sustainable management of coastal and marine

resources while empowering communities to participate in decision-making processes that affect their future.

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 Policies for Resilient Coastal Livelihoods

Ocean accounting compiles essential data that helps policymakers understand the economic, environmental, and social impacts of their decisions on coastal communities. By evaluating the contributions of marine and coastal ecosystems, policymakers can develop targeted strategies to enhance the resilience and sustainability of coastal livelihoods. This includes identifying critical areas for conservation, optimising resource use, and ensuring equitable distribution of economic benefits. Through detailed assessments, ocean accounting supports the creation of policies that promote long-term economic stability and environmental health for coastal regions.

Economic

Ocean accounting quantifies the economic contributions of coastal and marine activities, allowing policymakers to understand both the direct and indirect economic benefits derived from coastal areas and their linkages to coastal communities. This facilitates more informed policy decisions aimed at improving livelihoods and ensuring sustainable economic stability. Key economic data include:

- Employment levels in coastal industries like fisheries, aquaculture and tourism. disaggregated by gender, income level, geographic area etc.
- Revenue from small-scale fisheries and other important industries as a percentage of GDP.

Environmental

By integrating detailed environmental data, ocean accounting supports assessment of the health and sustainability of marine ecosystems. Maintaining these habitats is essential for preserving ecosystem services that support coastal livelihoods, including fish nurseries, coastal protection, and tourism attractions.

- Ecosystem condition: Measure the mean age of mangroves, coral length, and other indicators of ecosystem health.
- Marine species: Monitor the status of marine species and habitats, supporting efforts to conserve biodiversity.

Social

Tracking social indicators related to coastal communities, such as employment rates, ecosystem dependency, income levels, and demographic changes, ocean accounting

provides a comprehensive view that helps identify vulnerable populations and develop targeted interventions to support their livelihoods.

- Percentage of local population's livelihood dependent on natural resources.
- Disparity in coastal protection benefits for vulnerable coastal communities due to less favourable living conditions or locations.
- Contribution of marine resources to dietary protein intake and nutrition.

Policy considerations

In addressing the complex challenges faced by coastal communities, several key policy questions emerge. Ocean accounting provides a valuable framework for gathering the data and insights needed to inform these policy decisions. The following sections explore critical questions and demonstrate how ocean accounting can support the development of sustainable and resilient coastal livelihoods.

How can we accurately assess people's dependency on the ocean for their livelihoods?

Accurately assessing and documenting the extent of people's dependency on the ocean requires comprehensive and systematic data collection. Ocean accounts play a crucial role in this process by integrating various datasets to provide a detailed picture of how communities rely on marine resources. They compile data on employment, income, and demographic characteristics of coastal communities, including jobs in fishing, agriculture, renewable energy, and other marine-related industries. By disaggregating this data by gender, age, and income levels, policymakers can identify which groups are most dependent on ocean resources. Key indicators include the percentage of local employment in marine sectors, the contribution of marine resources to household incomes, and the number of people engaged in artisanal fishing, both for subsistence and for sale.

Ocean accounts can offer insights into food security and resource access by providing data on the percentage of dietary protein sourced from marine resources and the availability and equitable distribution of these resources. This

information can help identify barriers that prevent communities from fully benefiting from marine resources. Beyond quantitative data, qualitative data from case studies and community surveys can shed light on the cultural and social significance of marine resources, which is essential for documenting the full extent of community dependency.

How can we enable sustainable livelihoods for those who rely on coastal and marine resources?

Enabling sustainable livelihoods involves ensuring that coastal and marine resources are used in a way that meets present needs without compromising future generations. Ocean accounts support this by providing data-driven insights into the sustainable management of these resources. They track the health and condition of marine ecosystems, such as mangroves, coral reefs, and fish stocks, which is critical for developing sustainable management plans that protect the resources essential for livelihoods. By highlighting the economic contributions of various marine sectors, ocean accounts can inform policies that promote diversification and balance livelihood opportunities for economic prosperity whilst maintaining the ecological integrity of the coast.

Providing alternative income-generating activities enables people to move out of environmentally degrading activities that currently sustain their livelihoods. Understanding the drivers of unsustainable resource use is crucial for developing effective interventions. Ocean accounts can help identify these drivers and ensure that the right stakeholders are targeted. This targeted approach ensures that efforts to promote sustainable livelihoods are effective and inclusive, addressing the root causes of environmental degradation while supporting economic development.

How can we measure and enhance the economic stability of coastal communities using data-driven approaches?

Economic stability is crucial for the resilience and sustainability of coastal communities. Ocean

accounts offer a comprehensive approach to measuring and enhancing this stability through data-driven policy interventions. They provide detailed data on the economic contributions of marine-related activities to local and national economies, including revenue from fish processing, ship-building, and aquaculture, as well as their contributions to GDP. Such data helps identify key economic drivers and areas needing support. By integrating economic, environmental, and social data, ocean accounts can identify vulnerabilities within coastal communities, such as income volatility, dependence on single resources, and exposure to environmental risks, which can inform resilience-building strategies. Furthermore, determining dependencies and consequently ensuring secure access rights to those natural resource assets can generate long-term economic gain, particularly if these assets are used sustainably

Data from ocean accounts can guide targeted policy interventions, such as financial support for small-scale fishers, investment in sustainable aquaculture, and coastal infrastructure development. Additionally, policies that enhance access to markets and improve value chains can boost economic resilience. Ocean accounts help ensure that economic growth is inclusive and equitable by tracking social indicators such as income distribution and employment diversity, enabling policymakers to design interventions that promote equity and reduce disparities within coastal communities.

Contact GOAP Secretariat for more details info@oceanaccounts.org

Additional Resources

- GOAP 2021, Technical Guidance on Ocean Accounting for Sustainable Development. https://oceanaccounts.atlassian.net/wiki/spaces/DTGOOA/overview?homepageId=20512905

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