An Integrated Data Framework for Sustainable Marine and Coastal Tourism

Key messages

- Ocean accounts quantify tourism's full economic footprint - both its revenue generation and ecosystem service dependencies - guiding sustainable development strategies that balance growth with natural capital preservation.

- Ocean accounts provide granular data tracking changes in coastal ecosystem health over time due to tourism pressures. This monitoring enables proactive, adaptive policies to prevent irreversible degradation before it occurs thereby protecting the industry.

- By assessing data on coastal habitat extent, pollution levels, and ecosystem services, ocean accounts reveal tourism's reliance on healthy marine environments. They highlight preserving natural assets as critical for the industry's long-term viability.

- As integrated strategic planning tools, ocean accounts provide the information needed to model different tourism development scenarios through systems modelling. This identifies the optimal balanced pathway maximising sustainable economic growth while conserving natural capital.

- Ocean accounts shed light on the equitable distribution of tourism costs and benefits across communities through detailed social data on employment, income levels, and natural resource access. This informs inclusive policies spreading gains fairly.

- By mapping tourism's linkages with fisheries, coral reefs and other marine ecosystems, ocean accounts demonstrate the sector's vested interest to proactively support ocean conservation safeguarding its own future prosperity.

Sustainable Marine and Coastal Tourism

Marine and coastal tourism is a vital economic sector, supporting a diverse array of activities ranging from beach tourism and water sports to cruising and eco-tourism[1]. This sector contributes significantly to the economies of many coastal and island nations, providing employment, income, and opportunities for cultural exchange. However, the rapid growth and intensification of these activities have led to various environmental, social and economic challenges.

The increasing pressures from mass tourism, climate change, and unsustainable practices threaten the health and resilience of marine and coastal ecosystems. These ecosystems are essential not only for their natural beauty and biodiversity but also for the services they provide to local communities and the global economy. The degradation of these environments can result in the loss of livelihoods, decreased tourism appeal, and long-term economic instability for regions dependent on tourism.

Sustainable marine and coastal tourism aims to balance the benefits of tourism with the need to protect and preserve marine and coastal environments. This involves implementing practices that minimise negative impacts, promote

conservation, and enhance the resilience of ecosystems and communities. By fostering a sustainable approach, tourism can continue to thrive while ensuring the long-term health and productivity of marine and coastal areas.

Effective management strategies are crucial to achieving this balance. These strategies include regulating tourism activities, enforcing environmental protections, and engaging local communities in decision-making processes. Additionally, investing in sustainable infrastructure and promoting eco-friendly tourism options can help mitigate the adverse effects of tourism.

The transition to sustainable marine and coastal tourism requires a comprehensive and integrated approach. This approach must cover environmental, economic, and social aspects, ensuring tourism development supports ecosystem health, economic growth, and social well-being. By adopting sustainable practices, the tourism sector can help regenerate and strengthen marine and coastal areas, preserving their benefits for future generations

Understanding and evaluating marine and coastal assets is key to this transition. Using these insights in policy-making and tourism planning can help the sector adopt sustainable practices, allowing marine and coastal tourism to thrive while protecting natural environments.

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 ocean dependence 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 (value of output, jobs), 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.

Leveraging Ocean Accounts to Support Sustainable Tourism

Ocean accounting offers a robust framework for capturing the economic, environmental, and social data related to marine and coastal tourism. By systematically compiling and analysing these diverse datasets, ocean accounting provides crucial insights that are vital for effective management of tourism activities. 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 tourism management processes and the development of strategies that balance ecological conservation with sustainable economic growth.

Economic

Ocean accounting can quantify the economic contributions of coastal and marine activities, enabling the understanding of 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 tourism development within marine and coastal areas. Key economic data include:

- Employment levels in tourism, disaggregated by geographic area and sector.
- The economic benefits of tourism, such as looking at how tourism increases the income of local residents.
- The number of establishments in tourism industries, indicating the level of investment and infrastructure development, as well as economic diversification within coastal regions.

Environmental

Ocean accounting can integrate detailed environmental data to assess the health and sustainability of marine ecosystems that support many tourism activities. This is crucial for preserving ecosystem services that tourism relies on. By providing comprehensive environmental insights, ocean accounting facilitates informed decision-making to ensure the long-term viability of both the natural environment and tourism industry. Key environmental data include:

- Data on the extent of coastal vegetation, including mangroves, coral reefs, and seagrasses, and the ecosystem services they provide, such recreational experiences.
- Data on the initial conditions of marine and coastal assets, through indicators of ecosystem health, to determine impacts from land-use change, or inform progress on restoration or conservation efforts

- Information related to pollution, such as the total volume of wastewater discharged without treatment.

Social

Ocean accounting can quantify the social impacts of coastal and marine activities, providing insights into how tourism affects local communities dependent on marine resources. By tracking indicators such as employment rates, income levels, and demographic changes, it offers a comprehensive view of the socioeconomic conditions. This enables more informed decisions aimed at promoting sustainable tourism development and supporting community well-being. Key social data include:

- Data on equitable access to natural resources and areas across different social groups
- Statistics on the number of jobs, hours worked, and full-time equivalent jobs in tourism industries, disaggregated by sex and employment status.
- Information on cultural heritage sites, including the number of visitors and their duration of stay.

Policy considerations

The private sector plays a vital role in the development of tourism activities. It includes businesses and enterprises that provide a wide range of services such as accommodation, transportation, entertainment, dining, and tour operations. The private sector drives innovation and enhances service quality by investing in new technologies and customer experiences. It also contributes to the local economy through job creation and the generation of income. Additionally, private sector businesses collaborate with the public sector to promote tourism destinations, organise events, and develop infrastructure. By responding to market demands and visitor preferences, the private sector helps shape and sustain vibrant and competitive tourism industries.

How can tourism destinations accurately measure and report their environmental footprint in marine and coastal areas?

Ocean accounts offer a robust framework for tourism destinations to accurately measure and report their environmental footprint in marine and coastal areas. These accounts integrate comprehensive datasets, providing crucial insights into environmental conditions, resource usage patterns, and the cumulative impacts across economic sectors. Key data from ocean accounts include the extent and health of coastal ecosystems like mangroves and coral reefs, pollution levels from tourism activities, and the direct and indirect dependencies of the tourism sector on natural resources.

By leveraging this integrated data, destinations can establish environmental baselines, quantifying the initial state of marine and coastal assets. This baseline serves as a reference for monitoring changes over time, enabling the identification of degradation trends and the evaluation of environmental management strategies. Ocean accounts also capture the indirect impacts of tourism by illustrating the sector's reliance on other industries through measures like direct backward linkage.

Integrating these diverse datasets allows policymakers to pinpoint areas and ecosystems most vulnerable to the environmental pressures of tourism. Investments and mitigation efforts can then prioritise high-risk regions and ecosystems that underpin the long-term sustainability of the tourism industry.

Furthermore, ocean accounts facilitate continuous monitoring of environmental performance indicators, such as waste management effectiveness and ecosystem health. This ongoing evaluation ensures resources are allocated efficiently, directing interventions towards strategies that demonstrate the greatest impact in reducing environmental degradation and enhancing resilience.

How can companies demonstrate progress toward eco-commitments or green certificates?

Ocean accounts provide the information required for companies to demonstrate progress toward eco-commitments and green certification standards. These accounts integrate key environmental performance indicators, facilitating

regular monitoring and transparent reporting on sustainability metrics. Crucial data from ocean accounts include detailed assessments of waste management practices, energy consumption levels, and the condition of coastal ecosystems impacted by tourism operations.

By leveraging this comprehensive environmental data, companies can establish verifiable baselines against which to measure their eco-commitments. Periodic comparisons of opening and closing stocks enable the quantification of changes in ecosystem extent and health over time. This longitudinal tracking identifies areas requiring targeted interventions or enhanced protection measures.

Ongoing monitoring through ocean accounts tracks visitor patterns, including high-use areas, visit rates, and duration of stays. This surveillance allows companies to assess the impact of tourism activities on sensitive coastal environments, guiding the implementation of mitigative actions to minimise degradation. It can also aid in pinpointing candidate sites for conservation based on their ecological significance, service provision to local communities, and economic value for tourism.

How can efforts ensure that tourism benefits are equitably distributed among local populations?

Ensuring an equitable distribution of tourism benefits among local populations is a critical objective that can be supported through ocean accounts. These accounts provide in-depth economic data, quantifying the direct and indirect impacts of coastal and marine tourism activities on local economies and employment opportunities.

Key insights from ocean accounts include detailed analyses of employment levels disaggregated by geographic area, sector, and demographic factors. This granular data pinpoints communities and population segments that may be underrepresented or disadvantaged in benefiting from tourism revenues and job opportunities.

Furthermore, ocean accounts capture the total backward linkage of the tourism sector, illuminating its broader economic ripple effects. This measure illustrates how changes in tourism output influence the demand for goods and services across other industries within the region. If tourism exhibits a high total backward linkage, it generates substantial indirect economic benefits through increased demand for inputs from upstream suppliers.

By leveraging this comprehensive economic data, policymakers can develop targeted strategies to ensure an equitable distribution of tourism benefits. Investments and capacity-building initiatives can prioritise communities with lower employment rates or limited access to tourism-related income streams. Additionally, ocean accounts inform the design of benefit-sharing frameworks and regulations mandating the involvement of local populations in tourism development and operations.

Ocean accounts also facilitate the monitoring of income levels and changes in asset values within coastal regions. This longitudinal tracking enables the assessment of whether tourism-driven economic gains are being distributed equitably across different social groups and geographic areas over time.

Integrating these diverse economic datasets empowers policymakers with actionable insights to promote inclusive growth and enhance social cohesion.

Contact GOAP Secretariat for more details info@oceanaccounts.org

Additional Resources

1. Northrop et. al,. (2022), Opportunities for Transforming Coastal and Marine Tourism: Towards Sustainability, Regeneration and Resilience
2. United Nations. (2008). Tourism Satellite Account: Recommended Methodological Framework
3. GOAP (2024). Tourism Satellite Accounts: What are they and what data is needs? Brief 901.1
4. Examples of Tourism Economic Satellite Accounts:
   a. The Bahamas: https://shorturl.at/YZduz
   b. Aruba: https://shorturl.at/3Wgp1
   c. Indonesia: https://shorturl.at/OOGfy
   d. The Maldives: https://shorturl.at/lxbUM

References

1. Tonazzini, D., Fosse, J., Morales, E., González, A., Klarwein, S., Moukaddem, K., Louveau, O. (2019) Blue Tourism. Towards a sustainable coastal and maritime tourism in world marine regions. Edited by eco-union. Barcelona.