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### I. SESSION DESCRIPTION

**ID: T1a**

**An overview of the rapidly emerging field of Ocean Accounting: extending international standards towards the social and equitable valuation of ocean ecosystem services**

	Name	Organisation	E-mail
Host:	Jordan Gacutan	Global Ocean Accounts Partnership / UNSW	j.gacutan@unsw.edu.au

#### Abstract:

The field of Ocean Accounting is rapidly emerging as a national framework to measure and manage the complex interactions between ocean ecosystems, society and the economy. Aligned with international statistical standards such as the System of Environmental–Economic Accounting (SEEA), Ocean Accounting extends these frameworks to include the unique characteristics of marine ecosystems and the services they provide. This session will provide an overview of Ocean Accounting, with a focus on case studies demonstrating its potential to support the social and equitable valuation of ocean ecosystem services.

Over 30 countries are now extending their national accounts to incorporate ocean ecosystems and their services, with increasingly ambitious efforts to link Gross Domestic Product (GDP) to the benefits provided by these ecosystems. Drawing from initiatives in the Maldives, Fiji, Vanuatu, Viet Nam and many others, this session will to demonstrate how ecosystem services—such as coastal protection, carbon sequestration, and fisheries— have increasingly been linked to economic performance while maintaining environmental sustainability.

Further, we will explore efforts to develop of social accounts is broadening the scope of traditional metrics by integrating dimensions such as equity and community well-being. By combining environmental, economic, and social data, Ocean Accounting provides a comprehensive approach to assess the contributions of ocean ecosystems to human welfare while addressing pressing issues of inclusivity and equity.

This session will draw upon knowledge and insights from the Global Ocean Accounts Partnership (GOAP), which is actively supporting global and regional communities of practice. Through its collaborative networks, GOAP is fostering the development and implementation of Ocean Accounting frameworks to build capacity and drive sustainable and equitable ocean governance.



### Goals and objectives of the session:

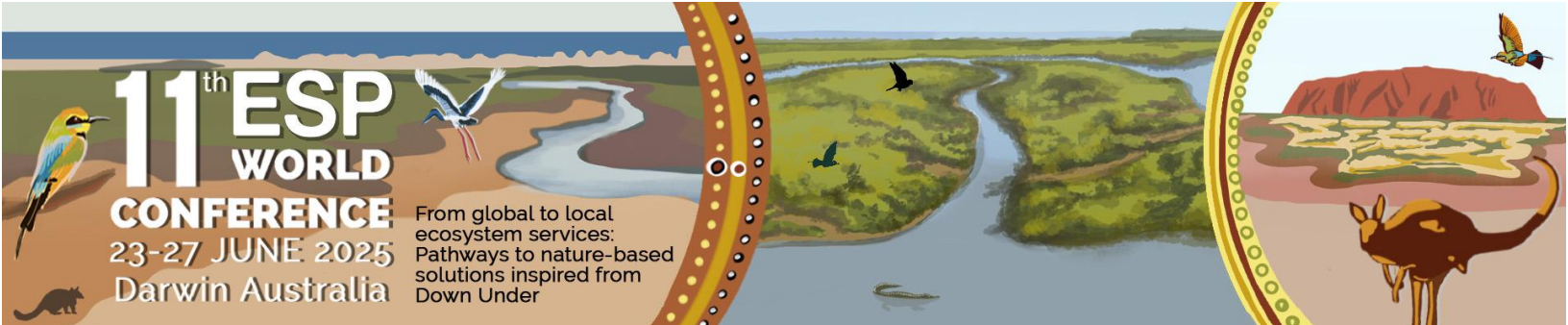
1. Introduce Ocean Accounting: Provide participants with a comprehensive understanding of the Ocean Accounting framework and its relevance to ecosystem services, sustainability, and equitable governance. Demonstrate its difference to the myriad of ecosystem and natural capital accounting approaches.
2. Demonstrate practical applications: Highlight how Ocean Accounting is being implemented globally and regionally, showcasing its potential for influencing policy and management decisions.
3. Foster collaboration: Find potential collaborations across the 30 countries with ambitions to implement OA, to encourage interdisciplinary dialogue among scientists, and practitioners to strengthen Ocean Accounting methods.
4. Promote equity and inclusivity: Emphasize the importance of social accounts in addressing equity, cultural significance, and community well-being in ocean management.
5. Build capacity: Share resources and best practices from the Global Ocean Accounts Partnership (GOAP) to support participants in applying Ocean Accounting in their respective fields.

### Planned output / Deliverables:

Networking and collaboration Plan: A follow-up strategy with a contact list and links to global and regional communities of practice, fostering ongoing dialogue and partnerships. As the communities of practice are mostly public servants and policy advisors, this provides an opportunity to link scientists with these members through dialogue.

Session resource pack: A comprehensive package including slides, key readings, case studies, and tools from the Global Ocean Accounts Partnership (GOAP) to support implementation of Ocean Accounting.

Summary document: A summary of session insights, best practices, and recommendations for integrating Ocean Accounting into ecosystem service science and policy.



## II. SESSION PROGRAM

**Room:** Betbiyan 3

**Date of session:** Wednesday, 25 June 2025

**Time of session:** 10:30 – 12:30

### Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
10:30 – 10:35	Jordan	Gacutan	Global Ocean Accounts Partnership Secretariat, UNSW	Welcome and introduction to session – objectives and outcomes
10:35 – 10:50	Maria	Alarcon Blazquez	Global Ocean Accounts Partnership Secretariat, UNSW	A Global Analysis of Current Patterns, Drivers and Challenges in Ocean Accounting Implementation
10:50 – 11:05	Miguel	Inácio	Environmental Management Research Laboratory, Mykolas Romeris University, Lithuania	System of Environmental Economic Accounting – Ecosystem Accounting in coastal and marine areas: a systematic review
11:05 – 11:20	Agavia Kori	Rahayu	Fisheries Resource Center of Indonesia, Rekam Nusantara Foundation	National legal and policy, governance, and collaboration frameworks for ocean accounts implementation: lesson learned from Indonesia
11:20 – 11:35	Miguel	Inácio	Environmental Management Research Laboratory, Mykolas Romeris University, Lithuania	Ecosystem accounting in coastal and marine areas of Lithuania
11:35 – 11:50	Maria	Alarcon Blazquez	Global Ocean Accounts Partnership Secretariat, UNSW	Putting people at the heart of ocean decision-making: the integration of social considerations in ocean accounting.
11:50 – 12:05	Michael	Burnside	Global Ocean Accounts Partnership Secretariat, UNSW	Ocean Accounts: Supporting Poverty Alleviation and Preventing Harmful Decisions in Coastal Communities
12:05 – 12:30	Jordan	Gacutan	Global Ocean Accounts Partnership Secretariat, UNSW	Next steps for Ocean Accounting – strengthening links with the ESP community (Workshop)



### III. LIST OF ABSTRACTS

*The first author is the presenting author unless indicated otherwise.*

#### 1. A Global Analysis of Current Patterns, Drivers and Challenges in Ocean Accounting Implementation

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**Keywords:** Ocean accounting, evidence-based governance, data integration, institutional frameworks, global implementation

Ocean accounting represents a critical approach to measuring and managing progress toward sustainable ocean development, yet its global implementation remains fragmented. Through a comprehensive review of ocean accounting globally, we identified 65 initiatives across 50 countries, revealing systemic challenges hindering effective implementation: persistent data limitations, methodological barriers, and issues with data standardization. Our analysis reveals significant geographic and thematic imbalances in implementation, with deeper ocean environments representing only 7% of current initiatives compared to well-represented coastal ecosystems. We identify key policy drivers motivating ocean accounting adoption, including sustainable use and development and tracking nature's contributions to economy and society. Regional analysis shows distinct patterns in implementation approaches, reflecting different institutional capacities and priorities rather than fundamentally different policy goals. To strengthen global ocean accounting practice, we propose pathways addressing three key dimensions: expanding the scope and integration of accounts, strengthening institutional capacity for implementation while ensuring methodological transferability, and improving data integration across scales and institutions. This research provides timely insights for advancing





ocean accounting from isolated exercises to integrated frameworks capable of supporting equitable and sustainable ocean governance as pressures on marine resources intensify globally.

## 2. System of Environmental Economic Accounting – Ecosystem Accounting in coastal and marine areas: a systematic review

**First author(s):** Miguel Inácio

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**Keywords:** SEEA-EA, ocean accounting, ecosystem services, ecosystem condition, CICES

Ocean accounting has gained increased recognition in the past decades as a means to integrate the contributions of coastal and marine ecosystems to socio-ecological systems.

However, its contribution has been only partly integrated into economic accounting systems. The System of Environmental Economic Accounting – Ecosystem Accounting (SEEA-EA) was adopted in 2021 by the United Nations as an international statistical standard to account for the value of nature in decision-making and includes the compilation of physical (ecosystem extent, condition and services) and monetary (ecosystem services and assets) accounts. Since its adoption, the framework has been increasingly applied worldwide. However, as with other frameworks and concepts, its application in coastal and marine areas falls short compared to terrestrial systems. In this study, we systematically reviewed the implementation of ecosystem accounting (based on SEEA-EA) comprising different ecosystem types, including coastal and marine ecosystems. Initially, we identified 86 articles, of which 37 included the coastal and marine ecosystem types analysis. We extracted information on the year, geographic location, ecosystem type, extent, condition, and services from each article. The results showed that studies were published between 2015 and 2024, with 2022 being the year with more articles published (11 studies).



Most studies were conducted in Europe (23 studies) and at national scales (15 studies). From the 37 studies, only 13 were purely coastal and marine; the other 24 included other ecosystem types. The extent was considered by 23 studies, mainly using European products and national land cover maps. The condition was only assessed in 14 studies, predominantly chemical and structural state characteristics. Physical ecosystem services accounts were compiled by 32 studies, and monetary accounts by 19 documents. Most studies used mixed-methodological approaches. No study attempted any validation. The results provide important insights into the application of ocean accounting globally.

### 3. National legal and policy, governance, and collaboration frameworks for ocean accounts implementation: lesson learned from Indonesia

**First author(s):** Agavia Kori Rahayu

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**Keywords:** environmental economic accounting, ocean governance, ecosystem services accounting, science to policy

Ocean Accounts (OA) serve as an instrument for consolidating ecological and socio-economic data in a standardised manner. Since 2021, Indonesia has been piloting and developing OA to support evidence-based policymaking, balance environmental and economic outcomes, and track progress toward national and international sustainability commitments. The framework advances ecosystem-based management through consideration of provisioning, regulating, and cultural services provided by ocean ecosystems.



This study aims to examine the legal and policy frameworks that underpin OA implementation in Indonesia, including relevant laws, regulations, and institutional mechanisms and their implications for the measurement of ecosystem services and management of natural assets. It explores implementation steps, outputs in quantifying and valuing ecosystem services (e.g. ANDALUSIA – Making Ocean Capital Visible national valuation initiative), and challenges in establishing data governance and inter-institutional collaboration.

The study highlights Indonesia's practical use of ecosystem services to ocean management frameworks, including marine spatial planning, fisheries management, marine protected areas, and blue economy development. Looking ahead, Indonesia aims to expand OA implementation and capacity building to a national scale, develop social accounting, and integrate Gender Equality, Disability, and Social Inclusion (GEDSI) principles into OA frameworks. By providing key insights and lessons learned, this study offers valuable guidance for other countries seeking to implement OA and establish a reference for future OA development in Indonesia.

#### 4. Ecosystem accounting in coastal and marine areas of Lithuania

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**Keywords:** Baltic Sea, marine accounting, ecosystem services, SEEA, natural capital

Coastal and marine ecosystems play an essential role in the socio-ecologic systems of regional seas like the Baltic Sea. In the Baltic region, these areas contribute to several socio-economic activities. In Lithuania, marine areas contribute greatly to the country's economic dynamics despite the short coastline. However, despite its importance, the Baltic Sea is one of the most polluted and impacted seas worldwide. One way to reverse this is by integrating ecosystem



functions and services into economic accounting. The System of Environmental Economic Accounting – Ecosystem Accounting (SEEA–EA) is a standard statistical framework developed to integrate all aspects of natural capital into economic accounting by compiling information on ecosystem extent, condition, services, and assets. The SEEA–EA has been increasing worldwide but with less emphasis on coastal and marine ecosystems. Therefore, testing and applying this framework in marine systems is necessary. The main aim of this study is to implement the first steps of SEEA–EA in Lithuanian coastal and marine areas by compiling information on physical accounts (extent, condition). The ecosystem extent was compiled based on Lithuania's official cadaster data, which includes yearly information on land uses (including coastal and marine areas). Based on this data, several hectares of marine areas in Lithuania decreased, which raises questions regarding base data accuracy. The initial steps for compiling ecosystem condition were to define indicators representing the several categories of the Ecosystem Condition Typology within SEEA–EA and link it with national, European and global databases. We defined 16 indicators (e.g., primary productivity) covering all six categories (e.g., physical state characteristics). Defining the initial steps of SEEA–EA implementation in Lithuania will set the basis for the country's future reporting obligations. Future steps include defining reference areas/periods, developing a weighted ecosystem condition index, and assessing and mapping ecosystem services.

## 5. Putting people at the heart of ocean decision–making: the integration of social considerations in ocean accounting.

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**Other author(s):** Scott Spillias, Philip James, Jessica Bridgland, Cheryl Joy Fernandez–Abila, Maria Alarcon Blazquez, Jordan Gacutan, Arlette Schramm

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**Keywords:** ocean accounting, marine social science, ocean governance, sustainable development.

Ocean Accounting (OA) is a framework and process designed to help decision-makers, stakeholders and communities make decisions about the management of the ocean. OA was established in 2019 and is now being undertaken in 23 different countries across the world. The OA framework involves the structured compilation and standardisation of different domains of ocean related data (environmental, economic and social) through a common information structure. Social accounting (i.e. social, cultural and equity considerations) is central to the framework, however, to date, it has lacked integration in OA. Therefore, currently, there is: (i) a lack of incorporation of the lived experiences of individuals, communities and populations who use the ocean and are excluded from current statistics, (ii) an absence of information on resource dependence, livelihoods and wellbeing and equity in OA and (iii) limited incorporation of local and traditional knowledge in OA. In response to this, the present study used a systematic map to answer “What is the existing evidence base on social accounting in the context of the ocean?”. The systematic map brings coherence to the evidence base, identifies gaps, and provides a way forward for the consideration of social accounting in research, policy and practice.

## 6. Ocean Accounts: Supporting Poverty Alleviation and Preventing Harmful Decisions in Coastal Communities

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**Keywords:** ocean accounts, poverty alleviation, decision-making, coastal communities, sustainable development

The critical relationship between ocean ecosystem services and human wellbeing in coastal communities is widely acknowledged, yet many context-specific relationships remain inadequately understood. This knowledge gap limits effective policy design that balances marine ecosystem conservation with poverty reduction. Over 3 billion people depend on marine ecosystem services for their livelihoods, with this dependency particularly acute among vulnerable coastal communities where natural capital often represents their most accessible resource.

Ocean accounts provide a structured framework that integrates ecosystem service assessments with economic and social data to inform two critical aspects of decision-making: supporting poverty alleviation and preventing harmful interventions. By systematically measuring marine ecosystem extent, condition, service flows, and benefits to communities, ocean accounts serve dual purposes:

First, they support better decisions for poverty alleviation by identifying vulnerable populations through multiple dimensions of ecosystem service dependence: direct resource reliance, geographic vulnerability to service disruption, limited adaptive capacity, social inequities in service access, and intergenerational service benefits. This enables evidence-based approaches to reducing poverty while protecting vital ecosystem functions.

Second, they prevent harmful decisions by revealing hidden costs when ecosystem service connections are disrupted. Case studies from Inhambane Bay (Mozambique) and Lake Illawarra (Australia) demonstrate how management changes without comprehensive understanding of ecosystem service-livelihood connections can trigger cascading negative impacts on local communities.

Ocean accounts make visible the often-hidden dependencies between ecosystem services and community prosperity, enabling policies that protect both natural capital and human wellbeing across multiple scales.