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Global Dialogue on Ocean Accounting and First Annual Meeting of the Global Ocean Accounts Partnership

12–15 November 2019

University of New South Wales, Sydney, Australia.

Draft Report – 20 December 2019

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1. Background

The ocean is the life source of our planet, and a critical foundation of social and economic development. Through the 2030 Agenda for Sustainable Development all countries have committed to conserve and sustainably use the ocean by 2030, and a growing number have established ambitious strategies to develop their ocean economy.

These commitments and strategies have been made in an era of profound challenges and change. Many marine and coastal ecosystems show rapid ongoing declines which are expected to compromise—sometimes irreversibly—benefits and opportunities that the ocean provides to people. Ocean-based economies have entered a historic period of structural transition, where the importance of established sectors (e.g. capture fisheries, oil and gas) are declining relative to emerging sectors (e.g. aquaculture, offshore renewable energy, and biotechnology). Ocean economy growth prospects beyond 2030 are limited, without transformative action to achieve sustainability.

The Global Dialogue on Ocean Accounting, including the First Annual Meeting of the [Global Ocean Accounts Partnership](#) (GOAP), was co-hosted by the University of New South Wales (UNSW), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and supported by the World Bank Blue Economy Program. The Dialogue brought together technical experts (including scientists, economists, statisticians, policy specialists) and decision-makers from around the world (including representatives of 18 governments) to share experiences and lessons learned about ocean accounting, and develop an international action plan for collaborative efforts to ensure that the values and benefits of oceans are recognized and accounted for, in all relevant policies and decision-making about social and economic development.

The Global Dialogue and associated side events were designed, in particular, to bring together stakeholders involved or interested in the following initiatives:

- ESCAP's 2018 **Regional Expert Workshop on Ocean Accounts** for which this event functioned as a direct follow-up.
- Deliberations of the **High-Level Panel for a Sustainable Ocean Economy** (HLPO), concerning national accounting for oceans.
- The World Bank Blue Economy program and **PROBLUE trust fund** including discussion of planned program activities supporting integrated and sustainable economic development in healthy oceans.

Established in June 2019, the GOAP is a flexible coordination and communication structure for diverse member institutions, who have a common interest to ensure that the values and benefits of oceans are recognized and accounted for in decision-making and social and economic development. In accordance with its mutually agreed Terms of Reference, the Partnership seeks to achieve this objective by developing a shared technical framework for ocean accounting, coupled with collaborative capacity-building activities that support the development, maintenance, and ongoing use in decision-making, of holistic ocean accounts that link together social, environmental and economic statistics.

Membership of the GOAP is open to national governments, intergovernmental institutions, inclusive representative bodies from the private sector, and research-intensive institutions that have been granted not-for-profit status in their country of origin.

2. Objectives and structure of the Global Dialogue

The Global Dialogue featured a combination of plenary panel discussions and keynote presentations as well as two dedicated discussion streams on “*Building Ocean Accounts*” and “*Using Ocean Accounts*”. The Agenda (see **Annex 1**) was focused on achieving the following key objectives:

- 1) Building a global community of practice that enables mutual support, awareness and coordination between the growing number of countries and institutions that are developing ocean accounting pilot projects. A “pilot project” is for the present purposes defined broadly to include improvements and extensions of the System of National Accounts (SNA), ecosystem assessments at multiple scales, natural capital assessments, integrated ocean observation, and/or related ocean assessment activities from environmental, social and economic perspectives.
- 2) Reviewing and updating of the GOAP Zero Draft **Technical Guidance on Ocean Accounting for Sustainable Development**, which includes: an introduction to Ocean Accounts; illustrative structures and component tables for Ocean Accounts informed by international statistical standards; process guidance for compiling Ocean Accounts (a “Quick Start Guide”); process guidance for use and maintenance of Ocean Accounts; and a research agenda for ocean accounting to address outstanding technical and governance challenges.
- 3) Formulation of a 2020–2021 work plan for the **Global Ocean Accounts Partnership**.
- 4) Formulation of draft intergovernmental strategies for accelerating development and use of Ocean Accounts — informed by the ongoing deliberations of the **High-Level Panel for a Sustainable Ocean Economy**.

As part of the overall agenda of the Global Dialogue, two additional meetings were organized:

- **High-Level Policy Dialogue on Ocean Accounts**
The high-level policy dialogue provided a dedicated informal space in the agenda for deliberations between delegation leads and other senior officials, concerning objective four mentioned above. Delegates were invited to consider the illustrative discussion points provided in advance of the meeting, which were informed by the ongoing deliberations of the HLPO.
- **First administrative meeting of the Global Ocean Accounts Partnership**
This component of the Agenda was attended by the current member institutions of the Partnership, chaired by the Interim Secretariat. Members discussed a range of administrative matters including: ongoing development of the GOAP Technical Guidance on Ocean Accounting; membership invitation processes; appointment of Co-Chairs for 2020; appointment of a Secretariat for 2020; development of a 2020 events program and awareness raising strategy; financial sustainability; and other business raised by the members.

3. Participation in the Global Dialogue

More than 100 participants from 26 countries, including representatives from 18 governments attended the Global Dialogue. Participating country delegations and other institutions included: Australia, Bangladesh, Cambodia, Canada, Cape Peninsula University of Technology, China, CSIRO, Fiji, Global Oceanography Centre, Malaysia, Maldives, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Sri Lanka, Thailand, Timor-Leste, Vanuatu, Viet Nam, the World Bank, World Wide Fund for Nature (WWF), UN ESCAP and the University of New South Wales.

The full list of formally registered participants and participating institutions can be found in **Annex 2**.

4. Plenary Briefing

This section was designed to provide basic introduction to the contents of the Global Dialogue, including the high-level policy context, Technical Guidance document and Ocean Accounts pilots.

[The high-level policy context for Ocean Accounts](#) emphasized that oceans are in transition. The structure of the global ocean economy is changing with more industries being developed, while the ocean environment is changing with a dramatic decline of ecosystems and biodiversity largely due to anthropogenic impacts. Ocean industries are expected to grow in the medium term, with long-term growth prospects being challenged in the absence of appropriate action to maintain environmental sustainability. Increasing recognition of this challenge is driving action by both international organizations and national governments. Ocean Accounts can provide a comprehensive set of information to better inform integrated policy decision to ensure sustainability of our ocean.

[Introduction to the GOAP Technical Guidance on Ocean Accounts](#) reviewed the objectives, development processes, contents, solved and unsolved issues of the ‘how to’ manual for Ocean Accounts. Work started on the GOAP Technical Guidance started in early 2018 by the identification of nine key technical issues for testing and resolution which were deliberated during the Asia-Pacific Regional Expert Workshop on Ocean Accounts in August 2018. The workshop concluded with a strong need for a coherent and quality assured manual for both compilers and users of ocean accounts to establish a common language among scientists, statisticians and policy experts as well as bring the ocean into official statistics. Since then, much progress has been made to improve Technical Guidance. Detailed information of overview, issues, progress and next steps of Technical Guidance will be introduced in Chapter 7.1 below.

[Introduction to Ocean Accounts pilot projects](#) summarized existing pilot projects within ESCAP and non-ESCAP countries. Pilot projects followed the process of 1) scoping assessment to identify priority pilot topics, 2) 1st national workshop to agree on the topic among key stakeholders 3) pilot implementation, and 4) 2nd national workshop to review initial pilot results. The importance of scoping assessment that follows the *ESCAP Diagnostic Tool*¹ was highlighted. Detailed information of pilot projects can be found in Chapter 7.2.1.

5. Plenary panel discussion

5.1. What are Ocean Accounts and why are they important?

The Global Dialogue started with a discussion among scientists, statisticians and policymakers on what Ocean Accounts are and why they are important. The discussion highlighted that:

- Ocean Accounts are considered as a common language that brings scientists, statisticians and policymakers together. By organizing statistical data from social, environmental and economic demands to make better decisions on oceans, Ocean Accounting is a useful tool, supporting sustainable development and other objectives.
- Ocean Accounts should integrate with other tools and analytical methods (e.g. cost/benefit assessment and impact assessment) that are used in governance. At a technical level, Ocean

¹ <http://communities.unescap.org/environment-statistics/tools/diagnostic-tool>

Accounts should produce indicators and inputs to different analytical processes that match governments' needs.

- Developing Ocean Accounts should not take a lot of time and resources, but it will still require resources. The discussion highlighted the importance of building narratives that convince leaders to deploy the necessary resources for development of ocean accounts. A high and growing level of political interest was recognized, but there are demands for stories / examples of how Ocean Accounts can, in particular, support specific policy decisions.

5.2. The contribution of Ocean Accounts to developing a sustainable ocean economy

Informed by their respective experience and expertise in diverse countries and contexts, delegates discussed the ways in which Ocean Accounts could make practical contributions to developing a sustainable ocean economy. Specific points that emerged during wide-ranging discussions included the following:

Various definitions of “Ocean Accounts”:

- Ocean Accounts can be distinguished from other collections of ocean-related information on the basis of their adherence to international statistical standards, in particular the System of National Accounts 2008 and System for Environmental Economic Accounting 2012.
- Many Ocean Accounts are comprised primarily of monetary data drawn from existing National Accounts following the SNA. The scope of these monetary Ocean Accounts can be defined in terms of the proportions of each economic sector that rely on the ocean, or marine sectors only.
- Ocean Accounts overlap with and have many practical interconnections with Marine Spatial Planning (MSP). An important use case for Ocean Accounts is as the information and monitoring base for MSP.
- Ocean Accounts should have a broad information base including pressures, ecosystems, conditions, services, benefits, and most importantly including social aspects and environmental impacts.

Measurement of “Sustainability”:

- Existing Ocean Accounts currently do not have enough variables or high-level indicators to measure sustainability—however the “Balance Sheet” concept from national accounting provides a robust starting point for assessing sustainability where the range of assets is sufficiently comprehensive. In such cases a decline in the stock of produced (e.g. ports) and non-produced (e.g. mangroves) assets indicates a decline in sustainability.
- Sustainability ensures future flows of services.
- Pilot Ocean Accounts focusing on the tourism sector have enabled measurement of “Sustainability” defined as growth within certain environmental condition limits and management of impacts within carrying capacity.
- The complex structure of the ocean as well as its impacts range over broad space decided that “Sustainability” cannot be limited within specific areas, necessitating some degree of cross-jurisdictional structure for Ocean Accounts.

Various definitions and measurement of the “Ocean Economy”:

- Gross Ocean Product is the total value of goods and services, while the marine economy is the gross value-added of marine sectors.
- As highlighted by the example of marine and coastal tourism, there are many complex interconnections between ocean and terrestrial space, and economic sectors. These

interconnections highlight the importance of maintaining flexibility in the definition of the Ocean Economy.

- Clarity is needed concerning the conceptual and practical relationships between “Ocean Accounts”, the “Ocean Economy” and the “Blue Economy”.

Other points:

- Institutional partnerships and shared objectives are more important than immediate technical agreement on accounting approaches and measurement systems.
- There is an urgent need to simplify approaches to Ocean Accounting and for agreed definition and good practice guidance.
- There is a need for Global Ocean Accounts that cover areas located beyond the limits of national jurisdiction.

6. Keynote presentation: Connections between Ocean Accounts and ocean science

This keynote presentation and accompanying [brief](#) introduced the importance of connecting together the diverse outputs and processes of ocean science, to inform ocean governance processes. It was highlighted that Ocean Accounts can serve as the link between ocean science and ocean governance.

The ocean is a very dynamic 3D environment both spatially and temporally. Humans derive numerous benefits from ocean systems through ecosystem and abiotic services for economic purposes. Increasing ocean economy in the accessible ocean space increases sectoral and environmental conflict, which decreases ecosystem function and integrity as well as reduces overall service provisioning. Governance is required to optimize human benefits without compromising ocean health. Both market and non-market values, and assets require accounting in the estimation of the contribution of oceans to societal well-being, as do the impacts of the economy on the environment. Thus, Ocean Accounts can provide a platform to integrate information across economic, social, and environmental sectors.

Priorities for Ocean Accounts:

- Considering water-column characteristics in determining ocean ecosystems.
- Confirming clear, inclusive definitions of the Ocean and Blue Economy.
- Requiring new “Blue Economy” ecosystem-based approaches to ocean governance to account for inclusivity & sustainability within ocean resource use, changing ocean environments and new approaches to ocean sciences.
- Distinguishing ecosystem services (provide by biotic resources) and abiotic services (e.g. mining, oil, and gas)
- Managing user conflicts across multi-sectors by ocean governance. For example, manage the conflicts among sector development and environmental protection.
- Incorporating novel data and information into management.
- Including ecosystem accounts, national accounts, environment-economic accounts, risk accounts, social accounts and governance accounts into Ocean Accounts.

Use opportunities and applications for Ocean Accounts and ocean science:

- Inform decision making within policy development that extends from the ecosystem level to a National Accounts level.
- Seamless integration of new ocean data and identification of data gaps and needs.

- Broader scope of valuation than national accounts in terms of blue economy approaches of sustainability and inclusivity.
- Justification of the value of Research, Management and Policy in the ocean space.
- Positioning of strategy development in ocean economic development.

Further discussion focused on:

- Production and consumption impacts from terrestrial ecosystems cannot be separated from Ocean Accounts.
- How to bring the physical and economic accounting together into the same framework is one of the objectives of Ocean Accounts.
- Encourage countries to evaluate how they are governing oceans as well as what laws and regulations for a particular space are new areas to explore. In the technical guidance, there is an introduction on how to combine qualitative governance information with quantitative economic and environmental activities.
- The ways to integrate renewable energy into ecosystem services or abiotic services.

7. Results and outcomes of the Global Dialogue

7.1. Overview, issues, progress and next steps for the GOAP Technical Guidance

The August 2018 Regional Expert Workshop on Ocean Accounts agreed that Technical Guidance on Ocean Accounting should:

- Explain “how” to statisticians
- Explain “why” to non-statisticians (scientists & policy)
- Link to existing standards (SNA, SEEA-CF, and SEEA-EEA)
- Provide a foundation for testing and experimentation
- Contribute to SEEA Ecosystems revision where appropriate (classification and concepts)

Much progress has been made after August 2018, including:

- Testing Ecological Marine Units (EMUs). Research of applying EMU to test coral reef extent and aragonite concentration was done by ESCAP colleagues, which is under revision.
- Testing Ecological Marine Units, Coastal and Marine Ecological Classification Standard (CMECS) for mapping (see Chapter 7.2.3.3).
- Developing an accounts-based inventory of ocean data (see Chapter 7.2.3.2).
- Developing a core set of common statistics among ocean accounts, climate change and disaster risk².
- Availability of the IUCN Global Ecosystem Typology (see Chapter 7.2.3.4).

During this Global Dialogue, zero draft **Technical Guidance** on Ocean Accounting was reviewed and refined by ‘builders’ and ‘users’ of Ocean Accounts. Specialist scientific and technical issues related to spatial units, asset classification and ocean economy are presented in Chapter 7.2.3, and specialist policy and governance

² https://www.unescap.org/sites/default/files/Ocean%20accounts_30Oct2018_LowRes.pdf

issues related to uses, modelling, and optimal presentations of Ocean Accounts data are presented in Chapter 7.3.3.

Participants were asked to send specific contributions to Technical Guidance before the Global Dialogue from **the building perspective**. Questions raised in 2018 Regional Expert Workshop were reviewed again (see [Overview & issues of Technical Guidance](#) and **Annex 3**). According to the results of the vote³ of participants, Technical Guidance should⁴

- Provide more detailed statistical guidelines.
- Keep separate terminology for marine, coastal, terrestrial and freshwater spatial units (e.g., MBSU, TBSU).
- Include a clear sectoral definition of the “Ocean Economy”.
- Test the IUCN Global Ecosystem Typology.
- Try to incorporate the Rest of the World in the flows of residuals. This may require dealing with lag time and dispersion, which may be difficult in an accounting structure.
- Include spatial details to the content of the governance accounts, e.g. jurisdiction, institutions, social conditions, etc.

There were discussions from **the using perspective**, and the recommendations included:

- Technical Guidance should highlight how oceans accounts can be useful.
- A short guidance paper on specific topics would complement the current ‘handbook’ guidance.

7.2. Building Ocean Accounts

Informed by a diverse range of presentations and discussions, this section followed a trajectory designed to show good practice and technical support to build Ocean Accounts framework. Presentations and discussions included:

- Country pilot projects that were specially implemented to test Ocean Accounts framework.
- Existing activities that do not fully match but overlap with the Ocean Accounts framework, which provide good experiences to develop Ocean Accounts.
- Specialist scientific and technical issues to develop Zero draft Technical Guidance from the building perspective.

7.2.1. Pilot projects

5 ESCAP pilots (China, Malaysia, Samoa, Thailand and Viet Nam) and 2 non-ESCAP pilots (Canada and Southern NSW) presented their work for the pilot projects. Different pilot countries focused on different research topics based on each country’s ocean priorities. The results, challenges, next steps, success factors, and recommendations of the pilot projects were well presented.

³ The vote only counted the number of “agree”.

⁴ Agreed by 50% of the participants.

7.2.1.1. China

Topic:

Mangroves assets and ecosystem services accounting ([see presentation](#))

Geographical scope:

Beihai City, Guangxi Province

Lead agency:

Fourth Institute of Oceanography

Outputs:

The pilot linked the ocean assets to SEEA-CF, created assets account for mangroves and designed the classification of the ecosystem services of mangroves. The result showed mangrove land-cover increased from 1988 to 2018, which was calculated by remote sensing data. The total carbon stock of Beihai's mangroves was about 0.67 million t C (in situ sample collection).

Challenges:

Data gaps among the land and the ocean, including dimension, fluidity and economic activities.

Next steps:

The pilot team will extend the research to other coastal ecosystems. They will apply carbon-related assets accounting to National/Local Green House Gas Inventories (Coastal wetlands) and establish an experimental database framework for Oceanic SEEA.

Success factors:

The pilot started from a small area and one ecosystem, and successfully linked local priorities with national priorities (Ecological Civilization and building China into a Maritime Power).

Recommendations from the pilot team:

The pilot team hoped to have more international and regional collaboration with agencies among UN systems as well as link to China's initiatives (e.g. Belt and Road Initiative and South to South Cooperation Fund). The pilot team also suggested that Ocean Accounts could link to international hot spot topics such as climate change and biodiversity conservation.

Discussions and suggestions from the participants:

- The data framework for ocean accounting was supposed to be 3-Dimensional due to the different layers from the top to the bottom of the ocean. The data framework should also find a solution to describe seawater movements and seafloor characteristics.
- Considering the economic data that related to the increase of mangrove land-cover in this pilot study was suggested.

7.2.1.2. Malaysia

Topic:

Living resources in the Straits of Malacca ([see presentation](#))

Geographical scope:

The Straits of Malacca

Lead agency:

Department of Statistics Malaysia

(Research team: University of Malaya)

Outputs:

The pilot team focused on the sustainability of the fisheries in the Straits of Malacca due to the limited data availability. The results showed the total fish landings generally increased from 1998 and reached its peak in 2016, while the fish landings per vessel decreased. The fish landings per inboard vessel (bigger vessel) increased, which might due to the better fishing strategy and technology. The impact of the reduction in mangrove areas seemed to influence only selected species (e.g. anchovy). Phytoplankton biomass appeared to be the main driver of fish landings which was controlled by temperature and river runoffs. The results also showed ocean primary productivity was sensitive to Climate Change, particularly in the Straits of Malacca. Fisheries were indirectly subjected to atmospheric/climatic phenomenon such as El Niño, monsoon, warming, etc. that was proved in this pilot study.

Challenges:

Lack of useful data was the main challenge in the pilot study, resulting in the change of the study topic. Also, the lack of data sharing institutions among departments increased the difficulty in data access and availability.

Next steps:

Ocean information will be inputs to the 12th Malaysia Plan as well as a blueprint. Malaysia will also focus on conserving natural resources in the future. The Department of Statistics Malaysia will coordinate 12 ministries/various agencies related to Ocean Accounts and make the work forward to ensure the success of the 12th Malaysia Plan.

Success factors:

A comprehensive scoping report was a good starting point for the pilot study.

Discussions and suggestions from the participants:

It was suggested to use fish stocks if data is available.

7.2.1.3. Samoa

Topic:

Sustainable tourism - accounting for the environment and selected ocean factors

([see presentation](#))

Geographical scope:

The whole country

Lead agency:

Ministry of Natural Resources and Environment

Outputs:

The pilot study successfully built the first experimental Tourism Satellite Account (TSA) at a national level and linked TSA to SEEA Water Accounts and Energy Accounts (electricity). The results showed the percentage of water costs used by tourism was 11.5% in 2017 and the electricity sales to the tourism industry was 10.1% in 2018.

Most data for the TSA were readily available in the pilot study, while the TSA Indicator Survey covering demand and supply for Tourism-Characteristics Products and Tourism-Related Products was missing. Thus, a sample of 58 main Tourism related Industries was surveyed to support data availability.

Challenges:

Major data gaps, especially in relation to Waste Accounts and Energy Accounts, were the main challenges in this pilot study, both of which required an improvement in administrative data as well as coupled with surveys. Also, better data-sharing arrangements between agencies were necessary, which were under the improvement of Samoa Bureau of Statistics. Also, Samoa lacked technology to collect scientific ocean data and requested help from other countries.

Next steps:

1. TSA Implementation: Samoa will develop a Policy Paper including a Road Map and Guidelines for the full development of a TSA for Samoa including building in sound linkages to other key accounts using the SEEA framework.
2. TSA Key Data Requirements: The pilot team will identify, design and conduct surveys to obtain the necessary ratios and benchmarks to fully link the TSA to other key accounts as well as further improving national accounts linkages. Also, obtaining key administrative datasets and rearranging them to interlink with ongoing TSA datasets are under consideration.

Success factors:

The pilot team worked very well with Samoa Bureau of Statistics, which helped to coordinate with different agencies to collect data.

Recommendations from the pilot team:

Use the stakeholder coordination mechanism to start developing accounts.

Discussions and suggestions from the participants:

- It is very important for the national statistics office to take the lead role of data combination and aggregation.

7.2.1.4. Thailand

Topic:

Sustainable tourism - linkages between tourism, the environment and the ocean

[\(see presentation\)](#)

Geographical scope:

Five Andaman provinces (Phang Nga, Phuket, Krabi, Trang, and Satun)

Lead agency:

Department of Statistics

Outputs:

The pilot study focused on finding solutions to measure sustainable tourism by linking information from SEEA and TSA. Four core accounts, including water, energy, solid waste and GHG emission accounts were built. The pilot also mapped land cover, tourism information and ecosystem information to identify tourism potentials and risk areas and sites for conservation.

Challenges:

Related data was not integrated prior to this project, and there is a lack of market/economic data.

Next steps:

Thailand will continue the pilot by linking to Marine Protected Areas, Marine Ecosystem-Based Management, Marine Spatial Planning (MSP), Ocean Health Index and Blue Economy Initiatives.

Success factors:

This pilot study was successfully linked to policy needs, which would support the decision-making of the Ministry of Tourism and Ministry of Natural Resources.

Recommendations from the pilot team:

The pilot team suggested improving the data-sharing mechanism from the national level and key institutional cooperation. More training or pilot projects on SEEA-CF, SEEA-EEA and other SEEA accounts were required among countries. International organizations related to SDG14 indicators were suggested to be set up as a community to share tools, software, methodology and data.

Discussions and suggestions from the participants:

- Calculate carrying capacity was suggested by the participants.
- The calculation of waste generated by tourism will be documented for other countries as a reference.

7.2.1.5. Viet Nam

Topic:

Land-based pollution, tourism and ecosystem impacts ([see presentation](#))

Geographical scope:

Quang Ninh province

Lead agency:

Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)

Outputs:

By dividing the study area into 7 spatial units, ecosystem extent (mangroves, coral reefs, and seagrasses), ecosystem conditions (pollution), designated use (Marine Protected Area), ecosystem service supply (tourism), and ecosystem service use (ports & shipping density) of the study area were analyzed and mapped. The result showed the reduction in mangroves, seagrasses and coral reefs.

Challenges:

Even though the pilot area was rich in data, the integration of data from different sources (MONRE, MARD, MPI) was not easy. Lack of technical capacity (GIS technology and the methodology to build Ocean Accounts) in the National Office of Statistics was another challenge. Six months was not enough for the study, resulting in the use of secondary data without enough time for surveys.

Next steps:

The pilot team will finalize the study results afterward to give a good example to communicate to key target audiences (e.g. local government, business, community, etc.). Also, using the account to inform policymakers is under consideration.

Success factors:

Selecting the province with rich data as well as getting support from government agencies and the technical team reduced the difficulty of the study.

Discussions and suggestions from the participants:

- Pollution generated by tourism on agriculture and other sectors were suggested to be calculated to compare with those into the ocean.
- The result of the pilot study will contribute to the local government's economy master plan for the next 5 years.
- The issue of marine litter was highlighted by the Viet Nam government, which could also benefit from the pilot study.

7.2.1.6. Canada

Topic:

Test and apply the Ocean Accounts Framework on Marine Economy Accounts (MEA) and Ecosystem Accounts (EA) ([see presentation](#))

Geographical scope:

The whole country

Lead agency:

Fisheries and Oceans Canada and Statistics Canada

Outputs:

The pilot team assessed the data availability and quality for the marine economy and ecosystem. An underlying grid of 1 km hexagons was designed for the mapping. Several ecosystem accounts, including asset extent account, asset condition account, services account, and benefits accounts were designed.

Challenges:

Acquiring, locating and integrating large volumes of spatial data were the main challenges for the project.

Next steps:

The pilot team will continue refining the spatial database by expanding and consistently documenting the inventory, including the source, variables, coverage, etc. of each dataset. The pilot team will try to engage stakeholders by agreeing on priorities, details and contributions once the initial tests occur. Developing a set of fact sheets (perhaps by early 2020) to demonstrate the advantages of integrating ocean-related analysis along a common framework is also under consideration.

Recommendations from the pilot team:

The pilot team suggested reaching an agreement on key parameters both nationally and internationally, which would be extremely helpful as the accounts were developed.

Discussions and suggestions from the participants:

- Time-series data were suggested to be considered for the accounting process.
- Close cooperation between ocean science (e.g. United Nations Decade of Ocean Science for Sustainable Development (2021-2030)) and ocean statistics will be helpful to further work.

7.2.1.7. Australia: Southern NSW

Topic:

Using Ocean Accounts to plan for a Blue Economy at a sub-national scale ([see presentation](#))

Geographical scope:

Southern NSW

Lead agency:

University of Wollongong

Outputs:

The pilot used Ocean Accounts to plan for the Blue Economy at a sub-national scale, which covered not only the production aspect but also the social dimension. Employment and production of the Southern NSW Blue Economy were estimated and mapped. A range of non-used values of the ocean were measured qualitatively by reference to the scope of a social licenses to operate. Social innovation through networks with Southern NSW's Blue Economy is presented on online story maps. Governance objectives across marine sectors revealing areas of policy coherence /incoherence were compared.

Challenges:

Two main challenges in the study were (1) identifying the standard industries which should be included in the Blue Economy and (2) how to get the National Accounts at the sub-national level.

Next steps:

The pilot team will continue with critical reflection on Social & Environmental Accounting (SEA). Frameworks including 1) sociology of worth (economic, civic & environment); 2) integrated reporting (social and environment); and 3) Sustainable Development Goals to will be used to complement the analysis of the Blue Economy.

Discussions and suggestions from the participants:

- The definition of Blue Economy and Ocean Economy was suggested to be discussed and standardized.
- The OECD Sustainable Manufacturing Toolkit was suggested as a reference for the framework.

7.2.2. Related ocean science and assessment activities

Except for the country pilot projects, related ocean science and assessment activities that could contribute to Ocean Accounts were introduced in this section, including the data acquiring technology (remote sensing), international hotspot topics (Blue Carbon), national products on ecosystem accounting and Ocean/Marine/Blue Economy assessment.

7.2.2.1. Coastal Remote Sensing Supports Ocean Accounting

The objective of this [brief](#) was to introduce how remote sensing technology can be used to acquire coastal data for ocean accounting.

It is difficult to access to marine ecosystems by fieldwork for the information of the area, distribution, coverage, height, biomass, community structure, biodiversity, etc. Remote sensing is an efficient way to solve the problem. Satellites, Unmanned Aerial Vehicles (UAV), LIDAR, glider, Autonomous Underwater Vehicles (AUV) and sonar are used to provide remote sensing information. The Chinese delegation presented examples of how mangroves, seagrasses, salt marshes, seaweeds and coral reefs could be mapped and the technologies (e.g. ranging telescope, parallel laser beam, and hyperspectral remote sensing) to acquire biodiversity data were introduced.

Discussions and suggestions from the participants:

- Representation of scientific data in monetary terms (through valuation) could make the former easier to be understood for policymakers.

7.2.2.2. Blue Carbon: Oceanic Natural-based Solutions not Only for Climate Change

This [brief](#) highlighted the importance of Blue Carbon, which is captured by marine living organisms and occupies 55% of all biological carbon in the world. Mangroves, tidal marshes and seagrasses are typical Blue Carbon ecosystems. Overfishing, coastal exploitation, water pollution, etc. result in the rapid loss of Blue Carbon ecosystems. Compared with the terrestrial ecosystem, Blue Carbon ecosystems sequester carbon dioxide (CO₂) from the atmosphere and oceans at significantly higher rates per unit area. Blue Carbon has a

strong connection with UNFCCC & Paris Agreement, Ramsar Convention on Wetlands, CBD, and SDGs. China is working on building a Blue Carbon Standard System to account for Blue Carbon, which could also link with Ocean Accounts. With the financial support from the Paulson Institute, China is collaborating with USA in conserving Blue Carbon.

Discussions and suggestions from the participants:

- Link Ocean Accounts to the potential funds through Blue Carbon

7.2.2.3. Ecosystem Accounting in Port Phillip Bay and Western Port

Geographical scope:

Port Phillip Bay and Western Port, Australia

Lead agency:

Deakin University, the Natural Conservancy and the IDDEA Group

Outputs:

This [study](#) emphasized the importance of building the connection between the environment and the economy to support decision-makers. The study was mapped by spatial units, from which 6 ecosystem types were defined and mapped. The extent of each ecosystem was accounted. The condition of seagrasses was analyzed. Several ecosystem services and benefits including bird watching, recreational fishing, carbon sequestration and coastal protection provided by seagrasses, salt marshes and mangroves were mapped and accounted as well.

Next steps:

The pilot will link to the priorities of the government investments and the incentives that can be provided to change private land management practices. Also, the relationship between terrestrial and marine ecosystems will be studied.

Discussions and suggestions from the participants:

- The definition of the spatial units and the classification of the ecosystems could be used as the basis for wider standardization within Ocean Accounts.
- Interactions among the ecosystem services and assets were suggested to be understood to provide information for decision-makers.
- Subtidal muddy bottom without living species was not suggested as one of the ecosystem types.

7.2.2.4. Measuring the Ocean Economy (The Philippine Experience)

The objective of this [brief](#) was to introduce Philippines experience in measuring the Ocean Economy. Measuring the Ocean Economy in the Philippines was motivated by national policy. The Ocean Economy in the Philippines was clearly defined by 11 industries, including 1) fishing, 2) mining and quarrying, 3) manufacturing, 4) construction, 5) electricity, 6) transportation and storage, 7) financial intermediation, 8) renting and business activities, 9) public administration and defense, 10) education and hotels, 11) accommodations and recreation. The statistical results showed the contribution of the ocean to GDP in 2018 shrank to 3.6% from 4.3% in 2012, while the Ocean Economy in 2018 grew by 7.8%.

Challenges mentioned by the presenter:

- The present compilation of Ocean Accounts did not consider the SEEA and was mainly anchored on the SNA; Ocean ecosystem and ocean assets etc. were not captured yet.
- The identification of industries was not yet fully captured since these industries were developed based on economic activities.
- Data on the ocean were not institutionalized yet.

Recommendations from the presenter:

- Build a common framework for Ocean Accounts, including a separate classification system, concepts, and related ocean variables.
- The review of existing data was necessary as well as a system for data collection.
- Popularize uses and applications to key stakeholders.

Discussions and suggestions from the participants:

- The clear definition of activities (e.g. small scale fishery) and the spatial boundary (e.g. coastal) could be explored further in research.

7.2.2.5. Introduction of Gross Ecosystem Product (GEP) with a case study of Haikou City

This [brief](#) introduced a new concept of Gross Ecosystem Product, which was initiated by China for ecosystem accounting. GEP is the total value of final ecosystem goods and services supplied to human well-being in a given region annually (e.g. a county or province), or a country that calculates provisioning, regulating, and cultural services of the ecosystem. Applications of GEP includes:

- A quantitative indicator for a government officials' performance appraisal and off-office auditing.
- A scientific basis for Payment for Ecosystem Services (PES)/Eco-Compensation and public financial transfers.
- Measuring the status of ecosystem services and the progress of 'Eco-civilization'.
- A universal measure of ecological status by being applied to various countries and regions, and all types of ecosystems.
- GEP had many successful case studies in terrestrial areas of China, although the case study of Haikou City, Hainan Province is the only study in a coastal area. The research team planned to expand further into coastal areas.

Discussions and suggestions from the participants:

- The value of GEP might overtake the value of GDP, and the implications of this require further consideration.
- Value-added instead of value was suggested to consider for GEP calculation.

7.2.2.6. Challenges in estimating ocean accounts: lessons from the Asia-Pacific region (2004-2019)

This [brief](#) reviewed the Ocean Economy related activities in APEC and PEMSEA from 2004 until now. The definition of 'Marine Economy' was defined in an APEC Round Table workshop in 2004 and 9 sectors of the were identified (Oil and gas, fisheries/aquaculture, shipping, defense/ government, marine construction, marine tourism, manufacture, marine services and marine research and education). PEMSEA realized the

importance to take Marine Economy to Blue Economy at around 2013 to 2015. The report by PEMSEA, *State of the Ocean and Coast Reports for the Blue Economy* in East Asia (2015-2018), tried to develop the Blue Economy framework.

Challenges mentioned by the presenter:

The main challenges were among governance and institutions.

- Lack of government's priorities of obtaining Ocean Accounts data and selecting officials in charge of ocean accounts.
- There was no specific department that took the leading role.

Discussions and suggestions from the participants:

- Agreement of a handbook of definitions and classifications were suggested.
- Market value and non-market value were suggested for further discussion in terms of Marine Economy.

7.2.3. Review and refinement of zero draft Technical Guidance on Ocean Accounting

One of the objectives of the Technical Guidance is to solve the technical problems of Ocean Accounts. Problems identified included:

- How to define spatial units?
- How to define a clear classification of ocean ecosystem?
- What are the specific types of existing data that can be used and where do they fit within the ocean accounting framework?
- Practical and specific use cases for Ocean Accounts in decision-making about the ocean economy?

This section suggests approaches to these problems.

7.2.3.1. Overview of the SEEA EEA Revision process

This [brief](#) introduced the revision process of SEEA-EEA. The process started in March 2018 with the approval from the U.N. Statistical Commission and aim to finish by the end of 2020 as well as be endorsed in March 2021. There are 4 working groups trying to resolve the conceptual issues including spatial units, ecosystem conditions, services, and valuation.

Discussions and suggestions from the participants:

- Should Ocean Accounts be integrated into the process of the SEEA revision?
 - In what way? To propose them as a thematic account? Or as an integrated, manual similar to the Agriculture, Fisheries and Forestry handbook? As underlying information to the overall ecosystem accounts
- There is a need to link SEEA to the marine spatial community.
- SEEA provides the guidance of how to create tables based on different needs, and does not provide sufficiently detailed template tables.

7.2.3.2. Global Ocean Data Inventory

The objective of this [brief](#) was to introduce the existing global ocean databases that can be used for ocean accounting. In this inventory, 138 global ocean databases were included. The inventory organized the databases by SEEA-related components, including spatial units, ocean extent, use (designated), ocean condition, ocean asset, ocean service supply, and ocean service use. The information on data format, the status of the database, acquisition method, data resolution, themes of available data, and website links were provided in the inventory. The inventory will be accessible for the spreadsheet and text format. A platform for the accessible inventory and user guidance were considered in the next steps.

Discussions and suggestions from the participants:

- Integrate databases into one platform by the United Nations to help countries have easy access to the data was suggested.
- Providing guidance for statisticians to use scientific data was recommended.

7.2.3.3. Mapping Ocean Ecosystems — a “land cover map” for the ocean

This [brief](#) introduced a feasibility study on mapping global ocean ecosystems by explaining the importance of the classification of ocean ecosystems, reviewing the existing research related to ecosystem classification and recommending the possible databases. Compared with *Large Marine Ecosystems*, *Marine Ecoregions of the World*, and *Ecological Marine Units, Coastal and Marine Ecological Classification Standard (CMECS)* was recommended to classify the global ocean ecosystems due to its systematic and flexible framework, data-friendly feature and successful application in the past.

Discussions and suggestions from the participants:

- International Oceanographic Data and Information Exchange (IODE) is a data platform provided by UNESCO/IOC, which could be a reference.

7.2.3.4. IUCN Global Ecosystem Typology

This [brief](#) introduced IUCN's classification of the global ecosystem by typology. This classification followed a hierarchical structure, including realms, biomes, functional groups, biogeographic ecotypes, ecosystem types and local ecosystem types. 102 functional groups across 4 realms and their transitions were designed, among which 23 were specially for marine and 7 were transitional.

This project will go forward by developing global ecosystem typology web site, using high-resolution maps to improve the data quality, defining links (cross-walks) with established national classifications, assessing the risk of global ecosystem risk assessment (terrestrial) and linking ecosystem risk assessments with the supply of ecosystem services & natural capital accounts

Discussions and suggestions from the participants:

- Using IUCN classification together with classifications produced by other organizations was suggested.

7.2.3.5. 5 Components in Building an Ocean Economy Account

The [brief](#) introduced that Ocean Accounts were first created 17 years ago and improved accounts have been developed more recently. People who will use the accounts do not know how to use them until they have them was a common issue.

Five key components to build an Ocean Economy Account were identified, including:

- Economic composition (economic activities that considered within ocean accounts)
- Geographic Boundaries
- Measures
 - The difference between Gross Output and Gross Value Added as well as the difference between intermediate and final goods was supposed to be considered within the measurements of Ocean Accounts.
 - Disaggregation from the national level and aggregation from the individual level were solutions to get Ocean Accounts.
- Confidentiality
- Comparability
 - There were three dimensions of comparability: over time, within the nation and across nations.

The potential of Ocean Accounts to improve the wider national statistical system was emphasized, for example by tackling measurement of the wider economic and other implications of “Blue Technology”.

Recommendations from the presenter:

- The users were supposed to make a decision to decide the geographic boundaries of their accounts, e.g. whether to include great lakes and estuary economy in the marine economy.
- Net Ocean Product was suggested to calculate instead of Gross Ocean Product.
- Aggregating data by doing surveys was recommended but limited by human resources. Using existing Data to start with individual establishments separated by ocean relationship (industry/geography) was also recommended.
- The more detail you want the less you can show. Ways to deal with confidentiality were ‘living with it’, imputation, and data anonymisation.
- Feel fine to be different when compared with other's accounts as long as the account can be explained.

Discussions and suggestions from the participants:

- There was no necessity to wait for specific categories but start the work with existing data.
- Tourism was included in the recreation.
- Treat ocean economy accounts as satellite accounts.

7.2.3.6. Ocean (Coastal/Marine) Accounts for Zanzibar

This [brief](#) introduced a case study of using Ocean Accounts to provide information for ocean-related industry in Zanzibar. The study tried to use Ocean Accounts to understand

- What were the economic (dis)incentives for sustainable use?
- How can blue natural capital improve the lives of poor households?

- How to reduce conflicts among users of marine natural capital, particularly beach access (e.g. example, tourism, fishing and seaweed farming)?

Challenges mentioned by the presenter:

- Many lessons were drawn, but many were discarded. For example, the expansion of aquaculture and the wrong type of tourism.
- Critical data missing (e.g. wastewater and pollution and solid waste management).

Recommendations from the presentation:

- With more spatial information available to improve ocean accounts, it is important to link activities to ocean health.
- Ocean Accounts don't need to include everything, but can link to other information that links to social and cultural impacts.

Discussions and suggestions from the participants:

- The ways to scale up to a national level.
- The importance of enlisting the stakeholders that are interested in the outcome.

7.3. Using Ocean Accounts

Informed by a diverse range of presentations, discussions in this section followed a trajectory designed to identify what policymakers and other users of Ocean Accounts need to support the use of Ocean Accounts in practice. Discussions evolved through participants' consideration of:

- Upcoming decisions and policy processes related to oceans in their own country/domain.
- Key questions for which answers are needed to support these decisions and policy processes.
- Information currently used to respond to these questions and inform these decisions/policy processes.
- Gaps in information and data relevant to these decisions/processes.
- Information needed in the Technical Guidance to support the use of Ocean Accounts to inform these decisions/processes.

7.3.1. Raising awareness and explaining the utility and use cases for Ocean Accounts

From the using perspective, this section raised the awareness of Ocean Accounts and explained the need to use Ocean Accounts to solve the problem (Australia and Africa as examples). How to link Ocean Accounts to ocean policy was also discussed.

7.3.1.1. Discussion on expected outputs from the Global Dialogue

Participants shared what they would like to get out of participating in Stream B and in the Global Dialogue. Key themes that emerged from the discussion were:

- Understanding how Ocean Accounts work
- Identifying narratives that support the use of ocean accounts
- Using Ocean Accounts in policy applications – immediate and general

- Especially how Ocean Accounts can be integrated into national planning
- Identify opportunities for regional and global coordination and cooperation
- Understanding how Ocean Accounts and other ocean governance mechanisms and regulatory techniques (e.g. MSP) relate to and interact with each other
- How to institutionalise Ocean Accounts and attract support and financial investment
- Prioritising uses for Ocean Accounts and decision-making processes in which they could be applied

7.3.1.2. Ocean Accounts 101

This brief introduced how do Ocean Accounts work as well as the overview of the information communicated by ocean accounts. Information covered:

- Means (how big is the ocean economy?)
- Ends (what is the ocean economy achieving?)
- Sustainability (what is overall ocean wealth and how is it changing?)

7.3.1.3. Needs case for Ocean Accounts in Australia

This [brief](#) introduced examples of work by Australian governments on environmental-economic accounting, including a national strategy on environmental-economic accounting agreed by the federal government and all states and territories in 2018. The Australian government worked with a diverse range of stakeholders both in the delivery of the project and also through the governance mechanisms for the environmental accounts strategy. Working on Ocean Accounts supported as part of Australia’s participation in the High-Level Panel for a Sustainable Ocean Economy.

Key questions/discussion covered:

- Drivers for the government to undertake ocean accounting
 - Ocean accounting is a critical piece of work and there is a role for the federal government to coordinate
 - Commitment from all jurisdictions, the importance of champions for ocean accounts could be used to convince politicians of the benefits of the project
- Policy coordination and consultation
 - The accounts will fit into the High-Level Panel the Blue Paper
 - Public consultation on the national strategy and the development of individual accounts are important
 - Who is assigned responsibility for different parts of the work still being determined.
- Details regarding proposed oceans account pilot project
 - The scale of the proposed pilot (small, location not yet determined, interested in tourism, natural assets present in marine parks, ecosystem services including carbon sequestration, will draw on existing methodologies)

7.3.1.4. The need for Ocean Accounts in Africa

This [brief](#) introduced the need for Ocean Accounts in Africa by emphasizing the term “blue economy”, which incorporates concepts of sustainability, inclusivity and equity within the framework (and this term is not necessarily interchangeable with “ocean economy”).

There is a strong interest in blue economy development in the African region, including a range of initiatives at the national and regional scale; however, almost nothing has been done regarding ocean accounts.

Ocean Accounts are needed to enable informed decision-making and strategy-making, to manage ocean change, to help integrate new data and identify data gaps, to create broader ways of valuing the ocean, and to help justify the value of research, management and policy for oceans.

Key questions/discussion covered:

- Measurement tools including ocean health index, tools developed by IUCN, etc. were suggested to score the quality of an ecosystem.

7.3.1.5. Discussion on linking Ocean Accounts to ocean policy

Participants discussed two questions in small groups:

- 1) What major decision-making processes exist in your country related to oceans over the next 12 months? What kinds of decisions are senior officials in your country going to be making about oceans? Identify three important processes.
- 2) For each of these processes: what questions about the ocean economy or ocean environment do we need to answer in those processes? (e.g. if looking at marine protected areas, the question might be: which areas to we protect and why?) What might a senior decision-maker ask you in order to make the decision?

Responses to question 1) included: national mangrove restoration plan, protection of wetlands and mangroves, national strategy for plastic pollution, MSP (including MSP legislation), coral replanting, beach area clean up, decisions and regulations for fisheries management, development of ocean policy. Participants also discussed major drivers across all areas of policy, such as the exposure of small-scale fishing communities to disasters, integrated coastal management planning, creation of alternative livelihoods and water pollution.

Responses to question 2 were varied, and can be broadly grouped into four themes/question clusters:

- a) Status of the ecosystem and ocean economy: What are the ecosystem services produced by an environmental asset? What is the condition of environmental assets? What are the sources and impacts of pollution (e.g. plastic)? What are the risks from industrial activities? What kind of disaster risks are ecosystems and dependent economies exposed to?
- b) Benefits and costs of policy responses: What are the benefits of the policy/proposal? What will it cost to implement? What are the costs of not doing it (e.g. degradation of the environment, losses from disasters, etc.)? What are the growth opportunities? How can the policy produce value for money?
- c) Competing demands: How do we resolve conflicts between sectors? What are the trade-offs and how do we manage them? How do we prioritise competing environmental, economic and social objectives? What are the implications of a loss of industry (e.g. fishing) or ecosystem (e.g. mangroves)?
- d) Measuring success: What are the goals and targets for the policy/proposal? Are we achieving our policy objectives? Are we meeting competing demands? Is our current activity/proposed future activity sustainable?

In subsequent small group discussion, each group was asked to identify which data would be used to answer these types of questions, and to identify the gaps in the data necessary to respond to these questions.

Sources of data identified included:

- Government sources, including provincial data, scientific information from government oceanography monitoring centres and environmental impact assessments.
- Marine Spatial Planning

Missing pieces included:

- The people's perspectives (public consultation)
- Outcomes of previous projects
- Quantification of economic and social benefits from projects
- Information about contextual factors that contribute to the success of a project (to inform attempts to replicate projects in different contexts)

Important challenges identified included:

- Difficulties (especially in resourcing and skills/capacity) in conducting research assessments of ocean environments and marine resources.
- Integrating the 3-dimensional ocean space into a traditionally 2-dimensional format in marine spatial planning
- Clearly identifying what the questions are that the information needs to answer and what the objectives of the analysis are, to ensure the framework is put to best use in managing the tradeoffs

7.3.2. Identification of policy use cases for Ocean Accounts and key policy questions for Ocean Accounts

This section presented the existing ocean-related policy in different countries that could be identified as the use case for the implementation of Ocean Accounts. The importance of carefully choosing targeted actions to identify policy use cases was highlighted. The difference in the resources, information and skills available to developing and developed countries was emphasized.

7.3.2.1. Conservation makes good economic sense: 'eco-civilisation' and biodiversity in the oceans

This [brief](#) introduced how to use Ocean Accounts from a conservation perspective.

In China, natural capital and increasingly marine protection were embedded in policy at the highest level – in the words of the President, and in the 13th 5-year plan. Ocean Accounts can demonstrate that there were many considerations beyond those traditionally considered in policy (income, jobs) that should be considered in decision-making, such as the categories of ecosystem services identified in the Millennium Ecosystem Assessment. Any estimate of the value of ecosystem services was almost certainly an underestimate, because there was still a lot we don't know about ecosystem services.

Key recommendations:

- We need measures other than GDP; economists and businesses should advocate for strong accountability for comprehensive accounts, and counter false economic claims.
- Business needs to change, including paying the full cost of externalities.

7.3.2.2. Hazard Mapping Ocean Risk of Tsunami and Flood: Case of Southern Hokkaido

This [brief](#) introduced a case study on the use of hazard mapping to understand the risk of tsunami and flooding in the coastal city of Hakodate.

Hakodate (Hokkaido, Japan) has important blue economy sectors, including fishing and recreation, and is highly exposed to tsunami risk (in 2011 a tsunami caused 2 metres of flooding and losses of US\$12 million).

The methodology employed a GIS hazard map, input-output analysis, a recursive CGE model to identify vulnerabilities and the time needed to recover, and steps to identify the policy implications

The study demonstrated that :

- Fishery and squid sectors were extremely vulnerable, and it would be important to have mechanisms in place to ensure the quickest possible recovery;
- The food processing sector will require support to recover, but will have a positive flow on effects;
- Construction measures in advance to reduce damage should be assessed against possible losses from a tsunami.

7.3.2.3. Policy and institutional context relevant to Ocean Accounts in Sri Lanka

This [brief](#) introduced policy and institutional context in Sri Lanka, especially in the fisheries.

The ocean is critical for nutrition, with fish providing 70% of the animal protein for the population, and 1.5 million people are employed in ocean-based sectors. Key industries include fish export, leisure and tourism linked to the ocean. Marine pollution, overfishing and poaching are critical problems.

Sri Lanka has a national plan of action for IUU fishing and had 1500 transponders to monitor fishing vessels in the high seas, as well as e-logbooks and boat inspections also to reduce pollution, and is reducing the number of vessels in its fleet (replacing with bigger vessels).

There is some support for ocean accounts, including from donors, and some similar work had been done though not using the terminology of ocean accounts. Constraints include fragmented governance and information and a lack of skilled personnel and funding.

Discussion: following the three presentations, questions and discussion focused on the pathway to impact, including challenging the dominance of GDP, and engaging with politicians through different avenues, including by working with businesses, media and the public.

7.3.2.4. Development of a National Oceans Policy in Timor-Leste

This [brief](#) introduced Timor Leste's development of a National Oceans Policy, including a vision and priorities identified over 5 years. The National Oceans Policy Implementation Plan 2020-24 is currently under development. A National State of the Oceans and Coasts report recommended the development of Ocean Accounts for Timor Leste. Maritime boundaries and climate change adaptation and resilience are key issues in the development of the National Oceans policy, among several others.

7.3.2.5. The evolving ocean economy in Bangladesh

This [brief](#) introduced the evolving ocean economy in Bangladesh. Principal activities include fishing, shipbuilding and ship recycling and seaports. The needs for the country include

- Improve marine fishery governance - bans on fishing for juveniles and mothers and in the Bay of Bengal are currently in place for designated periods of each year.
- Coastal tourism is not at all developed, and there are also many opportunities in biotechnology.
- Climate change is a critical issue for Bangladesh; in particular mangrove forests are important for both carbon sequestration and buffering inundation.

7.3.3. Review and refinement of zero draft Technical Guidance on Ocean Accounting

From the using perspective to improve Technical Guidance, how to use the results from Ocean Accounts for policy implementation and governance, how to link Ocean Accounts to big data and modelling, and what is the optimal way to show Ocean Accounts data were discussed in this section.

7.3.3.1. Technical Guidance on Oceans Accounts

This brief introduced Technical Guidance from the using perspective.

- Ocean Accounts are a collection of information presented within a particular structure (outlined in the Technical Guidance) and consistent with international standards (SNA and SEEA).
- The tables outlined in the guidance describe environmental assets, flow to the economy, flows of material from the economy back to the environment, and economic activity related to oceans.
- There is also an experimental section of the accounts describing governance – this is new and therefore not derived from established methods.
- Two summary tables report stocks of assets underpinning the ocean economy (both produced and non-produced assets) and ocean wealth (reflecting benefits and costs related to the ocean).

Key points raised in questions/discussion:

- Ocean Accounts is not trying to reinvent the system, but rather using tools that are already available.
- Although some values are very difficult to calculate and agreement from the global community about a way to do this is needed, Ocean Accounts provides a structure for this information.
- Summary tables help to tell the story, but there are arguments to say we should be thinking about more dynamic ways to tell the story than reporting in tables – we need to balance respect for existing method and finding new and powerful ways to communicate.
- Discussion of growth *and* wealth through Ocean Accounts is one way of trying to shift the focus away from GDP only.
- Accounting reports information from the past (up to the present) but it can be used to inform scenarios and modelling for the future.
- How to account for straddling or migratory fish stocks in national ocean accounts
- Everyone is welcome to contribute to the Technical Guidance, and it has been put together on the basis of voluntary expert contributions.

7.3.3.2. Discussion on Technical Guidance

Participants were asked to come up with five things to improve the Technical Guidance in small groups; this included considering both long-term improvements to the Technical Guidance and short-term changes to be made over the coming 2-3 weeks.

Suggestions for strengthening the Technical Guidance (with a focus on policy use) include:

- Needs to be iterative and adaptable, able to be regularly updated.
- In the discussion of benefit and cost it should provide guidance about the depreciation of assets, measuring damage done and identifying how to compensate damage going forward.
- It should allow for users to learn from one another, through case studies (including from pilot projects in different countries) and sharing lessons learned.
- It could support a regional 'rest-of-the-world' account which would promote accountability regarding the high seas. A regional body could monitor progress.
- It should note the importance of sharing databases within countries and regionally, and using accounts proactively to identify areas where assistance is needed to fill data gaps (so that big projects can assist in useful ways where need is clearly identified).
- There should be a separate and complementary document to the Technical Guidance specifically targeted at policy users to support uptake of oceans accounts. It should include ways Ocean Accounts can help with decision-making in both the long and short term; a checklist of data gaps to respond to long term needs; advice for implementation; and reasons for adopting ocean accounts.
- There should be specific guidance for policymakers, and for analysis, and for the technical components, focused on key messages.
- Indicators must come from accounts (accounts are not indicators in themselves) – there is debate over whether this should be a single indicator or multiple.
- It should include an outline of common problems and ways to approach solving them, including how using accounts could help.

7.3.3.3. Policy uses for ocean accounts

This [brief](#) introduced how to use natural capital accounting for ocean policy and management.

- Accounts are part of an information system and can be used at all stages of the policy cycle, including issue identification, policy design and monitoring and review. Institutional arrangements, strategic identification of users and developers and intended applications of accounts all influence the use of accounts, and transdisciplinarity is essential.
- Accounts help to identify data gaps, increases the profile of accounts, and improves the authority of information (it is produced by trusted sources); they allow people to look at relationships, understand trade-offs and get beyond simplistic discussions; they could also help us recognise limits to sustainability.
- There are several excellent examples of ocean accounts, including the UK accounts and the Australian accounts for the Great Barrier Reef.

Key recommendations:

- The real investment is needed in the system, not just voluntary expert contributions made in spare time.

- It is important to promote connections between users and producers; support education about accounts including through higher education providers; develop data quality processes; and potentially hold a policy forum to discuss and produce publications about how accounts have been used to consolidate shared experiences.

7.3.3.4. Marine pollution in Sri Lanka

This [brief](#) introduced the policy for the reduction of marine pollution in Sri Lanka. Land-based pollution has been identified as a critical issue. Sri Lanka has a vision for a pollution-free marine environment and is working on a number of initiatives to achieve this. The existing policy provides the opportunities for Sri Lanka to have pollution free coastal line, the development of eco-tourism and to enhance bio-diversity. However, there are also challenges, including the scarcity of land, the difficulty to change farming pattern, and the influence of business-oriented firms.

7.3.3.5. Big Data, Big Opportunity

This [brief](#) introduced how Ocean Accounts can fit big science and how big data can help Ocean Accounts. Big data and big science can be used to populate Ocean Accounts in a very powerful way. There is a lot of existing data that could be fed into ocean accounts, and there are many different ocean variables that big data plays a role in identifying and validating. Models can be used to build accounts; they are complementary rather than in competition with accounts.

Ocean Accounts could provide the mechanism for sharing the results of big science projects more widely than in academic journals.

The Sustainable Oceans, Livelihoods and food Security Through Increased Capacity in Ecosystem research in the Western Indian Ocean (SOLSTICE) project uses a wide variety of data, including biophysical information and social indicators. In particular, it is examining climate change impacts at a regional level, drawing exposure and sensitivity information from available data.

7.3.3.6. The Palau National Marine Sanctuary

This [brief](#) introduced the creation of the Palau National Marine Sanctuary as well as how Ocean Accounts can support it. This law reserves 80% of Palau's EEZ for a marine sanctuary, with the remaining 20% converting to a domestic pelagic fishery. The primary aim of this approach is to build an ocean economy that is more beneficial for the people of Palau, rather than benefits flowing to international organisations outside Palau. This includes developing a local fishery to improve food security (high reliance on fish) and reduce overfishing on the reef; and aiming to attract more environmentally and culturally conscious tourism.

Ocean Accounts will help to communicate with the public about the benefits of the marine sanctuary and the diversity of Palau's EEZ. Ocean Accounts will also help the data collection and measurement to understand if conditions are improving for the people of Palau. The National Marine Sanctuary, as a current priority for the government, provides an opportunity to advance Ocean Accounts.

7.3.3.7. Modelling and ocean accounts

This [brief](#) introduced the potential uses of modelling in Ocean Accounts, including how they can be useful for addressing data gaps, how to integrate them, and how to use modelling to make projections. A model is,

broadly, any qualitative or quantitative approach that can be used in the absence of data, either for interpolation (finding information between data points) or extrapolation (looking outside the scope of the data). Models can be used to understand interactions and cumulative impact within an ocean environment. They can also be used for projections by applying the information to the most plausible scenarios for the future. A model can pull together all sorts of different data from different sources. The data do not all have to be collected in one place, but they need to be interoperable through the model.

There are many models currently available and in use, used for example in fisheries evaluation, adaptive management, report cards on physical and economic data, and support for real-time decisions in operational management.

Models can be very useful for ocean accounting; there is a great variety available and they are mostly free to use (although training to use them is necessary). When compiling oceans accounts it would be useful to also think about what data could be used in models and collect this too.

Key recommendations:

- Examine and adapt Report Card Formats to Ocean Accounts
- Consider data collation /monitoring within a modelling framework
- Establish Regional Parameter Library –model agnostic
- Embed models within information platforms
- Access open source regional models, engage modelling community and provide regional/local capacity building

7.3.3.8. Dashboards for ocean accounts

This [brief](#) introduced the implementable, transferable, dynamic and scalable dashboards to communicate ocean accounts. The advantages of using a dashboard include

- A dashboard can be a flexible tool that can read live data, modify which factors are included in calculations to show the information that is of specific interest, drill down into specific sectors, examine value over time, show individual accounts, display non-market values (or lack thereof), and use incomplete data if necessary.
- A dashboard doesn't take many resources to create because it leverages existing data and available software.
- Dashboards take information that we already have and organise it so that we can see what is important, ask questions of the data and expose gaps more easily. It makes the information more real and dynamic for policymakers and relevant in real-time.
- One of the biggest contributions of a dashboard is that it leaves policy decisions about what to include in an account or calculation or indicator to policymakers, it doesn't require the statistician to choose what information to present in a static table.

Key recommendations:

- There should be at least 3 national indicators, one each for means, ends and sustainability – this will greatly improve on the use of only GDP.

7.3.3.9. Discussion on take-home messages and reflections

Participants considered their take-home messages from Steam B and reflections on the Global Dialogue. Key points raised in the report-back included:

- Communicating the usefulness of oceans accounts:
 - There is a high level of support for Ocean Accounts to assist decision-making and an opportunity to benefit from this integrated framework. The usefulness of Ocean Accounts is widely recognised by the group.
 - It is important to convince politicians of the need for ocean accounts.
 - The private sector can be encouraged to contribute to building Ocean Accounts by gathering and sharing data, they will benefit from Ocean Accounts too in terms of demonstrating their positive environmental impact.
- Learning how to use ocean accounts
 - A key challenge is finding more examples of where this has worked, and to widen the GOAP partnership. There is support for a mechanism to share stories and troubleshoot between countries. This could be a practical tool that could help fix problems and provide a practical approach to selling Ocean Accounts to colleagues and decision-makers.
 - Pilot projects and case studies demonstrate how useful oceans accounts are even if they are incomplete.
 - For participants who aren't accountants or statisticians, Technical Guidance is too complicated.
 - We need a separate guidance document for policymakers.
 - There are practical difficulties in some countries in implementing Ocean Accounts – it is difficult to persuade decision-makers whose main priority is the economy. It is important to encourage businesses and organisations to push governments to recognise the importance of the marine economy and the need to act.
 - Ocean systems are very complex, and there is a need for more than one indicator.
 - Uptake of accounts is critical – at the moment few people know or care about them, we need to encourage politicians, policymakers, media and public to use them.
- Data for ocean accounts
 - Data is critical and it is difficult to get good quality and sufficient quantity of data. It can take a long time to access the right level of data, and it makes take several years to successfully build accounts. Capacity building is also necessary and important.
 - Challenges around data are often institutional rather than technical – it is important to cooperate and share data.
 - Lack of data is not a barrier to creating tools, any data can be used to populate a tool, and this can be a useful way of convincing decision-makers of the need for more information and for accounts.

7.4. Planning of actions and contributions for 2020

This was a joint session of Building and Using Ocean Accounts. During this session, all the participants (except those who joined the GOAP administrative meeting) were divided by groups that mixed different countries and organizations to discuss suggestions for actions to make progress on the Ocean Accounts within the next

year. A detailed outline of these suggested actions is included in **Annex 4**. Key actions recommended by delegates in the short term included:

- Building political motivation and leadership — through targeted engagement with specific policymakers
- Development of Ocean Accounts and multiple nested scales — including national, regional and global
- Establishment of communities of practice — including via the Global Ocean Accounts Partnership
- Access to financial and capacity support from the international development community
- Extension of current pilot projects, and support for more pilot projects
- Action to address specific technical and data issues — including sharing, interconnection and standardisation of data
- Continued development of technical guidance on Ocean Accounting and best practice examples
- Establishment of regional and global institutional commitments and partnerships — connected by the GOAP
- National policy and institutional reforms to enable ocean accounting
- Outreach and awareness concerning Ocean Accounts

8. Demonstration: ESCAP Pacific Ocean Accounting Portal

ESCAP [Pacific Ocean Account Portal](#) is a complement for Pacific Community's 14 National Environmental Data Portals for Pacific Islands countries by focusing on Sustainable Development Goals for water and bring in capacity building. Instead of integration data, this portal brings GIS experts and accounting experts together. By using ArcGIS Online and Esri Hub Technology, this portal integrated statistical inputs from 26 databases together with spatial information. Based on SEDA, this portal displays investment (ecosystem protection, rehabilitation, restoration & governance), capital (Ecosystem condition) and benefits (from the ecosystem services e.g. fishing, tourism) in story maps.

The challenges to build this portal including:

- integrating data with different data types, spatial units, custodians and nomenclature.
- integrating people with skills, tools and languages.

This portal was built to reach countries and awareness to take action for the ocean.

Discussions and suggestions from the participants:

- The idea of the portal brings “leave no one behind” to “leave no where behind”.
- The portal hasn't shared the information with other regional commissions but will start step by step.
- Reach to UN-GGIM for more communication.
- Attention to help developing countries in Indian ocean area to make Ocean Accounts.
- The portal is not specific for Pacific area but for the Pacific ocean. The data is available for other areas due to the integrated global data in this portal.

9. High-Level Policy Dialogue

Discussions during this confidential session focused on exploring inter-governmental collaboration options for expanding implementation and use of Ocean Accounts in the wider context of ongoing policy and

institutional reforms and commitments related to sustainable development, the ocean economy and the blue economy.

10. First administrative meeting of the Global Ocean Accounts Partnership

Current GOAP Members agreed a series of action items including the following:

- Ongoing iterative publication of the GOAP Technical Guidance on Ocean Accounting, with a “Glossy” Version 1.0 scheduled for release in 2020 prior to the 2nd Global Dialogue.
- Specific actions to raise the profile of Ocean Accounting in relevant UN institutions and other international institutions.
- Specific actions to support development of regional communities of practice beyond the Asia-Pacific region, with Africa identified as priority region.
- Development of a policy indicator framework to certify and review progress towards the adoption of Ocean Accounts.
- Development of an interim set of rules and standards for GOAP membership, supplementing the current Terms of Reference.
- Formal invitations to join the GOAP to be extended to all governments represented at the Global Dialogue, apart from those who are already members or who have already received a formal invitation.

Current Members also appointed Co-Chairs and a Partnership Secretariat for 2020 (see below).

Since establishment of the GOAP in June 2019, 8 member institutions have completed the formal membership process: ESCAP, UNSW, Australian National Centre for Ocean Resources and Security, Cape Peninsula University of Technology South Africa, Fisheries and Oceans Canada, ISPONRE Vietnam, University of Ottawa (uOttawa), and The UK’s Department for Environment, Food and Rural Affairs (Defra). The World Bank and several additional institutions will become formal members of the Partnership after the relevant procedures are completed.

11. Concluding statements

11.1. Statements from GOAP Co-Chairs

Ms. Gemma Van Halderen on behalf of ESCAP, and Dr. Michael Bordt on behalf of the Fisheries and Oceans Canada and the University of Ottawa, made statements in their capacity as appointed Co-Chairs of the GOAP.

Dr. Ben Milligan made a statement in his capacity as appointed Secretariat Director of the Partnership. The Secretariat will be located at the University of New South Wales, hosted by the Institute for Global Development and Global Water Institute.

All governments represented at the Dialogue were invited to become members of the GOAP, with the Secretariat to send appropriate correspondence in due course. Information about the Ocean Accounts-related events can be found on <https://www.oceanaccounts.org/>.

11.2. Plenary announcement of actions

Participants from different countries and organizations made their announcement on the actions on behalf of the government, organizations or themselves for the next year. These announcements included actions to:

- Raise awareness of Ocean Accounts to the country, including scientists, statisticians, politicians and others.
- Start / continue/ expand / engagement in Ocean Accounts.
- Accept an invitation to formally join the Global Ocean Accounts Partnership.
- Built an integrated data system for Ocean Accounts.
- Link Ocean Accounts to SDGs at a national level.
- Integrate Ocean Accounts to national development plans.
- Request ESCAP and GOAP for technical assistance.
- Attend the second dialogue.

11.3. Invitation to 2020 Global Dialogue on Ocean Accounting

The second Annual Meeting of the Global Ocean Accounts Partnership will be hosted by Fishery and Oceans Canada and Statistics Canada in Ottawa in October 2020.

12. Annex 1: Agenda of the Global Dialogue

Global Dialogue on Ocean Accounting 12–15 November 2019
UNSW Sydney, Australia.

Time	Session	Details	Item	Speakers
Day 1 – Tuesday 12 November				
9:00 – 10:30	Plenary Welcome [Leighton Hall]	Welcome from the Global Ocean Accounts Partnership and Welcome to Country		– Ben Milligan, GOAP Co-chair – Michael Bordt, GOAP Co-chair – Welcome to Country Representative
		Welcome from UNSW, ESCAP, UN Statistics Division		– Emma Johnston, Dean of Science University of New South Wales – Gemma Van Halderen, Director, Statistics Division, ESCAP – Stefan Schweinfest (video welcome), Director, United Nations Statistics Division
		Plenary panel discussion: what are Ocean Accounts and why are they important?		Chair: Ben Milligan, UNSW Panelists: – Russell Reichelt, Australia Department of the Environment and Energy (DoEE) – Gemma Van Halderen, ESCAP – Glenn-Marie Lange, World Bank – Tony Harrison Tevi, Department of Foreign Affairs and International Cooperation, Vanuatu (TBC) – Emma Johnston, Dean of Science, UNSW
11:00 – 11:30	Break and group photo, welcome from UNSW colleagues			
11:30 – 12:30	Plenary Briefing [Leighton Hall]	Introduction to the high-level policy context for Ocean Accounts		– Ben Milligan, UNSW
		Introduction to the GOAP Technical Guidance on Ocean Accounts		– Michael Bordt, GOAP Co-Chair
		Introduction to Ocean Accounts pilot projects		– Teerapong Praphotjanaporn, Statistics Division, ESCAP
12:30–17:00 Lunch from 13:30–15:00	Concurrent Working Session [Leighton Hall]	Room A: Building Ocean Accounts: presentation and feedback session for country pilot projects, including ocean science and assessment activities	PILOT 1A	Chair: Teerapong Praphotjanaporn, ESCAP Presenters: – China – Malaysia – Samoa – Thailand – Viet Nam
12:30–17:00 Lunch from 13:30–15:00	Concurrent Working Session [The Galleries]	Room B: Using Ocean Accounts: raising awareness and explaining the utility and use cases for Ocean Accounts	PILOT 1B	Chair: Ben Milligan, UNSW Presenters: – Ken Findlay, Cape Peninsula University of Technology, Africa – Crystal Bradley, DoEE, Australia – Fredrick Kuelinad, Papua New Guinea – Thaug Kyaing, Myanmar (TBC)

				– Vanuatu (TBC)
Day 2 – Wednesday 13 November				
9:00 – 11:00	Plenary Report Back and Reflection [Leighton Hall]	Report back from Rooms A and B and plenary discussion		Plenary: Ben Milligan PILOT 1A: Teerapong Praphotjanaporn PILOT 1B: Rikke Munk Hansen
		Plenary panel discussion: the contribution of Ocean Accounts to developing a sustainable ocean economy		Chair: Michael Bordt, GOAP Co-Chair Panelists: – Glenn-Marie Lange, World Bank – Mario Cabral, PEMSEA, Timor-Leste – Charles Colgan, Middlebury Institute of International Studies – Gemma Van Halderen, ESCAP – Alistair McIlgorm, University of Wollongong (TBC) – Vivian Ilarina, Philippine Statistics Authority (TBC) – Enayet Karim, Global Economist Forum (TBC) – Katesaraporn Wimonrat, Ministry of Tourism and Sports, Thailand (TBC) – ZHENG Peng, DaLian Ocean University (TBC) – Nelson Shem, Department of Finance, Vanuatu (TBC)
		Introduction to Day 2 summary objectives and housekeeping		– Ben Milligan, UNSW
11:00 – 11:30	Break			
11:30 – 13:30	Concurrent Working Sessions	High-Level Policy Dialogue: identification of intergovernmental collaboration options for Ocean Accounts, informed by recommendations emerging from the High-Level Panel on a Sustainable Ocean Economy.		Closed meeting (by invitation only) [Leighton Hall Mezzanine Level]
	Room A [Leighton Hall]	Room A: Building Ocean Accounts: presentation and feedback session for country pilot projects, including ocean science and assessment activities.	PILOT 2A	Chair: Michael Vardon, Australia National University Presenters: – Canada Ocean Accounts Pilot, Keldi Forbes, Fisheries and Oceans Canada; Francois Soulard, Statistics Canada – Coastal Remote Sensing Supports Ocean Accounting, Prof. ZUO Ping, Nanjing University – Blue Carbon: Oceanic Natural-based Solutions not Only for Climate Change, Dr. ZHAO Peng, Fourth Institute of Oceanography, China – Port Phillip Bay Pilot, Reiss Mcleod, IDEEA Group

				– Philippines experience Ocean Economy, Vivian Ilarina, Philippine Statistics Authority
	Room B [Hong Kong Alumni Room]	Room B: Using Ocean Accounts: identification of policy use cases for Ocean Accounts and key policy questions for Ocean Accounts.	PILOT 2B	Chair: Zak Baillie, Australia DoEE Presenters: – WWF Perspective, Laurence McCook – Hazard mapping ocean risk of Tsunami and Flood, Michael Huang, Graduate Institute for Policy Studies, Japan – Bangladesh Perspective, Rear Admiral (Retd.) Mohammad Khurshed Alam – Sri Lanka Perspective, Pakeer Mohideen Amza
13:30 – 15:00	Lunch			
15:00 – 17:00	Concurrent Working Sessions	High-Level Policy Dialogue: identification of intergovernmental collaboration options for Ocean Accounts, informed by recommendations emerging from the High-Level Panel on a Sustainable Ocean Economy.		Closed meeting (by invitation only) [Leighton Hall Mezzanine Level]
	Room A [Leighton Hall]	Room A: Building Ocean Accounts: presentation and feedback session for country pilot projects, including ocean science and assessment activities.	PILOT 3A	Chair: Vivian Ilarina, Philippine Statistics Authority Presenters: – NSW Marine Economy pilot, Michelle Voyer, University of Wollongong, Shanaka Herath (UTS), Stephanie Perkiss, Chris Brennan-Horley, Robin Warner – Introduction of Gross Ecosystem Product (GEP) with a case study of Haikou City, JIN Wenjia, IUCN – Challenges in estimating ocean accounts: lessons from the Asia-Pacific region (2004-2019), Alistair McIlgorm, University of Wollongong
	Room B [Hong Kong Alumni Room]	Room B: Using Ocean Accounts: identification of policy use cases for Ocean Accounts and key policy questions for Ocean Accounts.	PILOT 3B	Chair: Sarah Taylor, UK National Oceanography Centre (TBC) Presenters: – Palau, Dr. Yimnang Golbuu – Timor-Leste, Mario Cabral – Maldives (TBC)
Day 3 — Thursday 14 November				
9:00 – 11:00	Plenary Report Back and Reflection	Report back from Rooms A and B and plenary discussion		High-Level Policy Dialogue: Anthony Bennie (Australia) (TBC) Plenary: Michael Bordt, GOAP Co-Chair PILOT 2A: Michael Vardon, ANU PILOT 2B: Zak Baillie, DoEE, Australia

	[Leighton Hall]			PILOT 3A: Vivian Ilarina, Philippine Statistics Authority PILOT 3B: Sarah Taylor, UK National Oceanography Centre (TBC)
		Keynote presentation: connections between Ocean Accounts and ocean science		Presenter: – Ken Findlay, Cape Peninsula University of Technology
		Introduction to Day 3 summary objectives and housekeeping		Ben Milligan, UNSW
11:00 – 11:30	Break			
11:30 – 13:30	Concurrent Working Sessions	Room A: Building Ocean Accounts: review and refinement of zero draft Technical Guidance on Ocean Accounting, including presentations on specialist scientific and technical issues. <ul style="list-style-type: none"> • Overview • Issues • Spatial Units • Asset Classification 	TG 1A	Chair: Glenn-Marie Lange, World Bank Presenters: – Overview & issues: Michael Bordt, GOAP Co-Chair – SEEA Ecosystems revision: Francois Soulard, Statistics Canada – Global Ocean Data Inventory: Lyutong Cai, ESCAP – Mapping Ocean Ecosystems: Feixue Li, Nanjing University – IUCN Global Ecosystem Typology: David Keith, University of New South Wales
	Room A [Leighton Hall]	Room B: Using Ocean Accounts: review and refinement of zero draft Technical Guidance on Ocean Accounting, including presentations on specialist policy and governance issues. <ul style="list-style-type: none"> • Overview • Issues • Uses 	TG 1B	Chair: Rikke Munk Hansen, ESCAP Presenters: – Issues: Ben Milligan, UNSW – Policy use cases of environmental accounting: Michael Vardon, ANU – Sri Lanka Marine Pollution: Pakeer Mohideen Amza (Ministry of Foreign Affairs)
13:30 – 15:00	Lunch			
15:00 – 17:00	Concurrent Working Sessions	Room A: Building Ocean Accounts: review and refinement of zero draft Technical Guidance on Ocean Accounting, including presentations on specialist scientific and technical issues. <ul style="list-style-type: none"> • Ocean Economy 	TG 2A	Chair: Francois Soulard, Statistics Canada Presenters: – Issues: Michael Bordt, GOAP Co-Chair – Ocean Economy: Charles Colgan, Middlebury Institute of International Studies – Zanzibar accounts: Glenn-Marie Lange, World Bank
	Room A [Leighton Hall]	Room B: Using Ocean Accounts: review and refinement of zero draft Technical Guidance on Ocean Accounting, including presentations on specialist policy and governance issues.	TG 2B	Chair: Michelle Voyer, University of Wollongong Presenters: – Issues: Ben Milligan, UNSW – Modelling: Andy Steven, CSIRO – Statistical dashboards for senior decision-makers: Ethan Addicott, Yale
	Room B [The Galleries]			

		<ul style="list-style-type: none"> • Modelling • Optimal presentations of Ocean Accounts data 		
Day 4 — Friday 15 November				
9:00 – 10:30	Plenary Report Back and Reflection [Leighton Hall]	Report back from Rooms A and B and plenary discussion		TG 1A: Glenn-Marie Lange, World Bank TG 1B: Rikke Munk Hansen, ESCAP TG 2A: Francois Soulard, Statistics Canada TG 2B: Michelle Voyer, University of Wollongong
		Demonstration: ESCAP Pacific Ocean Accounting Portal		Gemma Van Halderen, ESCAP
		Highlights from Rooms A and B: global objectives for Ocean Accounting—what should we be doing as Global Community?		Video contributions – ESCAP Executive Secretary – UN Secretary General’s Special Envoy for the Ocean – Contributions from Participants
		Introduction to Day 4 objectives		Rikke Munk Hansen, ESCAP
10:30 – 11:00	Break			
11:00 – 13:00	Joint Session [Leighton Hall]	Joint session: Building and Using Ocean Accounts: Planning of actions and contributions for 2020		Facilitators: Sanjesh Naidu (ESCAP Pacific Office), Francois Soulard (Statistics Canada), Rikke Munk Hansen (ESCAP)
		Administrative meeting for current Members of the Global Ocean Accounts Partnership		[Leighton Hall Mezzanine Level] Closed meeting (by invitation only)
13:00 – 14:00	Lunch			
14:00–15:30	Plenary Closing [Leighton Hall]	Welcome to plenary closing		Chair: Gemma Van Halderen, ESCAP (TBC)
		Statements from GOAP Co-Chairs		Michael Bordt (GOAP Co-Chair)
		Plenary announcement of actions		Chairs: Sanjesh Naidu (ESCAP Pacific Office), Francois Soulard (Statistics Canada), Rikke Munk Hansen (ESCAP)
		Invitation to 2020 Global Dialogue on Ocean Accounting		Government of Canada
15:30	Plenary Closing [Leighton Hall]	UNSW and ESCAP		UNSW and ESCAP

13. Annex 2: Participants in the Global Dialogue



Global Dialogue on Ocean Accounting and First Annual Meeting of the Global Ocean Accounts Partnership

12-15 November 2019

University of New South Wales, Sydney, Australia

List of participants

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14. Annex 3: Technical Guidance response form(results)

A. Specific contributions

Participants were asked to send specific contributions on the following items to info@oceanaccounts.org by Nov. 23, 2019:

- [Para 65-67] Additional “initiatives to measure and assess the ocean” (International or national)
- [Para 73] Non-fisheries examples of scientific challenges
- [Para 96 & Footnote 45] Examples of past accounting for the ocean, especially SEEA-based.
- [Para 141] Examples of 3D maps and 3D accounting tables
- [Para 148] Examples of monetary valuation of ocean ecosystem services
- [Para 177] Example of household surveys conducted to provide detail on ocean-related inputs (e.g., subsistence and recreational fishing)
- [Para 299] Examples of use of Marine Spatial Data Infrastructure [MSDI] and role of ancillary data such as weather, shipping lanes, coastal population
- [Para 326] Examples of “killer indicators” such as “hot spots” of degraded/pristine areas, values at risk, benefits forgone
- [Para 337-339] Suggestions for other indicator frameworks that should be mentioned and linked
- [Para 371] Suggestions for “core ocean statistics” selected from or in addition to EOVS and EBVS
- [Para 378] References to socio-economic analysis in ocean assessment
- [Section 4.3] Suggestions for ocean accounting use cases
- [Section 5] Suggestions for research agenda: (a) testing in future pilots, (b) new research

B. Questions

The following questions were put into context in an overview presentation and further illuminated by topical presentations. The following are the results of a vote, counting the number of “agree” votes only.

#	Where in Technical Guidance V0.7	Question	Response
			Agree (%) n=38
1	General	Should the manual be closely linked to SNA and SEEA?	100
2	General	Should the manual provide more detailed statistical guidelines?	89
3	Para 110	Should the manual keep separate terminology for marine, coastal, terrestrial and freshwater spatial units (e.g., MBSU, TBSU)?	66
4a	Para 113	Should the framework include a clear sectoral definition of the “ocean economy”?	89
4b	Para 120, 133	Should “ocean assets” include produced (e.g., ports, harbours) and human (e.g., capital)?	29
5	Table 1 (p 44)	Should the asset table include “unmanaged regression” (also suggested for SEEA)? i.e., loss due to unintended human impact and climate change?	24
6	Para 126	Do we agree to test the IUCN Global Ecosystem Typology?	55
7	Para 141	Should the tables try to represent a 3D ocean? This implies different tables for different depth layers.	16
8	Section 2.5.3 (p 49)	Is CICES V5.1 the best choice for an ecosystem services classification?	24
9	Para 199	Do we need to include the location of generation and use of residual products? E.g., sediments generated in on drainage area may be dredged in a marine area and used as landfill in another.	18
10	Para 202	Should we try to incorporate the Rest of the World in the flows of residuals? This may require dealing with lag time and dispersion, which may be difficult in an accounting structure.	63
11	Para 214	Is spatial detail necessary for the content of the governance accounts? E.g., jurisdiction, institutions, social conditions...	66

15. Annex 4: Joint session discussion

Suggestions for actions to make progress on the Ocean Accounts within the next year

1. Political motivation and leadership – engagement with policy makers
2. Ocean Accounts must be adopted at the national, regional and global levels
 - a. Connect the Ocean Accounts to the needs of national governments
 - b. Treat the ocean accounting as an instrument for other development topics
3. Establish communities of practice, including via GOAP
4. Development partner support:
 - a. Financial support from international and national community to develop Ocean Accounts
 - b. Capacity building and technical support from development partner community to develop the Ocean Accounts
 - i. Provide training courses; not only for technicians but also for politicians
 - c. Commitment of development partners to support the Ocean Accounts (technical)
 - d. Have a partnership and resource mobilisation plan for identified priority actions for pilots
5. Extend the current pilot projects, and support more pilots
6. Data issues:
 - a. mechanism to share data (open data)
 - b. Encourage the public to contribute to the data collection
 - c. Align with SNA and involve all related industries to reduce transboundary issues
 - d. Integrate data into the national accounts (SNA)
 - e. Integrate bottom-up scientific data with top-down national account
 - f. Sustainable data gathering and sharing of best practice
7. Technical guidance:
 - a. Complete the technical guidance and have it endorsed by the statistical commission
 - b. To set a common language when talking blue economy, (technical guidance)
 - c. Treat the ocean accounting as a satellite account of SEEA
 - d. Combine ESCAP inventory and portal work.
 - e. Narrow the Ocean Accounts to specific topics and have a hierarchic structure
 - f. Citizen science
8. Regional/ Global institutional and partnership issues:
 - a. Regional institutional body to govern the GOAP partnership
 - b. Ensure that the work of the GOAP partnership comes under U.N. umbrella.
 - c. Communicate widely how to become a member of the GOAP partnership and including requirements conditions to become a member
 - d. Establish agreements with the U.N. to work with governments (top-down approach)

- e. Establish the regional and national working group on ocean accounting.
9. National policy and institutional issues:
 - a. Develop a national integrated plan on oceans
 - b. National policy for ocean accounts
 - c. Establish a coordination mechanism to engage stakeholders and to prepare a national action plan
 - d. Involvement of the national statistics offices in the development of the accounts
 - e. Link the ocean account to the UNFCCC for monitoring
 - f. Prioritize the data gaps and have an investment plan to fill the gaps
 10. Outreach and awareness:
 - Movies to demonstrate the usefulness of Ocean Accounts
 - Create a brief introduction and video to the ocean accounts
 - Promote high level workshop, consultations
 - Have simple concepts (like SDGs) to be understood by government and public
 - Create a web forum where industries can upload their activities to create awareness and identify Blue economy champions (to get industry involvement)
 - Create a clear outreach strategy which includes translation of manual into local language
 - Create narratives to support priorities identification

16. Abbreviations

CBD: Convention on Biological Diversity

CMECS: Coastal and Marine Ecological Classification Standard

CSIRO: Commonwealth Scientific and Industrial Research Organisation

ESCAP: United Nations Economic and Social Commission for Asia and the Pacific

GOAP: Global Ocean Accounts Partnership

IOC / UNESCO: Intergovernmental Oceanographic Commission of United Nations Educational, Scientific and Cultural Organization

IODE: International Oceanographic Data and Information Exchange

IUCN: International Union for Conservation of Nature

MSP: Marine Spatial Planning

NSW: New South Wales

SDGs: Sustainable Development Goals

SEEA: System of Environmental-Economic Accounting

SEEA-EEA: System of Environmental-Economic Accounting -Experimental Ecosystem Accounting

SNA: System of National Accounts

UNFCCC: United Nations Framework Convention on Climate Change

UN-GGIM: United Nations Global Geospatial Information Management

UNSW: The University of New South Wales

WWF: World Wide Fund for Nature