Oceans in National Income Accounts

Presentation Abstracts

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Sessions

Session 1
Ocean Economy Accounts

The EU Blue Economy Framework
Yasmin Schinasi Romeu and Angel Calvo Santos,
DG Maritime Affairs and Fisheries, European Commission

In 2018, the European Commission published the first EU Blue Economy Report, which is now in its fourth edition. The Blue Economy seeks to monitor and measure the size and impact of the Blue Economy in the EU, in hope to inform and help guide policy makers. In 2019, the new Commission President, Ursula von der Leyen, unveiled the new European Green Deal, which has become the backbone and foundation for the report as well as much of the work undertaken by DG MARE in relation to the EU's integrated maritime policy.

In this context, DG MARE has now finalised a feasibility study to determine whether setting up Ocean Economy satellite accounts, under a Blue Observatory, is in fact viable. There are various countries around the world, which have already set such satellite accounts at a national level and the EU must now determine to what extent this is possible at the EU level. Additionally, a recurrent issue faced by the EU, is the lack of reliable, comparable and accurate data particularly when it comes down to niche, emerging sectors. The Blue Observatory would hence prioritise these sectors in an attempt to build a solid database to better capture and measure the EU Blue Economy.

Revised National Standards for ocean and related industry classification in China
Weiling Song, National Marine Data and Information Service, People's Republic of China

The scientific classification of marine industries is the precondition to collection of the data. Early in 2006, China released the first national-level criteria of marine industry classification. After 15 years practice, the marine industry classification system has evolved. Existing industries have been moving into new market areas and in addition some new industries have emerged. Thus, the National Marine Data and Information Service has revised the ocean industry classification to meet the need of analysing the current marine economic status. This presentation will introduce the revised classification system including the background to its development and its current structure. A comparison with the old systems will be made and its potential to influence ocean economy data collection internationally will be discussed.

Status of Korea's Ocean Economy based on the National OE Statistics Survey
Seok-Woo, Choi, Korea Maritime Institute

Ocean and coastal ecosystems provide significant economic and ecological services to humans. With the growing importance of the world's oceans and coasts, many countries have begun to focus on the ocean economy. Some countries, such as the United States and China, have separately estimated and disclosed accounts for the ocean economy or the ocean industry. Since 2015, Korea has also started producing national statistics on the ocean and fishery industry. The Korea Maritime Institute (KMI), sponsored by the Ministry of Oceans and Fisheries (MOF), established a classification system for the ocean economy in 2015, and the special classification system for the ocean and fisheries was revised in 2018. Currently, the classification system of the maritime economy consists of 9 large-sized, 29 middle-sized and 68 small-sized sectors.

KMI has estimated the size of Korea's ocean economy every year since 2017 through a national survey. According to the 2020 survey, the number of enterprises related to the ocean and fisheries in 2019 was 167,749, which is 4.0% of all domestic enterprises in Korea. Total ocean economy sales amounted to about 178 trillion won, up 4.0% from the previous year. Meanwhile, employment in the ocean and fisheries sector, including part-time jobs such as daytime workers, is about 1.12 million, accounting for 4.9% of the total employment.

Digital Dashboards for Ocean Accounts
Ethan Addicott, Yale School of the Environment, USA

The digital data dashboard enables the cross-mapping of aggregate headline indicators to sub-regional and even individual-level data. At the global scale, large headline indicators can be important drivers of change; at the local scale, one is left guessing as to whether, or to what degree, headline indicators are relevant. Here, I demonstrate the proto-dashboard built using off-the-shelf software and publicly available data from Statistics Norway as part of the Blue Paper "National Accounting for the Ocean and Ocean Economy" for the High Level Panel for a Sustainable Ocean Economy. I also discuss its ability to allow users to identify indicators and scales that are relevant to them, rather than having national accountants and statistics officers choose the sub-indicators they predict will resonate the most.

Session 2
Ocean Economy Impact Analysis

Policy Impact Assessment for the Marine Sector in Ireland
Cathal O'Donoghue, Stephen Hynes, Andreas Tsakiridis, Jenny O'Leary, Ryan Burger, SEMRU, NUI Galway

Public policy has multiple goals that impact economic, social, spatial and environmental goals. The team in SEMRU has been developing a suite of policy impact assessment tools to provide advice to policy makers in relation to government strategy. Specifically the Bio-economy Input-Output (BIO) model has been developed to undertake multiplier analyses of the sectoral strategies. The model has been extended to consider greenhouse gas emissions. It has been used to undertake impact assessment of the Food Wise and Harvesting Our Ocean Wealth strategies. The Simulation Model of the Irish Local Economy has been extended to look at the spatial footprint of the marine sector. In this presentation, we brief attendees in relation to this capacity, highlighting the model infrastructure's use for impact assessment.

A holistic framework for identifying human well-being indicators for marine ecosystem services in China
Jing Guo, Ocean University of China, Qingdao, China

The concept of human well-being and its relation to ecosystem services has been defined by the Millennium Ecosystem Assessment (MEA). The ecosystem services approach is based on the interdependencies between nature and human well-being. However, while the ecosystem services aspect of this approach is well-developed, the human well-being aspect remains unstructured and vaguely defined. A national measure of well-being is needed which is responsive to changes in the provisioning of ecosystem services. To conceptualize the eco-human linkages we must identify the measurable components of well-being that can be related to marine ecosystem service. Based on the indicators and metrics used in existing well-being indices, this paper describes a framework that identifies eight domains of human well-being and discusses the potential relationships between marine ecosystem services and the domains selected. And then the social attributes and indicators are developed to the Chinese context. This research will serve as the foundation for developing an index of well-being which will be used to evaluate the provisioning of marine ecosystem services in a predictive modeling framework.

An index of vulnerability of marine and coastal areas in the European Atlantic Arc,

Javier Fernandez-Macho, González, P. & Virto, J., University of the Basque Country, Spain

A DEA-based method is proposed to construct a synthetic index of anthropogenic vulnerability with which to rank European Atlantic Area countries and regions down to a regional scale below the national level. The set of indicators selected for this index focuses on five important vectors: marine spills, port activities, tourism, protection of natural areas, and water quality and waste management. The paper shows that, overall, the United Kingdom has the most vulnerable coast in Atlantic Europe, with Ireland showing the most resilient coast of all. Furthermore, the proposed method also allows one to identify peer groups with the same vulnerability pattern. Thus, policies aiming to reduce the vulnerability of a target region may be devised by focusing on the least vulnerable regions within the relevant group.

Indicators of progress for the Atlantic Action Plan Priorities

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The Atlantic Action Plan was initiated in 2013 and aimed to boost the blue economy in the European Union's (EU's) Atlantic area by targeting policy at four priority areas that balanced economic growth with marine and coastal sustainability. There were three mechanisms the Plan was to leverage to achieve its aims; targeted investment, increasing research capacity and higher skills in maritime sectors. It was envisaged that these could be used to progress the four priority areas the plan identified; Promote entrepreneurship and innovation, Protect, secure and develop the potential of the Atlantic marine and coastal environment, Improve accessibility and connectivity, and Create a socially inclusive and sustainable model of regional development. This paper uses indicators from a database of economic and sustainability indicators that was created for the MOSES project to assess changes in the Atlantic Action Plan priority areas from 2014 onwards. These include measures of changes in shipping, marine renewables, marine protected areas and tourist pressures. As the MOSES data was collected at lower regional scale (NUTS3 level) these indicators can also be shown to a relatively detailed spatial level allowing the identification of regions most affected by changes in priority areas. In 2020, the EU commission published the Atlantic action plan 2.0 with a refocusing of priority areas now known as pillars. The lessons learned from adapting the MOSES database indicators for measuring change in the Atlantic action plan may be useful for developing indictors for certain pillars of Atlantic action plan 2.0.

Session 3
MOSES Blue Growth Pathway Case Studies

Introduction to Case Studies and Transitional Lens Approach
Wesley Flannery, Queens University, Belfast, UK

Transition management is a governance approach that aims to facilitate and accelerate sustainable transitions. Transition management focuses on coordinating a wide range of actors with the aim of achieving long-term sustainability. It seeks to coordinate these actors through the creation of a shared understanding of a problem and the development of a long-term vision and sustainable pathways through which the problem can be addressed. Sustainable transitions require actors to develop an understanding of the interconnections between the current management regime and the change pressures exerted on it. MOSES adopted a broad transition lens to understand the change pressures on a number of marine sectors and to develop suggestions about potential sustainable pathways for each one.

Blue Growth Pathway for Ports Development in the Atlantic Area
Christina Kelly, Ben McAteer, Wesley Flannery and Geraint Ellis, Queens University, Belfast, UK

Due to increasing globablisation and containerisation, ports play a significant role in international logistics chains, handling over 80% of world trade. In 2017, seaborne trade volumes had reached 10.7 billion tonnes. Port activities, therefore, contribute significantly to international, as well as local and regional economies. Ports, however, have potentially negative impacts on the environment. These impacts include global maritime transport accounting for 2.5% of global greenhouse gas (GHG) emissions. Additional environmental effects include water and noise pollution, traffic congestion, introduction of invasive species, biodiversity damage and impacts of marine accidents and spills.

In this context, we examine how sustainable 'Blue Growth' in the ports and maritime shipping sectors can be achieved over the long-term. A case study approach involving Belfast Harbour is employed to explore innovative initiatives in technology, operations, and policy to overcome sustainability challenges. We found that the application of a Transition Management framework can help to address the complexities and uncertainties in dealing with sustainable blue growth in the ports and shipping sector over the long-term. The Belfast Harbour case study findings revealed that a 'managed innovation' approach is necessary to transition to greater sustainability over the longer term. Our analysis will help to assist ports in the Atlantic Area to develop a sustainable future transition pathway over the long term.

Blue Growth Pathway for Offshore Energy Development in the Atlantic Area
Régis Kalaydjian, IFREMER, France

The sustainable growth of the offshore renewable energy (ORE) sector has become a critical issue for the development of energy supply in the EU and elsewhere. The development of ORE makes a significant contribution to global warming mitigation efforts but raises other sustainability issues which intensify as the sector continues to grow. The presentation will consider the sector as it is developing in the EU and the Atlantic Area in particular, with a focus on the Brittany region (France). It will identify the strategies and the main pieces of regulation which frame the growth of the ORE sector and the risks associated to it. To do this, the debates organised with developers and stakeholders on specific projects in Brittany provide useful material.

Blue Growth Pathway for Aquaculture Development in the Atlantic Area
Zacharoula Kyriazi and Agnes Marhadour, CIIMAR, Portugal

Globally, aquaculture production is rising rapidly and is being driven by an increasing demand for global food security and economic growth. This growth however must be in line with sustainable development standards, a task that both governments and businesses must undertake. As part of the MOSES project using the case study of Portugal's Centro region aquaculture sector, we examined if and how aquaculture's sustainable Blue Growth has been achieved and how it may be further enhanced through the application of a Transition Management Approach. Based on this approach and by collecting information from scientific and policy publications, statistical datasets and input from key actors we identified drivers and barriers likely to impact the sustainable growth profile of aquaculture. The most important drivers towards realizing sustainable aquaculture are economic, governance and scientific ones, while the most pressing obstacles are governance and economic ones. As such and based on the identified balance between drivers and barriers we outline sustainable blue growth pathways that can address local and national priorities, such as the need for further simplification of licensing processes, the need for facilitation of the access to the space and water and the need of competitiveness reinforcement.

Blue Growth Pathway for Marine and Coastal Tourism Trail Development in the Atlantic Area

Frances Fahy, Desiree Farrell, Stephen Hynes, Liam Carr, Rebecca Corless, and Daniel Norton, NUI Galway, Ireland

As part of the EU's Blue Growth strategy, marine and coastal tourism has been viewed as one of five focus maritime areas with the potential to foster "a smart, sustainable and inclusive Europe". However, while marine and coastal tourism are vital economic activities for a wide range of coastal regions across the EU Atlantic Arc, the sector faces increasing sustainability challenges due to increasing demand and the accompanying social consequences for local communities and environmental consequences for local coastal and marine resources.

Adopting transition management as a broad analytical framework through which to understand existing marine management regimes and to stimulate thinking about how more sustainable regimes may be realized in the future, this study focused on the Wild Atlantic Way (WAW), a 2500 km coastal touring route along the west coast of Ireland. Following a brief review of the marine and coastal tourism management regime in Ireland and the niche and landscape pressures that the sector faces, this presentation outlines the multi method approach adopted for our study which was carried out between 2018-2020. The MOSES project team in NUI Galway in Ireland developed an extensive tourist survey and conducted in-depth collaborative research with a local community situated on the WAW with the goal of identifying the pressures, preferences and development trends relevant to coastal tourism and sustainable pathways for the growth of the tourism trail sector. Results from the research conducted to date suggest that to support sustainable coastal tourism close collaboration at the community level is required. Our research presents a community-generated collaborative framework which can assist overcoming barriers and maximise opportunities in sustainable coastal tourism trail development. It concludes by highlighting key recommendations and policy advice that other European regions may wish to consider if this sector is to lead to sustainable Blue Growth.

Session 4
The Big Challenges: Panel Discussion

Ocean research for the UN Decade of Ecosystem Restoration
Roberto Danovaro, Polytechnic University of Marche, Italy

We are in the UN Decade on Ecosystem Restoration where we aim to "prevent, halt and reverse the degradation of ecosystems worldwide". This is particularly urgent for marine ecosystems, which are subjected to unprecedented levels of human impact. Restoration has been a key action in the Aichi Biodiversity Target and in the UN Sustainable Development Goal 14: "Conserve and sustainably use the oceans, seas and marine resources for sustainable development". Restoration in marine ecosystems has taken its first steps in recent years under EU projects such as MERCES and AFRIMED, gaining new scientific knowledge for several marine ecosystems; seagrass, macroalgal forests, coral forests, stony corals and the deep-sea. Today, new scientific results, technologies and protocols are available, but a concerted effort is required to scale up the effort on a wide geographical area and at basins scale and across different marine ecosystems, from the coastal vegetated habitats to the dark deep ocean, in order to face global climate change challenges. There is the need for integrated environmental management actions for the preservation and restoration of habitats and key species based on the best scientific knowledge. Marine ecosystem restoration can stimulate and enhance social awareness about the need of marine restoration measures by promoting and undertaking economically and ecologically sustainable restoration actions.

EU Mission Starfish 2030: Restore our Ocean and Waters
Peter Heffernan, Member EU Mission Board for
'Healthy Oceans, Seas, Coastal & Inland Waters'

"The Mission "Healthy oceans, seas, coastal and inland waters" aims to know, restore and protect our ocean and waters by 2030, by reducing human pressures on marine and freshwater environments, restoring degraded ecosystems and sustainably harnessing the essential goods and services they provide. Protection and conservation efforts must address the entire ocean and water system in a holistic fashion if they are to succeed. The future we must collectively create will be defined by who we perceive ourselves to be in relation to the natural capital of our oceans and waters, guiding the choices we now make. Inspired by the shape of the starfish, the Mission pursues five interdependent objectives – knowledge, regeneration, depollution, decarbonisation and governance – uniting overall 17 ambitious, concrete and measurable targets for 2030.

To know, restore and protect our ocean and waters will be key to reach the European Green Deal objectives and to contribute to the implementation of the United Nation's 2030 Agenda for Sustainable Development and the Decade of Ocean Science, enabling Europeans to shape a desirable future. The Mission will further be a powerful element in the post-Covid-19 recovery and the transformation towards a more healthy and resilient society."

US Ocean Climate Action Plan: Using ocean and coastal resources to reduce greenhouse gas emissions and helping coastal communities equitably adapt to climate change impacts
Jason Scorse, Center for the Blue Economy, USA

In early 2019 the ocean conservation and policy group Blue Frontier and the Center for the Blue Economy at the Middlebury Institute of International Studies at Monterey began developing an Ocean Climate Action Plan (OCAP) for the US. The aim of the plan was to identify ways that the ocean resources could be used to mitigate greenhouse gas emissions while helping coastal communities to adapt to impacts already underway. The plan focuses on five key areas in need of government investment and innovative new policies: Coastal adaptation and financing, fisheries, aquaculture and biodiversity conservation, offshore renewable energy, and shipping, and ports and the maritime industries. In October 2020 many of the specific recommendations of the Plan were incorporated into the US Ocean-Based Climate Solutions Act, the first bill aimed at using ocean and coastal resources to reduce greenhouse gas emissions and to help coastal communities equitably adapt to climate change impacts. This paper reviews the development of the Plan and what it proposes needs to be done to deal with the challenges involving the ocean-climate connection.

South Korean Ocean New Deal Strategy
Ju-Hyeoun Kim, Korea Maritime Institute

In response to the COVID-19 pandemic, the Republic of Korea announced *The Korean New Deal* as a national strategy for a structural transformation in July 2020. With the aim to support the country's recovery from the pandemic crisis and lead the global action against structural change to economies and societies, the government plans to invest 160 trillion won ($143.9 billion) to three main policies: Digital New Deal, Green New Deal and a policy support for employment and social safety net. Against such backdrop, policies for the post COVID-19 surrounding the oceans and fisheries sector require supporting the Korean New Deal strategy, while overcoming immediate risks and responding to structural changes which are transition to a digital economy, shift towards a green economy, and response to the polarization. To address this policy demand, Korea Maritime Institute suggested South Korean Ocean New Deal Strategy composed of 3 policy directions, 11 main policy tasks and 30 sub tasks.

In terms of Digital New Deal, it is required to improve digital-based ocean competitiveness through providing the 4th IR-based maritime logistics infra structures and building the foundation for smartizing the full cycle of value chains within the fisheries industry. With regard to Green New Deal, moving towards sustainable use of the ocean and reduction of marine environmental waste to zero are main tasks. Last but not least, in terms of Human New Deal, it is required to strengthen the digital and green capacity of the ocean through nurturing new experts and retraining existing workers and stabilize employment by solving employment problems and creating new jobs.

The potential contribution of social scientists to the UN Decade of Ocean Science for Sustainable Development (2021-2030)
Denis Bailly, University of Brest, France

The UN General Assembly has declared 2021-2030 the UN decade of Ocean Science for Sustainable Development. The motto for the decade is "the science we need for the ocean we want". Sustainability, blue growth and blue justice are major drivers of policies that raise many research questions for social sciences and transdisciplinarity under the UN SDGs agenda. The Ocean University Initiative invited a multidisciplinary panel in social science to discuss the place and contribution of social sciences to the UN Decade in November 2019. Main outcomes will be presented.

Session 5
Valuation and Natural Capital Accounting for the Oceans

Initial steps towards Ocean Natural Capital Accounts in the UK and Small Island Developing States
Tiziana Luisetti, CEFAS and Gaetano Grilli, University of East Anglia, UK

The limited guidelines for Ocean Natural Capital Accounting (NCA) and data available within the marine environment (over a third of UK marine and coastal habitats fall in the category of just 'Seabed' or 'Known unknown') stimulated us to explore the potential to include a wider set of ecosystem services within marine accounts. To assess the critical conditions for sustainable ecosystem service delivery we used logic chain analysis. We were therefore able to identify more clearly were the gaps and limitations lie for Ocean NCA. Further, working on the assumption that Small Island Developing States (SIDS) would greatly benefit from consistent and coherent frameworks to organise information about their coastal and marine natural resources, we have explored the potential development and application of combined natural and socio-economic data through the Poverty-Environment Accounting Framework (PEAF) for initial marine and coastal NCA in Grenada. One of the main objectives of NCA frameworks is to highlight the contribution of the natural environment in fulfilling societal and economic needs; our work aims to advance understanding, and the provision of guidelines, in this area.

The development of Canadian Ocean Environmental-Economic Accounts
Gisele Magnusson, Fisheries and Oceans Canada

Canada initiated pilot Ocean Accounts in 2019 to support Fisheries and Oceans Canada's mandate to safeguard Canadian waters and manage Canada's fisheries, oceans and freshwater resources, and to ensure healthy and sustainable aquatic ecosystems through habitat protection and sound science. The focus of the pilot is to develop a nationally-consistent and integrated set of indicators for evidence based decision making, and to support of the development of Canada's Blue Economy Strategy that enables Canada to grow its oceans economy while advancing our conservation objectives. The pilot is a joint project with Statistics Canada and was a response to call by UN-Economic and Social Commission for Asia and the Pacific (ESCAP) for nation states to participate in the development and implementation of Ocean Accounts. Progress on the pilot includes: augmenting and publishing of Canada's Marine Economy satellite accounts; assessing gaps in Canadian ocean-related data; and, undertaking a case study for estimating the extent of eelgrass beds and associated blue carbon stocks along the Canadian coastline for the Ecosystem Services accounts. Most challenges to date have involved identifying and accessing existing data to expand the ecosystem extent and condition accounts for all three coasts of Canada. With two years remaining in the pilot the focus will continue to be on the ecosystem accounts, further building the Marine Economy satellite accounts, and identifying priority data gaps on extent and condition.

Economic values of wetlands and wetland restoration: Issues for inclusion in ocean accounts
Charlie Colgan, Center for the Blue Economy, USA

As the measurement of ocean economies expands to include the environmental resources and ecosystem services in accordance with the System of Economic and Environmental Accounts Central Framework and Ecosystem Service Accounts, attention is drawn not only to the assets of the ocean but also to such coastal systems as wetlands. Wetlands are known to have high economic values, in large part because of the broad array of functions they serve and the high values placed on those services. But valuing those services so that wetlands can be fully represented in the ocean accounts presents significant challenges in definition of value, valuation methodologies, and reporting of values. No standard measurement process is possible or really desirable, so it is essential that if wetlands are to be incorporated in ocean accounts that reporting standards be established to link research to the accounts.

Prospects for valuation in marine decision making
Rob Tinch, Economics for the Environment
Consultancy Ltd, UK

There is now high-level recognition that the UN Sustainable Development Goals can only be achieved if the decline of ecosystems and biodiversity can be halted and reversed. This will require effective control of ongoing pressures, meaningful protection and enforcement of protected areas, and significant investments in ecosystem restoration. This paper explores the important role of tools of economic valuation and appraisal in achieving these goals in marine systems. Recognising the services provided by restored ecosystems, quantifying them and finally valuing the benefits to society from those services enables decision makers to take such values into account when assessing policies which may affect marine habitats and when compared to the costs of restoration activity (including monitoring and maintenance) can also assist policy makers to decide on which restoration projects should be prioritised. This paper first briefly reviews the tools of economic valuation and appraisal for marine ecosystem management. A critique of the use of economic valuation and appraisal is then presented across three marine policy contexts – protecting, restoring, or causing damage to the marine environment. The paper argues that while progress has been made there remains a pressing need for better integration of marine environmental values in policy processes.

Session 6
Ocean Satellite Account Developments

Measuring the Sustainable Development of the Ocean and Ocean Economy
Eli Fenichel, Yale School of the Environment, USA

Sustainable development of the ocean economy requires a system for measuring progress. The standard system of national accounting provides a solid foundation for doing so, though the scope requires expansion to adequately cover household-produced services, e.g., ocean-based leisure, and the role of natural capital in the ocean economy. Indeed, it likely makes sense to expand national accounts and then subsample out the ocean components to understand sustainable ocean develop and how sustainable ocean development interacts with sustainable development more broadly. To do so, the accounts summary needs indicators beyond GDP. As highlighted in the recent Dasgupta Review a full set of asset accounts is needed, as are measure of distribution. New technologies are here that make it feasible to build and work with such accounts. Ocean accounting can lead to the way to system for measuring sustainable development broadly, which is necessary for global sustainable development.

Analysis of Korea's Ocean Economy using Input-output tables and the Progress on a Satellite Account
Jeong-In Chang, Korea Maritime Institute

The ocean has emerged as a new solution to new growth engines. Many countries have recently shifted their focus on economic development based on the ocean. However there is no unified concepts, methods and comparable national data for ocean economy. It is necessary to assess and analyze national ocean and fisheries industries as a market value of ocean economy. The purpose of this study is to analyze the value-added of ocean and fisheries industries, to investigate the role of it among national whole industries and to make evidences for policy of ocean economy. For this, the latest National Input-Output Table 2015-2017 of the Bank of Korea is used. This study consisted with 4 parts, as follows. First, this study establish new 40 by 40 matrix input-output table identified with 10 ocean and fisheries industries. Second, this study analyzes the total output, value added, and number of employees of ocean and fisheries industries. Third, we measure the economic impact of ocean and fisheries industries using the input-output analysis based on the demand-driven model. Last, as a next step of ocean economy measurement, the progress of ocean economy satellite account in Korea will be addressed.

Towards internationally comparable statistics on ocean economic activity
James Jolliffe, STI Ocean Economy Group, OECD

Good planning, management and protection of our ocean and seas requires reliable data on which to base decision-making. In recent years, growing realisation of this need has led to much greater demand for improved ocean economy statistics. That demand is emerging at local and regional levels but also and especially at international level where the importance of interlinkages between ocean economic activities, marine space, marine environmental dynamics, and global climate change have become increasingly clear. Based on recent OECD analysis, this presentation aims to inform current international discussions on measurement of the ocean economy and will outline ways in which international ocean economy statistics can be improved through satellite accounting approaches.

New approach to U.S. maritime economic statistics
Jeffery Adkins and Monica Grasso, NOAA, USA

The Marine Economy Satellite Account provides new measures of ocean-dependent activity in the United States showing that, in 2018, the ocean and coasts of the United States accounted for over $600 billion (USD) in gross output and $373 billion in value-added in ten marine sectors. This is equivalent to about 2 percent of the U.S. economy, which is similar to the marine share of other large, diverse European economies. This share may seem small, but it exceeds that of the agriculture, data processing/internet publishing, and public utilities sectors, measured in terms of gross output. This talk will provide a summary of findings, an overview of the methods and data sources that were used, a comparison of these estimates to other statistics on the U.S. marine economy, a discussion of complicating factors that may be relevant to other countries, and a list of next steps for refining these statistics.