Observatories, Science Diplomacy & Ocean Governance
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**Rapporteur:** Andrew Titmus, National Science Foundation

**SESSION ORGANIZER & MODERATOR**

Jan-Stefan Fritz, Senior Associate Research Fellow, Institute of International and Intercultural Studies, University of Bremen. Head, KDM German Marine Research Consortium (Brussels)

**PANELISTS**

Kristina Gjerde, High-Seas Policy Adviser, World Conservation Union. Adjunct Professor, Middlebury International Studies at Monterey

Janice Romaguera Trotte Duhá, Special Adviser, Directorate-General for Science, Nuclear and Technological Development, Brazilian Navy

Zdenka Saba Willis, Former Director, U.S. Integrated Ocean Observing System, NOAA. Captain, U.S. Navy (retired)

This session explored how to best balance the scientific, as well as state, economic and security interests facing ocean observatories.

**Jan-Stefan Fritz** opened the session reflecting on how ocean observing is a highly technical issue, though ocean affairs in general is a highly emotive but distant issue for many. The value of ocean observing can be difficult to communicate to politicians and highly controversial oceans issues are difficult to couple with tangible targets and standards.

International tensions have risen as states have sought to extend their sovereignty over more of the ocean. The 14th Sustainable Development Goal (SDG 14)—conserve and sustainably use the oceans, seas, and marine resources—offers a framework for cooperation between states, though tensions remain as actors desire to manage the oceans together, yet maintain individual rights to access. Ocean observing data can be hard to visualize but is vital for many things including weather and commerce. Ocean observing data is collected globally, at over 8,000 sites. Despite the massive undertaking, funding streams are generally unstable. There is a hope that SDG 14 can spark a political change that will galvanize support for global ocean observing initiatives.

Zdenka Saba Willis noted that the value that ocean observing data brings to our everyday life needs to be better communicated by scientists, policymakers, and others. Ocean observing data allows us to facilitate the movement of 90% of global goods, which are transported by ship; monitor harmful algal blooms that have a huge negative impact on tourism and the seafood industry; understand the effects of the Deep Water Horizon and other oil spills; and predict the impact of storms on coastal areas which allow authorities to reopen ports. We need to ensure that ocean observing data are a public good, open and available.

Janice Romaguera Trotte Duhá described science diplomacy as an important part of ocean observing as ocean currents know no political borders and oceans provide a livelihood to many nations and people.

**SESSION KEY POINTS**

- Ocean observation networks provide data beneficial to our economy and society. The message of this value needs to be better communicated so that the public and policy makers can fully understand the value of ocean observations.
- Science diplomacy can help build internationally collaborative ocean observation networks which can build capacity, better integrate observations, and provide more sustainable and efficient ways to collect and use data.
- Collaborative ocean observing networks must equitably share the costs and commitments and reduce the technology gap between collaborators.
- BBNJ is a potential new way to cooperatively govern ocean areas beyond national jurisdiction using an Environmental Impact Assessment (EIA) approach. Perhaps science can be a driver for galvanizing support for a new system of ocean governance, much like how the International Geophysical Year drove the formation of the Antarctic Treaty. Diplomacy on the other hand can support science collaboration to achieve the goal of a sustainable ocean.

Furthermore, the oceans play a vital role in regulating the atmosphere and the climate, absorbing carbon dioxide emissions. Increasing carbon emissions and ocean acidity will lead to ecosystem impacts that are not yet fully understood. Networks of ocean observations are particularly important to monitor the impacts of climate change.

Integrating ocean observations maximizes their use and potential impact. There are current examples of observatory networks, such as the South Atlantic Peace and Cooperation Zone (ZOPacas), and the PIP-RATA ocean observing network—a cooperatively managed buoy network in the tropical Atlantic Ocean funded by Brazil, France, and the United States since 1997. But there is room for improvement. AtlantOS is an example of a proposed advanced framework for integrating ocean observations in the Atlantic that is more sustainable and efficient. Improved coordination with also reduce the technology gaps that exist across states with different development levels. In addition to observing networks, research vessels provide further opportunities for partnerships regionally and globally.

Kristina Gjerde discussed the question of whether science diplomacy can transition two-thirds of ocean regions from a model of competition to one of collaboration. This will require a new wave of science diplomacy that incorporates both science for diplomacy and diplomacy for science. There is some consensus on a new legal convention for governing the high seas that would balance rights, interests, and share products. Biological Diversity Beyond Areas of National Jurisdiction (BBNJ) is a UN legal instrument on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, under the UN Convention on the Law of the Sea.

One example of “science for diplomacy” is the following: as scientists established that deep sea bottom trawling destroys benthic habitat in many ocean areas, the UN and others used that scientific information to restrain deep sea bottom trawling. Increasingly, governments are agreeing to area-based management using an Environmental Impact Assessment (EIA) approach. Perhaps science can be a driver for galvanizing support for a new system of ocean governance, much like how the International Geophysical Year drove the formation of the Antarctic Treaty. Diplomacy on the other hand can support science collaboration to achieve the goal of a sustainable ocean.