The National Academies of SCIENCES ENGINEERING MEDICINE

OCEAN DECADE U.S.
U.S. National Committee for the Decade of Ocean Science for Sustainable Development

EquiSea: The Ocean Science Fund for All

Alexis Valauri-Orton[1], Brian K. Arbic[2], Jorge Rafael Bermudez Monsalve[3], Gina Bonne[4], Marcia Creary Ford[5], Edem Mahu[6], Courtnie Park[1], and **Aileen Tan Shau Hwai[7]**

[1]The Ocean Foundation, USA; [2]The University of Michigan; [3]Galapagos Marine Research and Exploration, Ecuador; [4]Indian Ocean Commission, Mauritius; [5]University of the West Indies, Jamaica; [6]University of Ghana; [7]Universiti Sains Malaysia

Corresponding author email: avalauriorton@oceanfdn.org

ABSTRACT

Ocean science capacity is distributed unequally, but a rapidly changing ocean requires widely and equitably distributed human, technical, and physical ocean science infrastructure. EquiSea: The Ocean Science Fund for All is a platform co-designed through consensus-based stakeholder discussion with more than 200 scientists from around the world. EquiSea aims to improve equity in ocean science by establishing a philanthropic fund to provide direct financial support to projects, coordinating capacity development activities, fostering collaboration and co-financing of ocean science between academia, government, NGOs, and private sector actors, and supporting the development of low-cost and easy-to-maintain ocean science technologies.

Vision and Potential Transformative Impact

Sustained ocean science requires a strong supporting environment, including consistent national government allocation of funding for ocean science, well-maintained research facilities and offshore assets, and a healthy job market for ocean science professionals. Robust ocean science capacity can thus be defined as having the infrastructure and human and financial resources required to predict and respond to dynamic environmental change. Currently, many regions lack the infrastructure, training, and foundational government and funding structures required to sustain ocean observing. EquiSea aims to ensure equitable distribution of ocean science capacity, in particular throughout the UN Decade of Ocean Science for Sustainable Development. To achieve this, EquiSea will:

1. Establish a philanthropic fund to enable equitable distribution of ocean science capacity, including through funding of training programs and infrastructure grants.
2. Coordinate with key international processes and partners to ensure effective delivery of capacity development.
3. Foster collaboration between scientists and policymakers to enhance national support for sustained ocean science programs.
4. Engage private sector actors to provide jobs training and employment opportunities in ocean science.
5. Engage with ocean science technology developers to ensure a pipeline of accessible technology suitable for use in under-resourced regions.

Realizable, With Connections to Existing U.S. Scientific Infrastructure, Technology Development, and Public–Private Partnerships

EquiSea will support collaborations between scientists in the United States and under-resourced nations, thus utilizing one of the key elements of U.S. infrastructure, namely, scientists and the expertise that they bring to their projects. Additionally, EquiSea will support technology development, especially development of lower-cost and other observing technologies that are well-suited to under-resourced and remote regions. EquiSea will also promote public–private partnerships, which can provide jobs for people trained in the ocean sciences in under-resourced nations. For example, the EquiSea will direct co-financing of job placement and training programs with private-sector partners. Large U.S. companies with a marine-sector focus, such as shipping, maritime security, pollution management, and fishing, need to have local employees in all of the countries that they operate in. EquiSea will therefore benefit U.S.-based marine-sector companies by providing them with a trained workforce overseas and potential access to emerging sustainable blue economy markets.

EQUISEA

Scientific/Technological Sectors Engaged Outside of Traditional Ocean Sciences

EquiSea will engage the private sector, the technology sector, and governments in under-resourced regions, which often have weak relations with their scientists. To help build the foundational feedback loop between science, policy, and industry, EquiSea will facilitate discussions between the academic, private, and government sectors, identify projects that bolster a sustainable blue economy, and fund activities that encourage private-sector job creation. To coordinate and focus global efforts EquiSea will also host annual technology workshops that promote appropriate observing technologies for under-resourced regions. Finally, EquiSea will incorporate requirements for government and science connections within proposal calls—for example, projects for new monitoring systems must identify agencies that will be served by the data.

Opportunities for International Participation and Collaboration
Successful implementation of EquiSea will greatly enhance international participation and collaboration. Many under-resourced countries do not have national science funding agencies, and in many higher-resourced countries, funding for international capacity development work is lacking. Consequently, participation of scientists from under-resourced countries in global ocean governance boards, global ocean science meetings, and international journals is sorely lacking, and the number of collaborations between scientists in under-resourced countries and higher-resourced countries is limited. EquiSea will support projects that promote development of ocean science in under-resourced countries, and promote collaborations between scientists in under-resourced and higher-resourced countries.

Develops Global Capacity and Encourages the Development of the Next Generation of Ocean Scientists, Engineers, and Technologists

The focus of EquiSea is to address systemic inequities in ocean science capacity, especially training of the next generation of ocean scientists. EquiSea will support projects that are motivated by these goals. In many countries, there are not nearly enough ocean scientists to take local measurements, train the next generation of scientists, and serve on global ocean governance boards. EquiSea seeks to rectify this major shortcoming in the global oceanographic workforce, through supporting a variety of capacity development projects around the world, especially in underserved regions.