

Science at the Interface: The Brazilian National Institute for Ocean Research (INPO)

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Addressing complex socio-ecological challenges in current days requires rethinking scientific institutions to operate intentionally at the interface of science, policy, and society. There is also a need to overlook innovative ocean science governance models which are fit-for-purpose and adapted to national realities, strengthening Global South capacities and coordination. Therefore, we present the Brazilian National Institute for Ocean Research (INPO), a mission-driven boundary organization designed to generate actionable science for ocean sustainability. As an independent research institute and yet linked to Brazil's Ministry of Science, Technology and Innovation, INPO was established to address persistent structural gaps in ocean sciences, including data integration, observational capacity, and cross-sectoral coordination.

INPO's core innovation lies in both leveraging research and building bridges across siloed ocean sectors, in support of improved evidence-based decision-making. INPO also seeks to apply Diversity, Equity/Equality, and Inclusion (DEEI) as integral components of scientific rigor, relevance, and legitimacy, rather than treating them as ancillary objectives. This approach is operationalized through a distributed, network-based model that connects Brazilian institutions from across more than 7,000 km of coastline, including universities, companies, government agencies, and civil society organizations, to co-produce knowledge that is actionable. INPO has four pillar flagship projects: (1) a Brazilian ocean data infrastructure, aligned with FAIR and CARE principles; (2) ocean monitoring through integrated ocean observing systems in the Tropical and South Atlantic Ocean; (3) an instrumentation center dedicated to calibration, development of affordable sensors, and ocean technology innovation; and (4) a blue energy center dedicated to advancing sustainable ocean renewables technology.

INPO demonstrates that inclusive and actionable science is not only an ethical commitment, but a practical requirement for effective climate adaptation and the achievement of SDG 14 - Life below Water. In this presentation, we highlight INPO's role in advancing Open Science practices and accessibility, enhancing the uptake and relevance of ocean knowledge. We conclude by identifying transferable insights for the design of boundary institutions capable of reconciling scientific excellence with equitable governance in the Global South and beyond.

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