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HOW TO CITE:

Claassen M, Zagalo-Pereira G, Soares-Cordeiro AS, Funke N, Nortje K. Research and innovation cooperation in the South Atlantic Ocean. *S Afr J Sci.* 2019;115(9/10), Art. #6114, 2 pages. <https://doi.org/10.17159/sajs.2019/6114>

ARTICLE INCLUDES:

- Peer review
- Supplementary material

KEYWORDS:

SDG 17, sustainable economic growth, strategic partnerships, marine resources

PUBLISHED:

26 September 2019

Research and innovation cooperation in the South Atlantic Ocean

The ocean provides a diversity of services, which range from food, minerals, energy and transportation to biodiversity and cultural services such as tourism and heritage. Achieving a balance between harnessing these services to support social and economic development and protecting the resource base remains a challenge. For example, the Food and Agriculture Organization of the United Nations reports that the percentage of stocks fished at biologically unsustainable levels increased from 10% in 1974 to 33% in 2015.¹ According to the Ocean Health Index, natural products, coastal protection and carbon storage at a global level all saw steady declines between 2012 and 2016.²

The South Atlantic Ocean is described by the International Hydrographic Organization as stretching from the equator in the north to the Antarctic continent in the south, and is broadly bound by South America to the west and Africa to the east.³ According to the Ocean Health Index, South Africa, bordering the South Atlantic in the east, is ranked 45th (out of 221) on the overall score, whereas Brazil and Trindade on the other side of the South Atlantic, are ranked 126th.² South Africa's highest ranking (21st) is on the 'Carbon storage' metric and its lowest ranking (144th) is on the 'Clean water' metric, whereas Brazil and Trindade's highest rankings (26th) are on the 'Sense of place' metric and their lowest rankings (162nd) are on the 'Livelihoods' metric.² With the UN General Assembly Resolution 71/312 calling for, among others, action to 'Develop comprehensive strategies to raise awareness of the natural and cultural significance of the ocean...'⁴, the above metrics provide guidance on areas of strength on which to build and areas in which to improve.

World Wildlife Fund South Africa reports that 14% of South African linefish species are overexploited and that the stocks of 52% of linefish species have collapsed. This proportion is significant, as small-scale fisheries in South Africa support the livelihood of more than 28 000 households directly, whereas indirect employment is provided by the commercial fisheries to more than 100 000 employees.⁵ In Brazil, catches peaked at just more than 950 000 tonnes in 1985, whereas sharp declines on the abundance of the main target stocks caused catches to drop to around 600 000 tonnes/annum between 1990 and 1999, before recovering to just more than 700 000 tonnes in 2016.^{6,7}

Sustainable management of ocean resources is a global issue that requires cooperation. The strongest recognition of this need is the inclusion of a Sustainable Development Goal on the need to strengthen the means of implementation and revitalise partnerships (SDG 17) in the UN 2030 Agenda for Sustainable Development.⁸ Research and innovation are key areas where partnerships can play a crucial role to sustainably manage resources to support the aspirations of the present generation and maintain the development potential for future generations.

Regional and national efforts to promote African Atlantic cooperation

The 'Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region' known as the Abidjan Convention, was entered into force on 5 August 1984 and has been ratified by Benin, Cameroon, Congo, Côte d'Ivoire, Democratic Republic of Congo, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mauritania, Nigeria, Senegal, Sierra Leone, South Africa and Togo. The Convention addresses the need for cooperation to ensure sustainable and environmentally sound development through a coordinated and comprehensive approach, and the need for a carefully planned research, monitoring and assessment programme.⁹

The Benguela Current Large Marine Ecosystem (BCLME) spans the exclusive economic zones of Angola, Namibia and South Africa and beyond. The Benguela Current Commission was established in March 2013 by the Republics of Angola, Namibia and South Africa to coordinate the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the BCLME, in order to provide economic, environmental and social benefits. The concepts of cross-sectoral marine spatial planning, environmental stress reduction and climate change have emerged strongly over recent years.¹⁰

In South Africa, Operation Phakisa was launched in 2014 as a results-driven approach, involving clear plans and targets, ongoing monitoring of progress and communication of results to the public. The Marine Transport and Manufacturing work stream builds on South Africa's strategic location, infrastructure and skills base to accelerate growth of the sector.¹¹ By 2016, the initiative had unlocked investments of about ZAR17 billion (USD1.2 billion) in the oceans economy and created over 4500 jobs in the various sectors.¹²

The priorities and actions in the 'Research Innovation and Knowledge Management Road Map for the South African Maritime Sector' take a broader perspective, with the objectives including the establishment of a maritime culture, an enabling governance framework, structured financing of initiatives, and a system of coordination, collaborating and knowledge sharing. Objectives related to ocean resources include sustainable utilisation and protection of natural resources and promoting safety, security and military protection.¹³

Trans-Atlantic cooperation

Brazil's Minister of Foreign Affairs (Antonio Patriota) highlighted the commitment of African and South American countries to a South Atlantic identity at the Seventh Ministerial Meeting of the Zone of Peace and Cooperation of the South Atlantic in 2013 and added that the South Atlantic is a bridge between brother continents.¹⁴ Convergent aspirations from across the Southern Atlantic paved the way for the 'South-South Framework for Scientific and Technical Cooperation in the South and Tropical Atlantic and Southern Oceans'.¹⁵ This high-level scientific research agenda emphasises the need for research in three themes: climate variability and change; ecosystems variability



and controlling processes; and living and non-living resources and biodiversity. The framework sets out to promote scientific cooperation and capacity building among South Atlantic countries, through the exchange of expertise and knowledge, in order to bring about environmental and socio-economic benefits for these countries. The principles of the framework are entrenched in the 'Belém Statement on Atlantic Research and Innovation Cooperation', which was signed by South African and Brazilian Ministers (Naledi Pandor and Gilberto Kassab) and the EU Commissioner (Carlos Moedas) in Lisbon on 13 July 2017.¹⁶ The agreement promotes sustainable cooperation on marine science, research and innovation by linking research activities with those in the North Atlantic, exploring synergies with other initiatives, and optimising the use and sharing of research infrastructure, data and platforms. It further sets out to develop a common understanding and deepening of scientific knowledge of marine ecosystems and the interrelations between oceans and climate change, oceans and food, and oceans and energy systems. The envisaged outcomes are: better monitoring and forecasting capacities; improved safety at sea, human health and well-being; sustainable use of marine resources; new and emerging technologies to service societal needs and new value chains; and ocean-engaged citizens through enhanced ocean literacy activities.

Implementation of the Belém Statement is facilitated through the newly established Cooperation and Support Action, entitled 'All Atlantic Cooperation for Ocean Research and innovation' (AANCHOR; www.AllAtlanticOcean.org), under the EU Horizon 2020 programme. The South African Department of Science and Innovation, National Research Foundation and Council for Scientific and Industrial Research are among the 17 project partners from Portugal, Belgium, Spain, France, Germany, South Africa, Brazil, Argentina and Cape Verde. AANCHOR's mission is to bring together all relevant research and innovation actors around the Atlantic Ocean to build a long-lasting Atlantic Research and Innovation Ocean Community to address grand challenges and opportunities. AANCHOR works closely with policymakers to inform them on long-lasting, high-potential, new actions to further enhance the sustainable economic growth and well-being of the Atlantic society. These long-lasting and impactful initiatives will be discussed and identified by the Atlantic Research and Innovation Ocean Community created within the scope of the project and will be based on the numerous existing initiatives on research and innovation in the Atlantic Ocean, including the Atlantic Ocean Research Alliance (AORA project; www.atlanticresource.org). The most exciting ones will be appraised by the policymakers and some will be supported through the Support Action. For their continued growth, AANCHOR will also help in finding the best tools and funding opportunities. The initiative will run for 4 years (until September 2022), during which engagements with partners and stakeholders will provide key inputs to the process. Among the engagement opportunities will be 10 multi-stakeholder platform workshops that will take place across the different regions.

By promoting the implementation of the Belém Statement, it is envisaged that the AANCHOR project will upscale research and innovation cooperation within the Atlantic basin, from Antarctica to the Arctic.

The AANCHOR Coordination and Support Action received funding from the EU's Horizon 2020 research and innovation programme under grant agreement no. 818395.

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