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Connectivity between Areas Beyond National Jurisdiction and the coastal zones: Country Profile

The Republic of Madagascar

Key Messages:

UN member states negotiating a legally binding instrument governing ABNJ must include provisions to ensure that all future management regimes are informed by their potential impacts on territorial waters — particularly in Least Developed Countries.

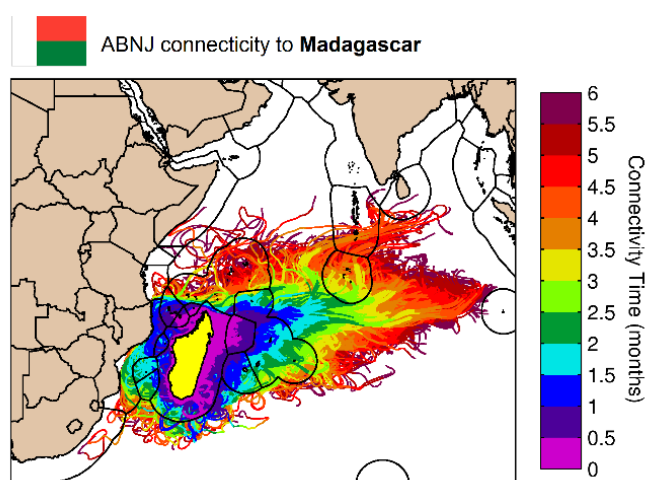
Vigorous and seasonally reversing circulation of the WIO make East African coastal countries highly vulnerable to negative impacts of the fishing and extraction activities in the ABNJ

The coastline of the Republic of Madagascar is one of most ABNJ-connected coastlines in the world indicating enhanced socio-economic vulnerability to the activities in the ABNJ.

United Nations member states are negotiating a new International Legally Binding Instrument on the conservation and sustainable management of marine biodiversity in the ABNJ. These waters do not exist in isolation: marine ecosystems are interconnected by ocean currents and the movement of migratory species. What happens in ABNJ can therefore cause impacts in coastal waters.

What is Marine ecological connectivity?

Ecological connectivity is a complex natural phenomenon linking various components of marine ecosystems in time and space. It is affected through two types of connections: passive or circulation connectivity mediated by the ocean currents and active or migratory connectivity achieved by active swimming by marine species.



The time, in months, that it takes for ocean surface waters originated in the ABNJ to reach the coastal zone of the Republic of Madagascar. The colour of the trajectories indicate the time in months for the surface waters to be advected to the coastal zone, termed on the colour bar as the connectivity time.

What is special about the Western Indian Ocean?

The complex and vigorous surface circulation of the north-west Indian Ocean, with its seasonally-reversing currents driven by the monsoon, makes the East African coastline one of the most ABNJ-connected coastlines in the world.

Countries of the Western Indian Ocean (WIO) depend heavily on marine resources, but the benefits from conservation and management measures in ABNJ will not be evenly distributed. By highlighting which regions of ABNJ are most connected to coastal LDCs and other developing coastal states via ocean currents, this briefing aims to help the parties ensure that area-based management regimes in ABNJ protect these countries' interests and rights.

Ecological connectivity between marine ecosystems means that negative impacts — such as overfishing and pollution — within ABNJ can affect coastal populations of marine species, and ultimately change the structure of coastal ecosystems. Connectivity varies between different ABNJ and coastal waters, and countries with stronger connectivity will capture many more benefits than others from conservation measures such as MPAs.

Connectivity analysis can be especially useful to the developing countries to prioritize regional ocean management, including in ABNJ, by identifying which countries naturally cluster together through connectivity. This includes more ecologically-defined ocean management units that transcend jurisdictional boundaries.

About the SOLSTICE Project

Poor coastal communities are at the frontier for climate change impacts, compounded by population growth and food demand, but are among the least resilient to the challenges of the future.

SOLSTICE is a four year collaborative Global Challenges Research Fund project that brings together recent advances in marine technologies, local knowledge and research expertise to address challenges facing the Western Indian Ocean region in a cost-effective way via state-of-the-art technology transfer, collaborative environmental and socio-economic research and hands-on training.

The information presented in this brief is based on the following publications:

Popova, Ekaterina; Vousden, David; Sauer, Warwick H.H.; Mohammed, Essam Y.; Allain, Valerie; Downey-Breedt, Nicola; Fletcher, Ruth; Gjerde, Kristina M.; Halpin, Patrick N.; Kelly, Stephen; Obura, David; Pecl, Gretta; Roberts, Michael; Raitos, Dionysios E.; Rogers, Alex; Samoily, Melita; Sumaila, Ussif Rashid; Tracey, Sean; Yool, Andrew. 2019 Ecological connectivity between the areas beyond national jurisdiction and coastal waters: Safeguarding interests of coastal communities in developing countries. *Marine Policy*, 104. 90-102. <https://doi.org/10.1016/j.marpol.2019.02.050>

So far, yet so close: ecological connectivity between ABNJ and territorial waters. Ekaterina Popova, Annabelle Bladon, Essam Yassin Mohammed, David Vousden, Warwick Sauer; IIED Briefing, 4 pages. <https://pubs.iied.org/17500IIED/>

