Aligning spatial conservation priorities with connectivity across management and maritime boundaries

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Report on ABNJ connectivity: WIOMSA/UNEP – Nairobi Convention
Connectivity

• Spatial insurance hypothesis indicates that connectivity is an important attribute of natural ecosystems that sustains both biodiversity and ecosystem function

• Maintaining connectivity can improve resilience to perturbations and promote genetic diversity
Fisheries occurs across maritime jurisdiction

Vessel Tracking map
CDB - Aichi Target 11

By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved ecologically representative through effectively and equitably managed, and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.
Representativeness: geomorphic habitats
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Measuring connectivity:
ABNJ to other areas
How connected are the ABNJ to other areas?

Larval dispersal experiment

The dispersal of larvae from ABNJ areas are variable in the northwest Indian ocean due to effects of the monsoon.
• The general circulation plays an important role in dispersing larvae towards EEZ & MPAs

• North of WIO, the Somalia, Seychelles & Chagos EEZ are supplied with larvae from ABNJ

• Central of WIO republic of Mauritius EEZ seem well connected to ABNJ

• South of WIO, Mozambique & South Africa are also connected
Particle density map
Assessments: how connected are WIO marine reserve networks?

- MPAs along the East African coast are fairly connected due to the constant northward flowing EACC.
- MPAs within the Comoros basin are also connected to those of northwest Madagascar.
How will climate change impact on the connections?

Considerations:

• Reorganization patterns of species diversity driven by climate change

• Marine taxa track climate change velocity - the rate and direction that climate shifts across the seascape—can explain observed species shifts

• Changes in climate conditions are useful for predicting shifts in species distributions

• For example, regions with limits to climatic niche shift will adapt and persist or be replaced
Regional patterns of climate trajectory classes

How can we maintain the connections?

- Designing a **well-connected** systems of protected areas and other effective area-based conservation measures across *maritime jurisdiction*

**Guidelines (or objectives):**

1. Protect the ‘focus areas’ e.g. existing protected areas, critical habitat for endangered species, and/or otherwise important habitats for connectivity.

2. Prioritize areas which receive input from other larger areas (convergence zones) (However, receiving areas may be susceptible to outbreaks and invasive species)

3. Prioritize areas which may act as important ‘corridors’ or stepping stones among other areas under consideration.
Thank you