# ABNJ and the Abidjan Convention Region

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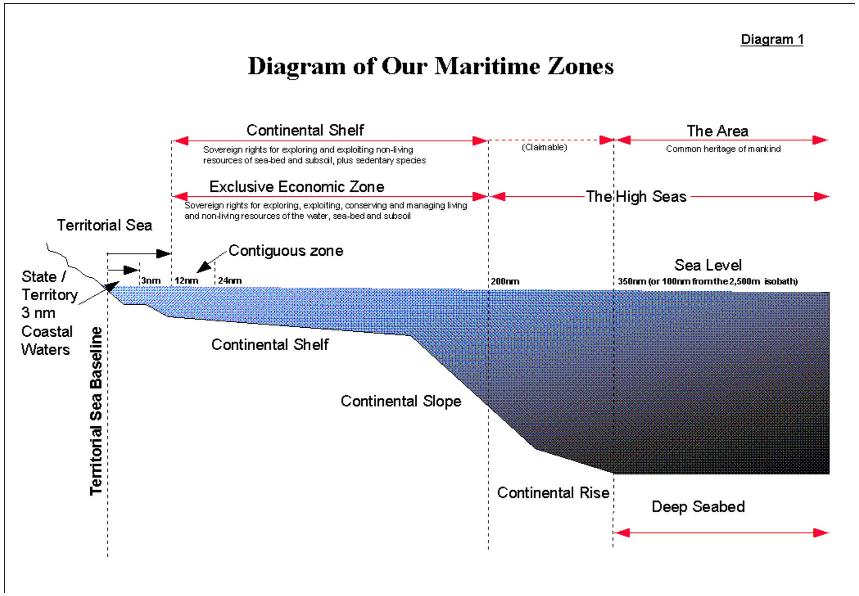
# Importance of ABNJ to coastal states and the Abidjan Convention region

ABNJ include:

- the Area (deep seabed) and
- the High Seas (ocean beyond the EEZ)

Although they are based to some extent on geographic features, they are essentially political boundaries.




Marine ecosystems on the other hand, are not defined by political boundaries. In fact, ocean ecosystems across the globe are interconnected to one degree or another. This interconnectedness – or **connectivity** – is one of the reasons ABNJ are important for coastal states.

The second reason is that the ABNJ have significant **resources** – both living and non-living – which could potentially be utilised by coastal states (and in some instances are already being utilised.)

# Connectivity

Marine ecosystems are interconnected not only because there are no physical boundaries between them, but because **current systems** (passive connectivity) and **migratory species** (active connectivity) regularly cross perceived boundaries - such as the jurisdictional boundaries between the EEZ and ABNJ (horizontal connectivity), and between shallow and deep water (vertical connectivity) .

Currents transport nutrients, particles, and marine organisms – especially plankton – as well as pollutants.

Migratory species include marine mammals, seabirds, turtles, fish and others.

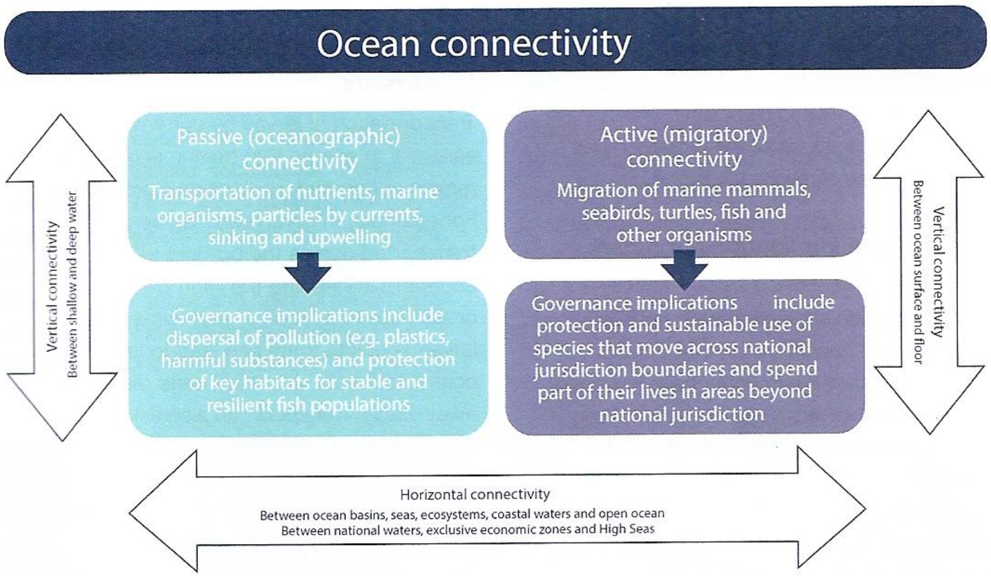


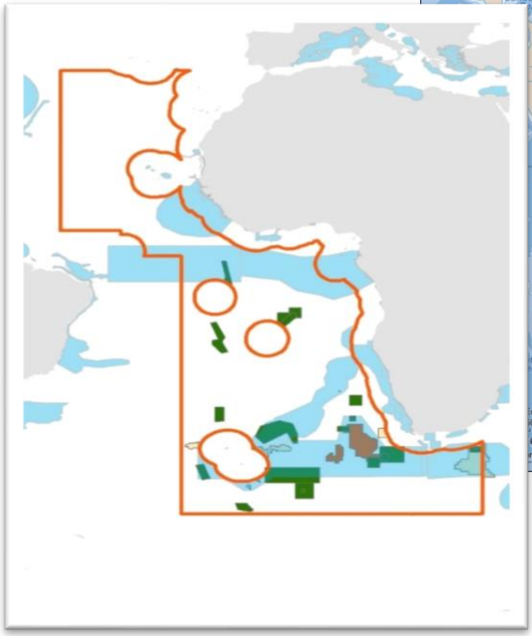

*Figure 1. Illustrates the broad categories of ecological connectivity: passive and active forms of movement and the horizontal and vertical dimensions of connectivity.* Source: UNEP WCMC

Managing marine ecosystems effectively, therefore requires an understanding of connectivity patterns between the water bodies concerned.

# Connectivity between ABNJ and EEZs in the ABC Region: Scope of the region

For purposes of the STRONG High Seas Project, the ABNJ for the region stretches from Mauritania to South Africa and from the EEZs of the coastal countries more or less to the Mid-Atlantic Ridge and including features straddling the Mid-Atlantic Ridge as appropriate.

It incorporates FAO Statistical Regions 34 and 47.

# Oceanographic features in the ABC Region

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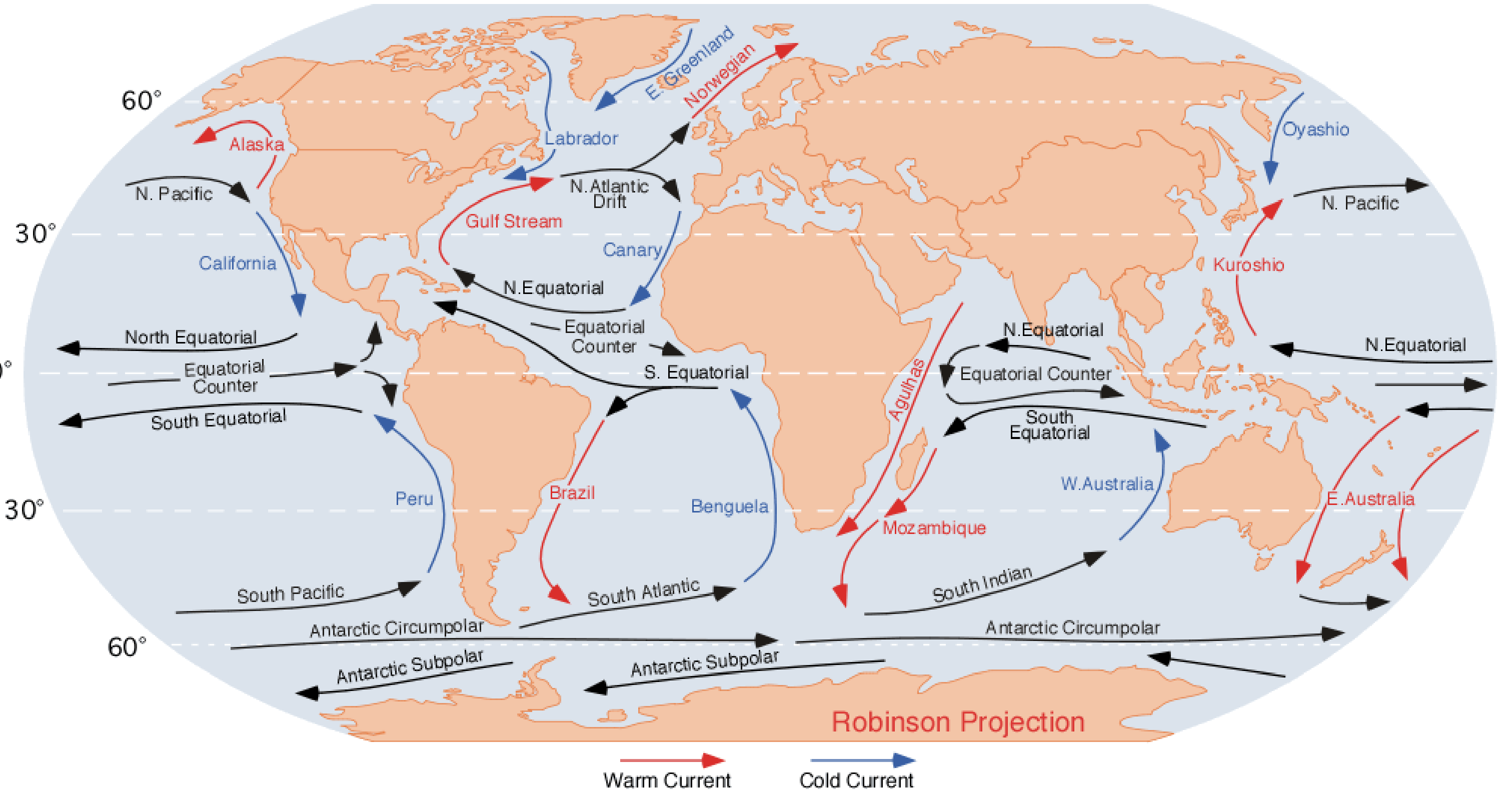
The major oceanic currents connect the coastal waters of Africa and America via the ABNJ. They also form gyres in both the northern and southern basins of the Atlantic.



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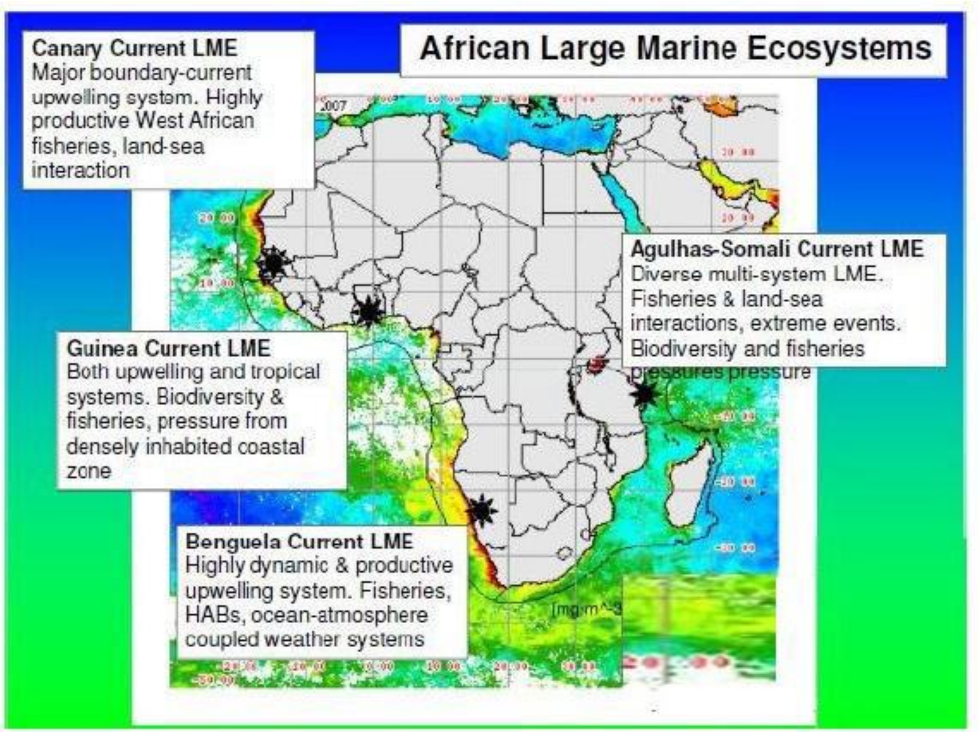
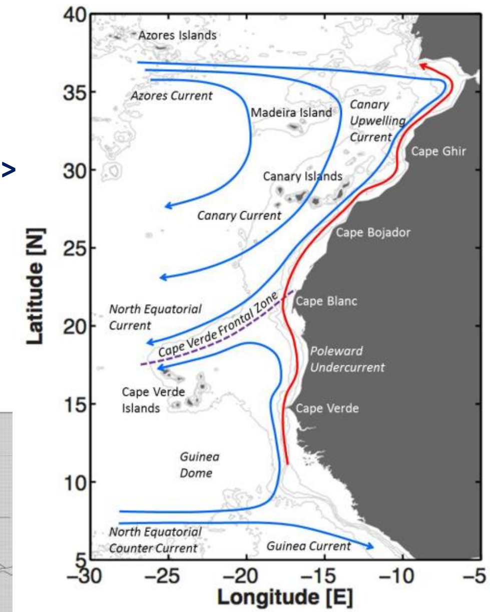
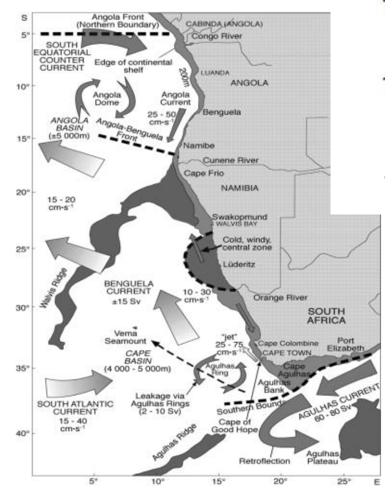
# LMEs of the ABC Region

The ABC Region incorporates 3 Large Marine Ecosystems : Canary Current LME, Guinea Current LME and Benguela Current LME. They are all characterised by upwelling and high productivity. They also all straddle the boundary between the EEZ s of relevant coastal states and the ABNJ.




CCLME currents ->



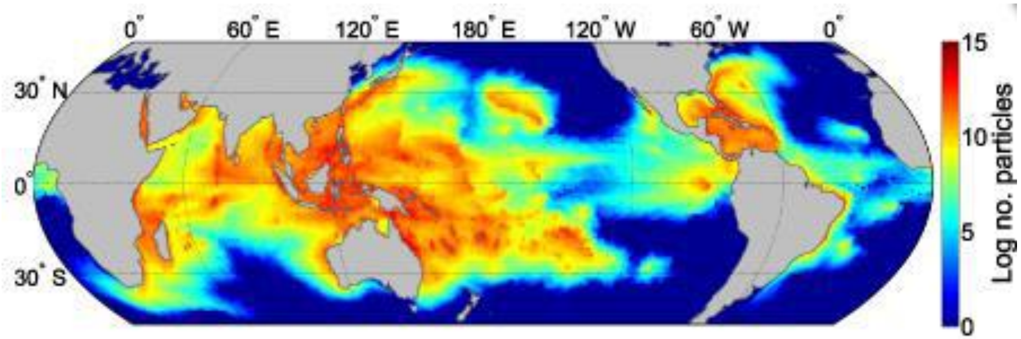




<- BCLME currents

# Examples of passive connectivity

- The Benguela current transports nutrient rich Antarctic water to the BCLME coast thereby supporting the highly productive fisheries
- West African coastal waters and coastal dynamics on the eastern portion of the adjacent ABNJ contribute coastal organic matter and nutrients which enhance food webs in ABNJ, thereby extending habitats for relevant species (Pelegri et al., 2005).

Dispersal of larvae and/or juveniles of many marine species is strongly influenced by current patterns.  Individuals are difficult to track, so most estimates are based on computer simulations.



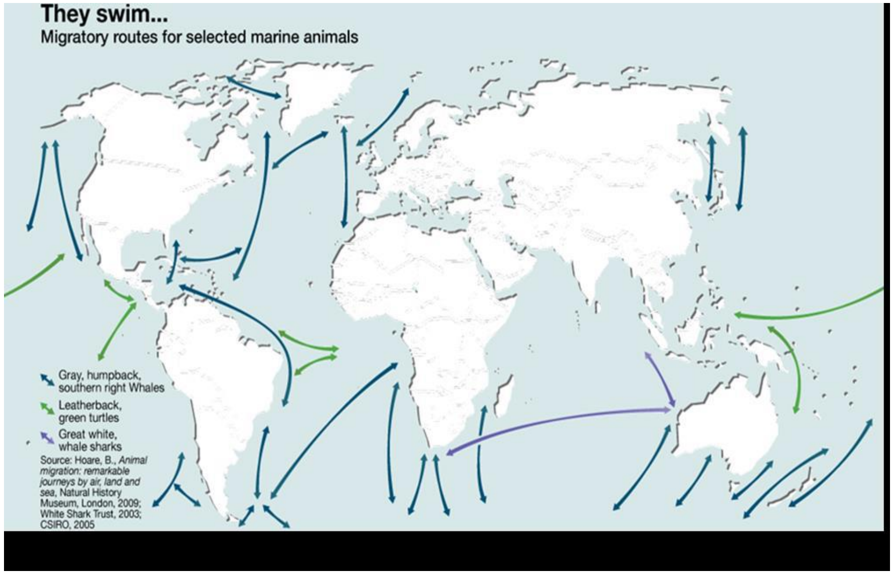

*Map of simulated coral 'larvae' trajectories aggregated over an 8-year model period (2003–11). The colour scale shows the log number of individual particles passing through each cell on a 1 × 1° grid (Source: Wood et al. 2014).*

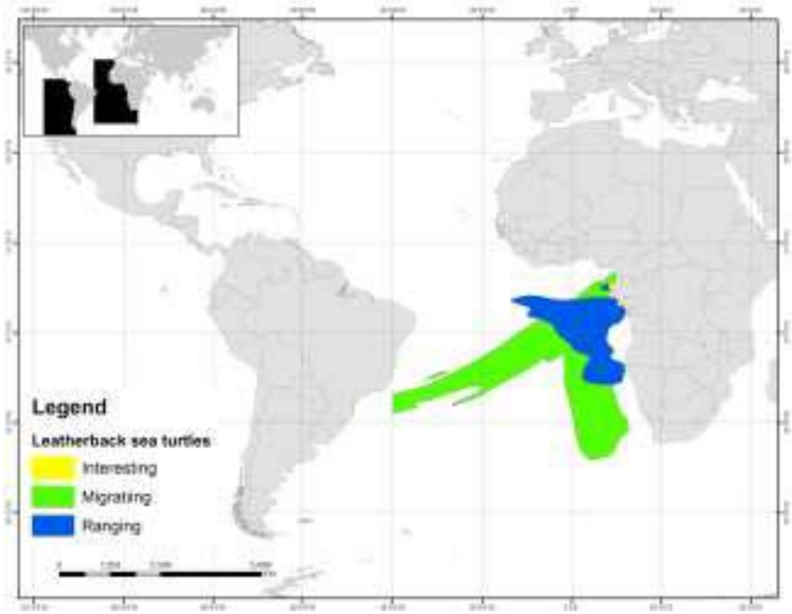
# Examples of active connectivity

Marine megafauna  such as mammals, seabirds and turtles are vectors of connectivity transporting energy, nutrient and other materials horizontally and vertically through the oceans.  As charismatic species, they also have socio-economic and cultural importance.

Humpback whales overwinter and breed in the Gulf of Guinea before migrating to Antarctic feeding areas.

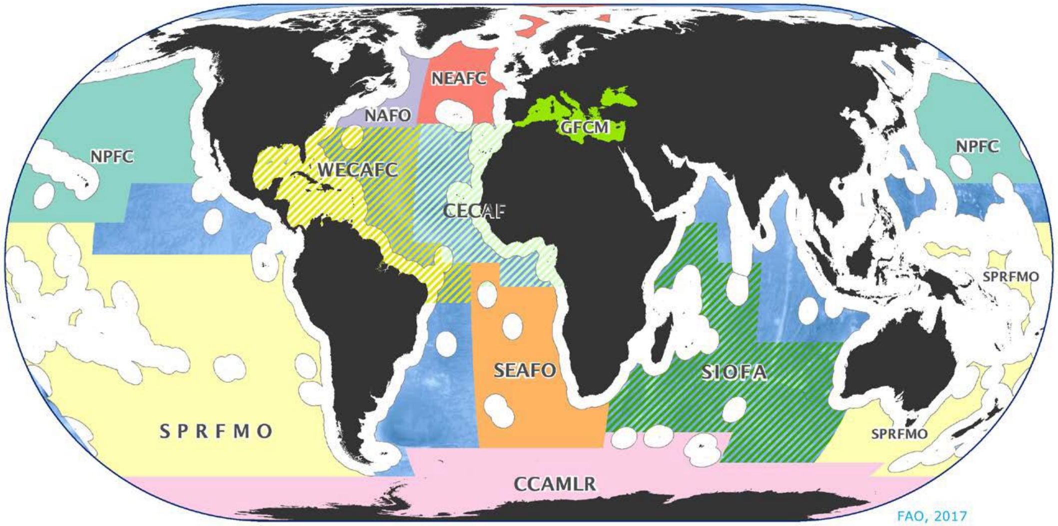
Leatherback turtles nest in Gabon but may then migrate across the Atlantic or southwards. Much of their time is spent in ABNJ



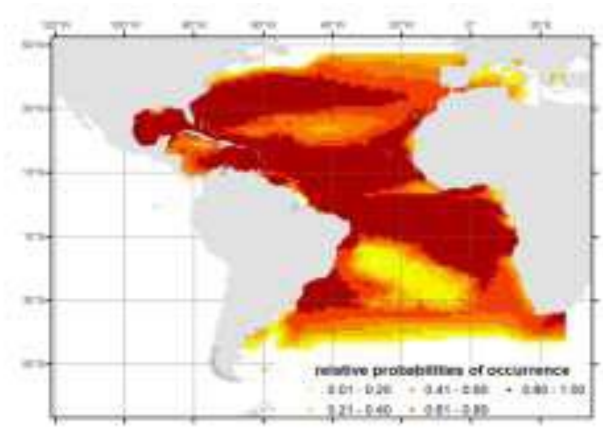



# Highly migratory (straddling) fish stocks

The major commercial tuna species are highly migratory and have extensive distribution in ABNJ and EEZs. Others include marlins, sailfish and swordfish (known as tuna-like species).




Distribution of Atlantic white marlin – endemic to the Atlantic

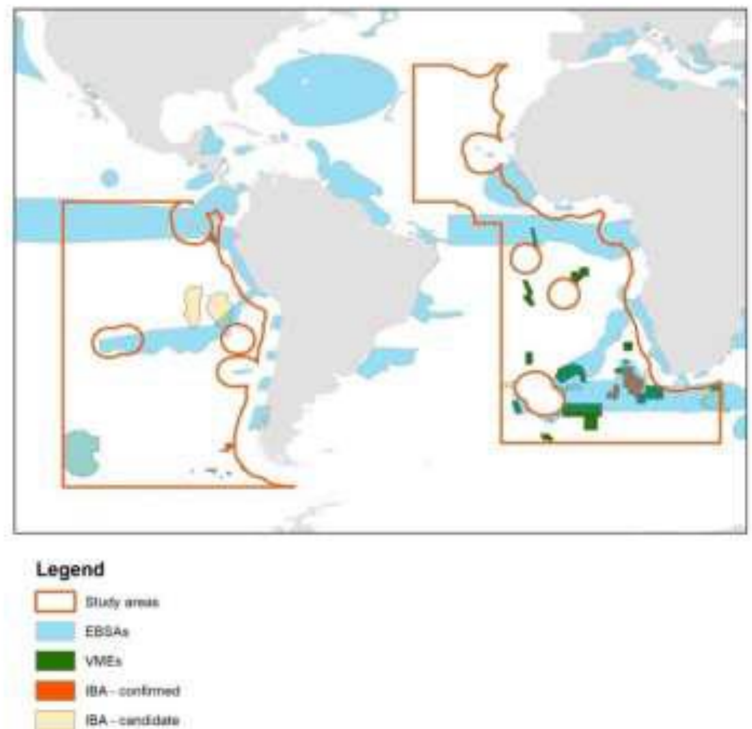


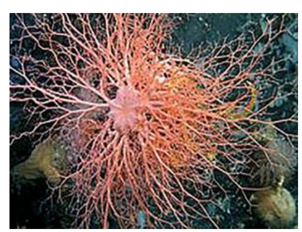

Tuna stocks are managed by regional fisheries bodies such as CECAF and SEAFO whose jurisdiction already covers relevant parts of the ABNJ.

# Resources of the seafloor

The deep seafloor is characterised by a variety of geomorphological features such as the abyssal plan, canyons, trenches, and ridges. Areas of particular importance in ABNJ are seamounts, hydrothermal vents  and manganese nodule fields.

Each of these provide habitats for unique biological communities including deep water corals, sponges and demersal fish, while many of them also contain important mineral resources. Many of them have been identified as areas of special ecological importance (EBSA’s; VME’s, and IBA’s.)

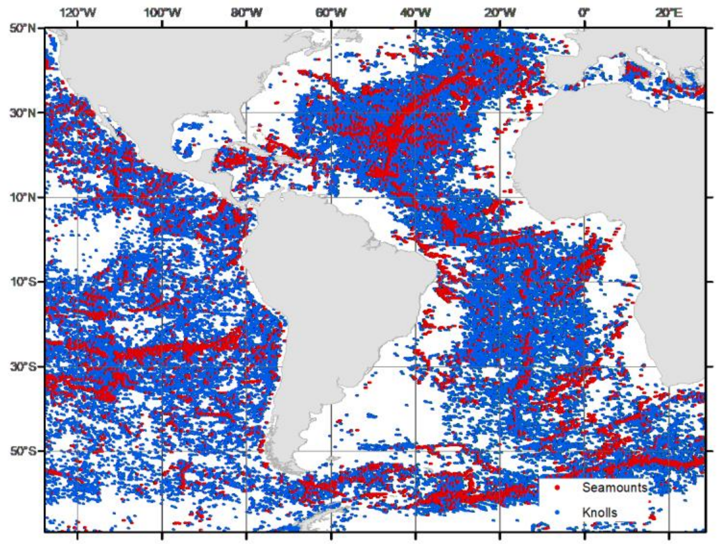


# Seamounts in the ABC Region

Seamounts are widespread in the ABC Region occurring both within EEZs and the ABNJ. They make up about 25% of global seamounts.

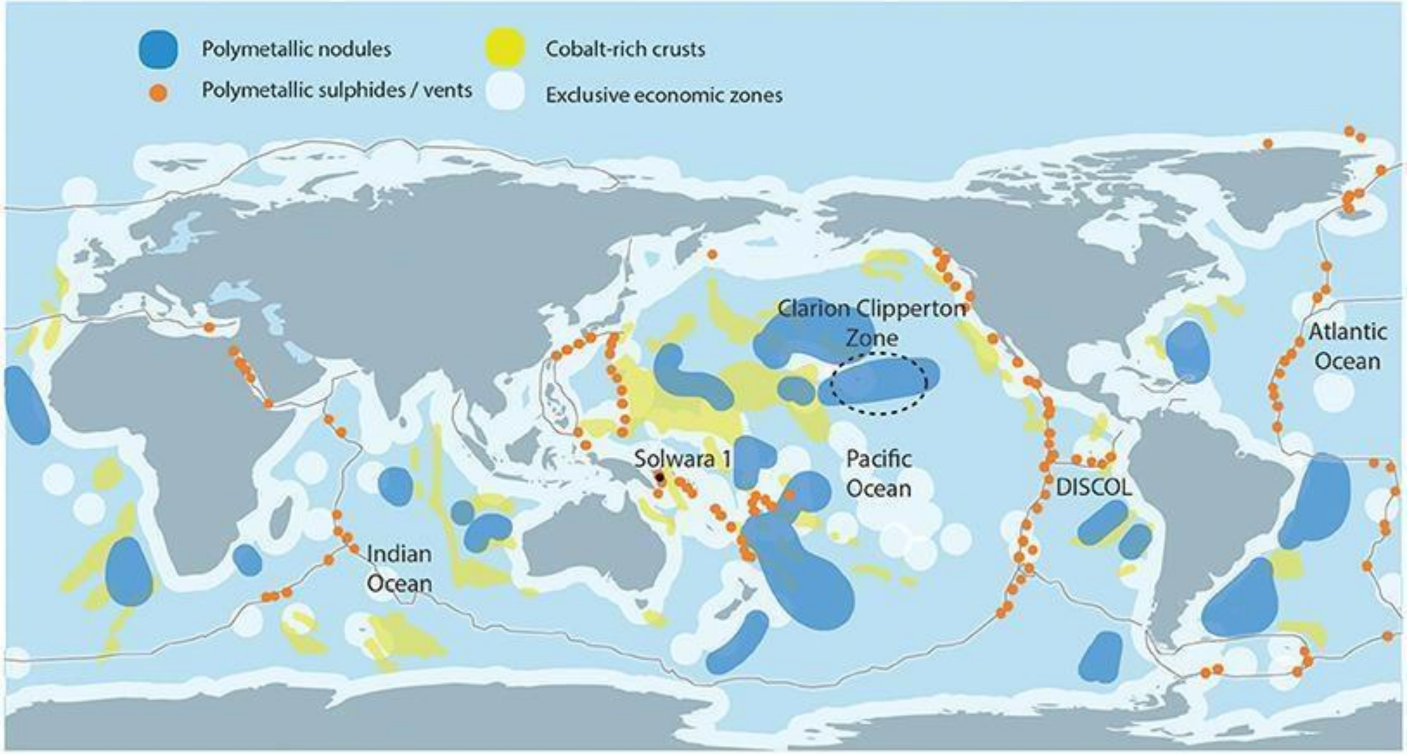
They are especially prominent in the Mid-Atlantic Ridge, Guinea Rise and Walvis Ridge - a significant seamount chain forming a bridge running from the African continental margin to the southern Mid-Atlantic Ridge.




Seamounts are often associated with upwelling currents and therefore high productivity. They are biological hotspots , and important as feeding and/or spawning grounds for charismatic megafauna species as well as for commercial species such as tuna and orange roughy.

# Mineral resources of the deep seafloor

The geological features of the deep seafloor are associated with marine mineral resources such as : (i) manganese nodules, (ii) cobalt-rich ferromanganese crusts, and (iii) polymetallic sulphides. While limited exploration has been done, areas in the ABC Region where such resources are likely to be found - both within EEZs and the ABNJ – have been identified.



# Marine Genetic Resources

Marine genetic resources (MGRs), including questions of their access and sharing of their benefits are one of the elements of the draft BBNJ Agreement.

MGR are essentially marine organisms or parts thereof (including genetic material) populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. Potential uses include pharmaceuticals, cosmetics, food, industrial processes and scientific research.

Examples:

- Plitidepsin isolated from a Mediterranean tunicate shows promise as an anticancer agent;
- A molecule produced by deep-sea organisms screens the harmful light rays that cause skin wrinkles;
- Insertion of genes from marine phytoplankton into commercial crops enhances omega-3 fatty acid content.

*Source: DOSI Policy Brief, 2019.*

Huge potential for the future but as present requires massive investment of capital and time to see any results.

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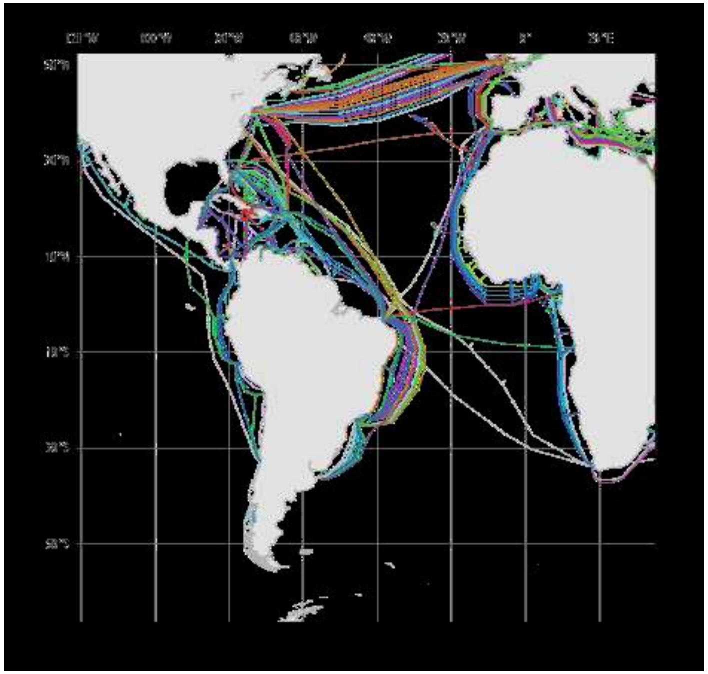
# Threats to biodiversity in ABNJ

The greatest threats to biodiversity in ABNJ are :

- Human activities in the ABNJ including:
  - fishing – although only 4.2% of the global catch comes from ABNJ it is a key threat to BBNJ;
  - shipping – impacts include pollution, noise and transfer of alien species;
  - mining - impacts include pollution and physical destruction of the seabed;
- Pollution – from various sources; and
- Climate change.

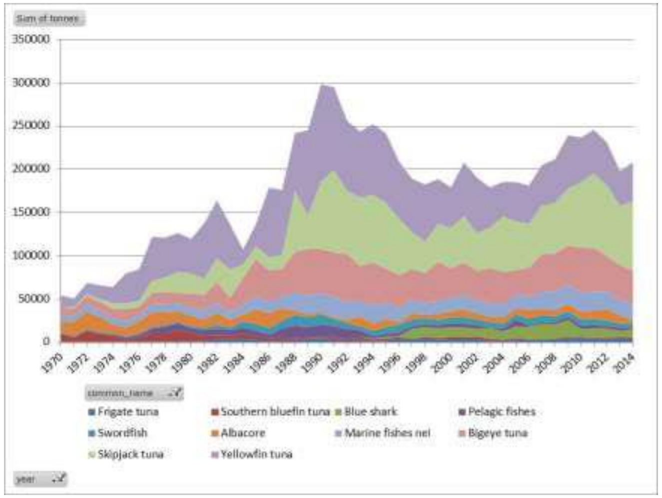


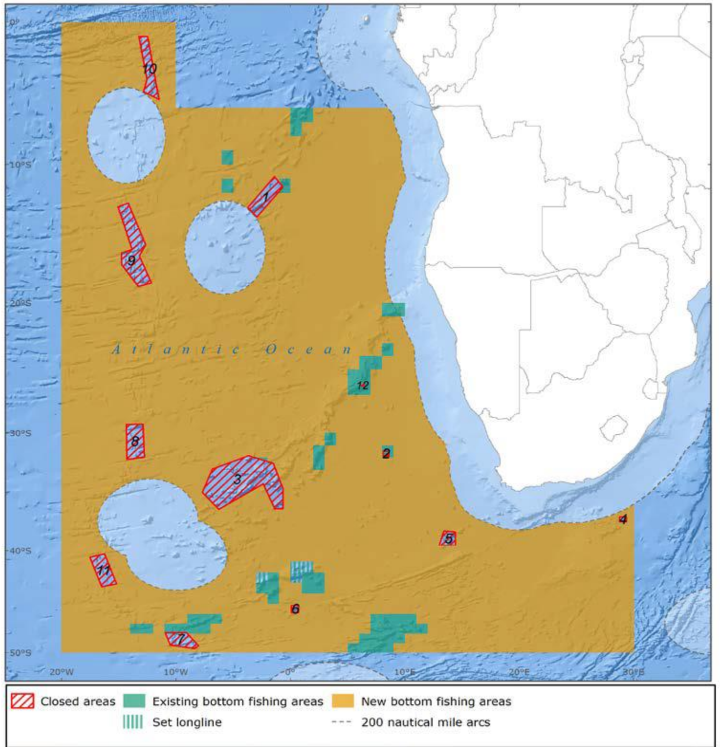
Another activity in ABNJ is the laying of communications cables and pipelines but this is relatively limited in the SE Atlantic and main impacts are during the construction phase.

# Threats to biodiversity in ABNJ: Fishing

<u>Fishing in ABNJ</u>: the main fisheries are tuna (61%); non-tuna pelagic fish (26%); pelagic squid (7%). <u>Impacts</u> include: overfishing, bycatch, (especially seabirds), removal of top predators, destruction of benthic communities (bottom trawling).

Fishing in ABNJ of SE Atlantic began in the 1950s but has tailed off since 2000. This included trawling over seamounts but SEAFO has introduced VME's which are closed to protect these ecosystems.



# Threats to biodiversity in ABNJ: Shipping

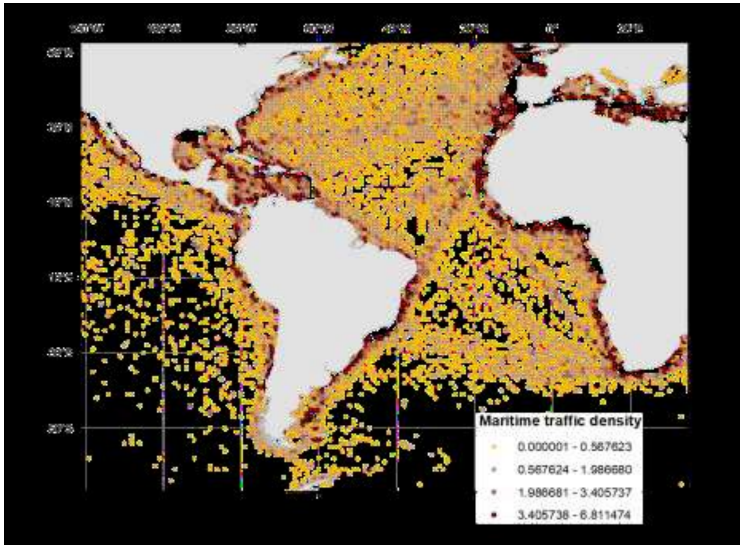
Shipping traffic in the SE Atlantic is already significant and expected to grow as trade increases. Potential impacts include pollution, noise and the transfer of alien species.

Pollution from ships can be:

- Operational (from engines & other on board equipment ; needs of crew and passengers; as well as anti-fouling coatings)
- Accidental (fuel and/or cargo).

Underwater noise from vessels can interfere with key biological functions, including communication, foraging, reproduction, navigation, and predator avoidance.

Alien species are transferred on ships hulls and ballast water.

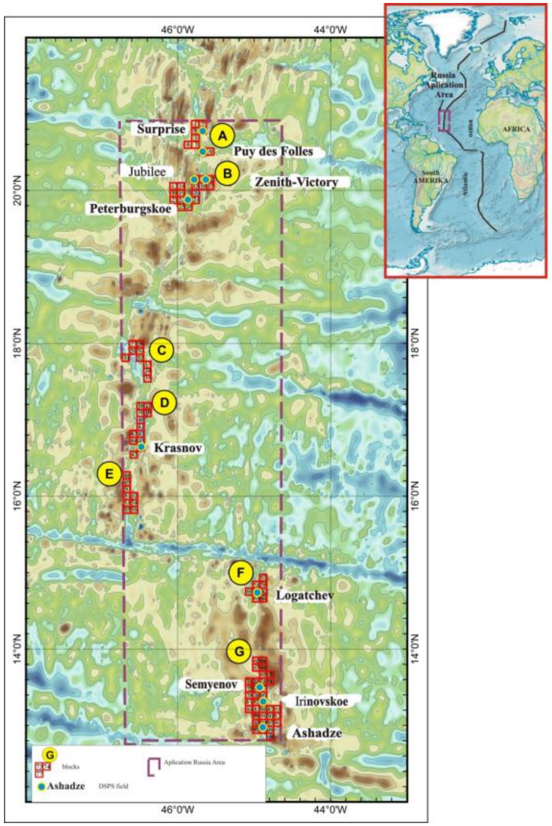


# Threats to biodiversity in ABNJ: Mining

Deep sea mining has significant potential to impact biodiversity. Impacts can result from physical disturbance and destruction of the seabed, smothering, sediment resuspension leading to plume formation, organic loading, and toxic contamination.

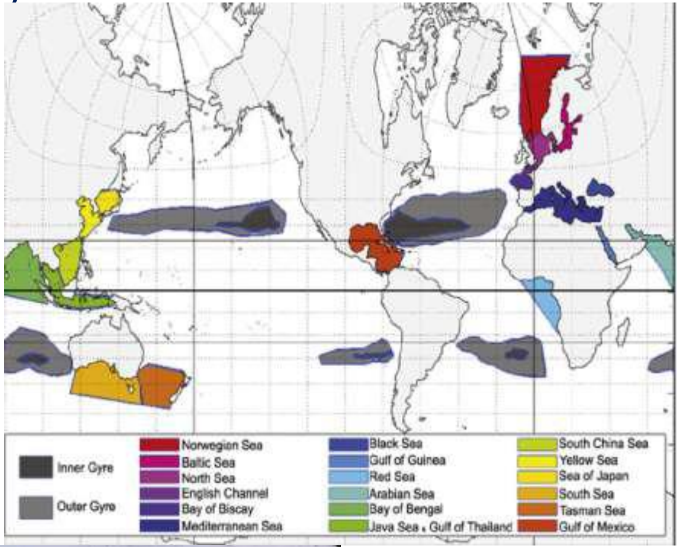
To date, minerals exploitation in the ABC region has been largely limited to offshore oil and gas and phosphate deposits (Namibia). Most of this has been in relatively shallow waters, although more recently it has moved into water depths > 1000m (off Angola). This has already impacted biodiversity – for example, disruption of breeding displays (songs) of humpback whales by seismic surveys.

It should also be noted that a Russian company has registered a number of exploration sites along the Mid-Atlantic Ridge.



# Marine debris

Key sources of marine pollution are land-based activities (80%), shipping and mining. Contaminants of concern in ABNJ include hazardous substances (eg. heavy metals, pesticides), suspended solids, hydrocarbons and marine debris (primarily plastics and micro-plastics); nutrients and CO2 (ocean acidification).

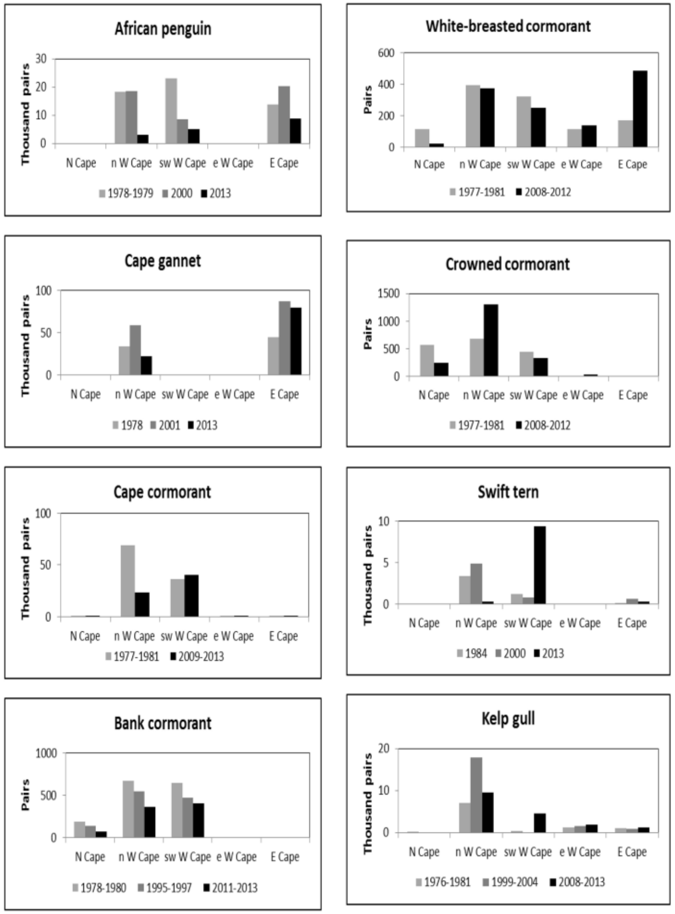



Due to its visibility, marine debris has been better studied in ABNJ of the ABC region than other pollutants. Floating debris has formed a "garbage patch" in the South Atlantic Gyre, while sunken debris has been reported in many deep sea areas, including the South Atlantic. It poses a threat to biodiversity as a result of ingestion and entanglement. Marine debris is also a vector for the transport of alien species.

# Climate change

Climate change has various impacts on the oceans including ocean warming, acidification, deoxygenation, reduced productivity and changes to ocean circulation. Since ocean currents disperse eggs and juveniles of marine organisms, changes to the strength or direction of currents influence the distribution of populations. Moreover, many marine species have adapted by changing their distribution patterns to match their habitat requirements – often by moving poleward or into deeper waters. In turn, this is affecting ecological connectivity.

Changes in the distribution of prey species (eg. Anchovy) of some seabirds in the southern Benguela - at least in part due to climate change - have resulted in an extension of their distribution eastwards along the SA coast. (Crawford et al, 2015)

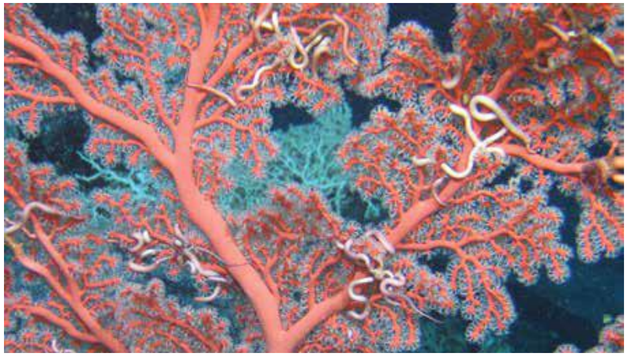


# Vulnerability of BBNJ

Much of the biodiversity of ABNJ is considered to be highly vulnerable for a variety of reasons: for example, characteristics such uniqueness, fragility (eg. corals), sensitivity to pollution, slow recovery, dependency on specific habitats/ migration routes, life history strategy, as well as proximity to human activities (shipping routes) which may disrupt spawning or feeding grounds.

The cold-water corals on seamounts, for example, play a key role supporting diverse biological communities. However, cold-water corals are highly vulnerable to mechanical damage and their recovery from disturbance is slow.

A study on nematodes in the Clarion-Clipperton Zone subjected to experimental mining showed that there had been no recovery after 26 years



# Governance of ABNJ

The connectivity between the ABNJ and EEZs means that effective governance of the ABNJ is necessary to protect and ensure sustainable use of coastal waters

Requirements:

- Improved understanding of ABNJ and connectivity
- Implementation of Area Based Management Tools
- Capacity (noting that capacity building & technology transfer are being considered as an element of the BBNJ negotiations).

The STRONG High Seas project has undertaken:

- An Ecological Baseline study which identified management and research priorities
- A capacity needs assessment.

# Management and research priorities

Management needs/priorities:

- Coordinated holistic approach spanning EEZ/ABNJ jurisdictional boundaries and which promotes integration of regional and global mechanisms;
- Ecosystem-based management;
- Above to be incorporated into the proposed BBNJ Agreement;
- Development of a representative network of MPAs incorporating areas in both EEZs and ABNJ;
- Application of ABMTs.

Knowledge gaps/ research priorities:

- Biodiversity of ABNJ off of WA to support EBSA identification and MPA establishment (including migratory routes of megafauna, improved understanding of connectivity…);
- Strategic environmental assessment of the ABNJ;
- Potential impacts of mining of the deep seafloor both on the floor itself and connected areas

# Scope of technical skills required

- Legal skills – including an understanding of international law, and the development of national policy and legislation on marine and coastal management issues (eg. ICZM, resource management, spatial planning etc)
- Identification and development of resources in ABNJ which could potentially contribute to Blue Economy initiatives
- Application of various management tools (ABMTs – such as VMEs, PSSA's, EBSA's, MPAs - EIAs etc)
- Implementation of the ecosystem approach
- Scientific research
- Technology transfer
- Data acquisition and information management.

**<u>NOTE</u>: Most of these skills are <u>not unique to ABNJ</u> but are also required for management on marine areas within the jurisdiction of coastal states**

# Recommendations on capacity building

| Option | Other opportunities |
|---|---|
| **SHORT TERM:** | |
| Regional short course on ABNJ/BBNJ | Priority for STRONG |
| Policy dialogue at regional level | STRONG HS, iAtlantic etc |
| Regional short course/s on management tools | Various existing courses |
| High Level Seminar on ABNJ/BBNJ (political will) | Priority for STRONG (COP 2020) |
| **LONGER TERM:** | |
| Primer/policy brief aimed at decision-makers | ABC Working Group? |
| Academic course on ABNJ/BBNJ | Available in US, section in IOI OGTP |
| Massive Online Open Course | |
| Webinars | |

# The way forward

The importance of ABNJ to the ABC Region has been acknowledged through:

- Decision 11/10 of CoP 11 requested the secretariat to set up a working group to "study all aspects of the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction under the Abidjan Convention".
- The ad hoc ABC ABNJ WG had its first meeting in June, 2019 and agreed that:
  - Member States should send 2 experts (1 legal, 1 scientific);
  - Relevant international and regional organisations could participate as observers;
  - Technical cooperation partners – including PROG - to provide technical expertise;
  - Various tasks.

# Tasks of the ABC ABNJ ad hoc WG

1. Recommendations re elements of BBNJ agreement (to CoP & Secretariat);
2. Main tasks:
   - Identify issues & topics to be studied;
   - Conduct relevant studies through sub-groups is required;
   - Strengthen capacity for ABNJ management particularly MSP (use of ABMTs?)
   - Make recommendations to CoP – including on a work programme & budget for the ad hoc WG

So how can the STRONG High Seas Project help?