

# POLICY BRIEF

## Space for conservation and sustainable use: area-based management in areas beyond national jurisdiction

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### 1. What is area-based management?

#### *Why area-based management?*

Marine areas beyond the limits of national jurisdiction contain ecosystems with marine resources and biodiversity of significant ecological, socioeconomic, and cultural importance. These areas and their resources are subject to increasing impacts from ongoing human activities and global climate change and their associated cumulative and combined effects (please refer to our briefs on [climate change](#) and [impacts of fisheries on open ocean ecosystems](#)). Because individual impacts interact, managing each activity largely in isolation is insufficient to conserve marine ecosystems and provide for sustainable use of marine resources. Multiple stressors must be managed in an integrated way, in the context of an ecosystem approach.

#### *Ecosystem approach context*

An ecosystem approach provides a purposeful method to better manage multiple impacts on environments holistically while maximising long-term economic, social and cultural benefits. Many different 'ecosystem approaches' exist (e.g., from those put forth by the CBD and FAO, to traditional/indigenous approaches). These approaches are highly compatible, and it is widely recognized that there is no one correct way to implement an ecosystem approach.

#### *Area-based management tools*

Area-based management encompasses the integrated, sustainable management of the full suite of human activities occurring in spatially defined areas ranging in size from discrete patches to larger ecosys-



tem scale areas. Applied in the context of an ecosystem approach, area-based management provides tools to respond to cumulative impacts. Area-based management tools (ABMT) include marine spatial planning (MSP), as well as marine protected areas (MPAs) and ecological networks, and “other effective area-based conservation measures” including indigenous, community and privately managed areas. Area-based management can also include sectoral tools, such as closure of certain vulnerable areas to fishing, shipping or mining. While no universally accepted definition exists, area-based management is generally expected to result in higher protection than exists in the surrounding area due to more stringent regulation of one or more human activities.

### *Marine protected areas (MPAs)*

MPAs can have a variety of objectives and offer differing degrees of protection, from strictly protected areas to areas that allow multiple sustainable uses with limited formal protections. They can provide comprehensive protection for ecologically or biologically significant areas, sustain spatially-dispersed habitats of migratory species, contribute to sustainable use by replenishing species and offering reference zones to inform management, be precautionary tools to protect characteristic habitats and species on a biogeographic basis, and provide insurance for the future by building resilience and giving ecosystems time to adapt. Research points to the significant biodiversity benefits of stronger, more strictly protected areas over less strictly protected areas. Table 1 contains the IUCN protected area management categories, and illustrates that MPAs can provide differing degrees of protection, and allow certain uses, depending on their management objectives.

#### **TABLE 1: IUCN Protected Area Management Categories**

- Strict nature reserve — Category Ia.
- Wilderness area — Category Ib.
- National park — Category II.
- Natural monument and Natural feature — Category III.
- Habitat management area and Species management area — Category IV.
- Protected landscape and Protected seascape — Category V.

Several definitions of protected areas and marine protected areas already exist, notably definitions by the CBD and by IUCN, which can provide a basis for developing a definition for the new international agreement for BBNJ (see table 2). Many national and regional entities also have existing definitions.

#### **TABLE 2: Definitions of protected areas and marine protected areas**

- IUCN: a ‘**protected area**’ is as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”
- CBD (Article 2): a ‘**protected area**’ is “a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives”
- CBD (decision VII/5): a ‘**marine and coastal protected area**’ is “an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings”

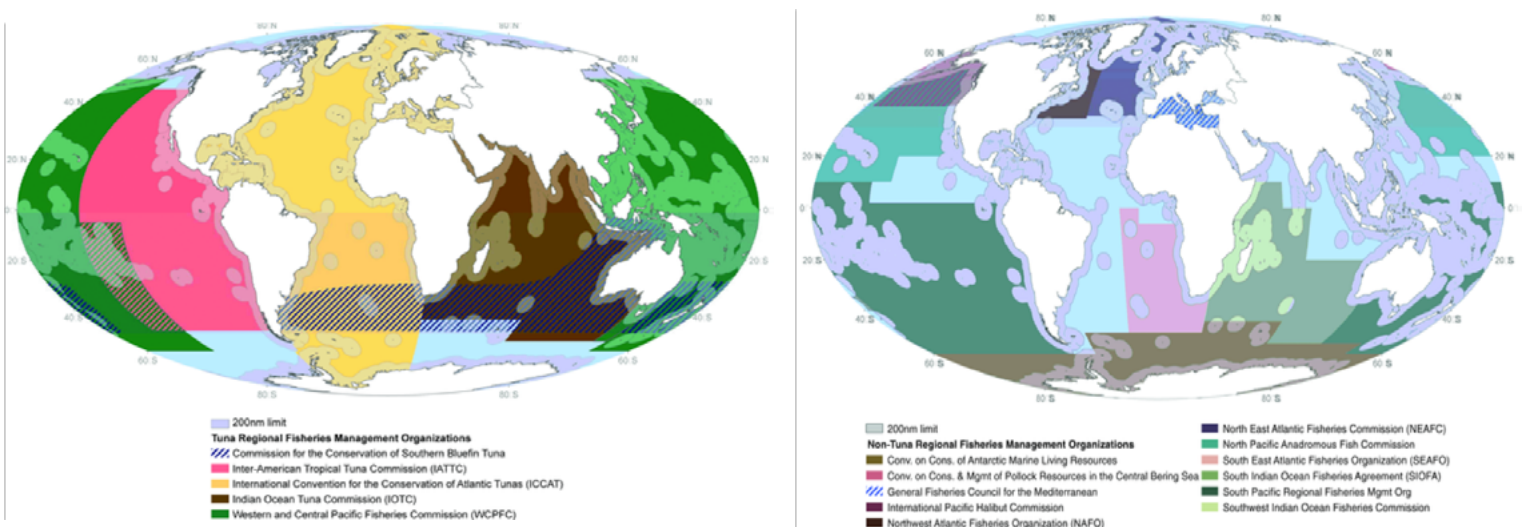
## Marine spatial planning (MSP)

While MPAs and networks of MPAs form the backbone for delivering conservation and sustainable use outcomes, marine spatial planning (MSP) provides a way to integrate human activities without compromising those conservation values. MSP provides a method to implement the ecosystem approach through active planning involving all stakeholders. Through MSP, the stakeholders can put forward their vision for an area, identify where human activities currently occur and where it might be desirable for them to occur in the future; identify actual or potential conflicts between different ocean uses, as well as between human activities and desired conservation outcomes. The resulting spatial plan can provide for sustainable use, while also conserving specific areas through MPAs and other appropriate measures in a manner that avoids potential conflicts.

While area-based management cannot remediate all actual and potential impacts on marine ecosystems and species, it does provide a vital basis for management of most cumulative stressors and may help bolster resilience to stressors that cannot be addressed directly.

## 2. Challenges to area-based management in ABNJ

Implementation of area-based management in ABNJ faces a number of challenges, including technical and governance challenges. On the technical side, the special characteristics of the ABNJ environment (e.g., its remoteness, depth, and dynamic nature) have resulted in limited scientific information and limited observing programs. This situation is exacerbated by the lack of funding mechanisms for data collection to inform management in ABNJ. Both of these challenges have also led to questions regarding the potential for monitoring and enforcement of ABMTs in ABNJ. However, new technology (e.g., Automatic Information Systems (AIS; please refer to our brief on [Satellite Tracking of Fisheries](#)) and Vessel Monitoring Systems (VMS) have been shown to be effective for monitoring and enforcement of offshore ABMTs.

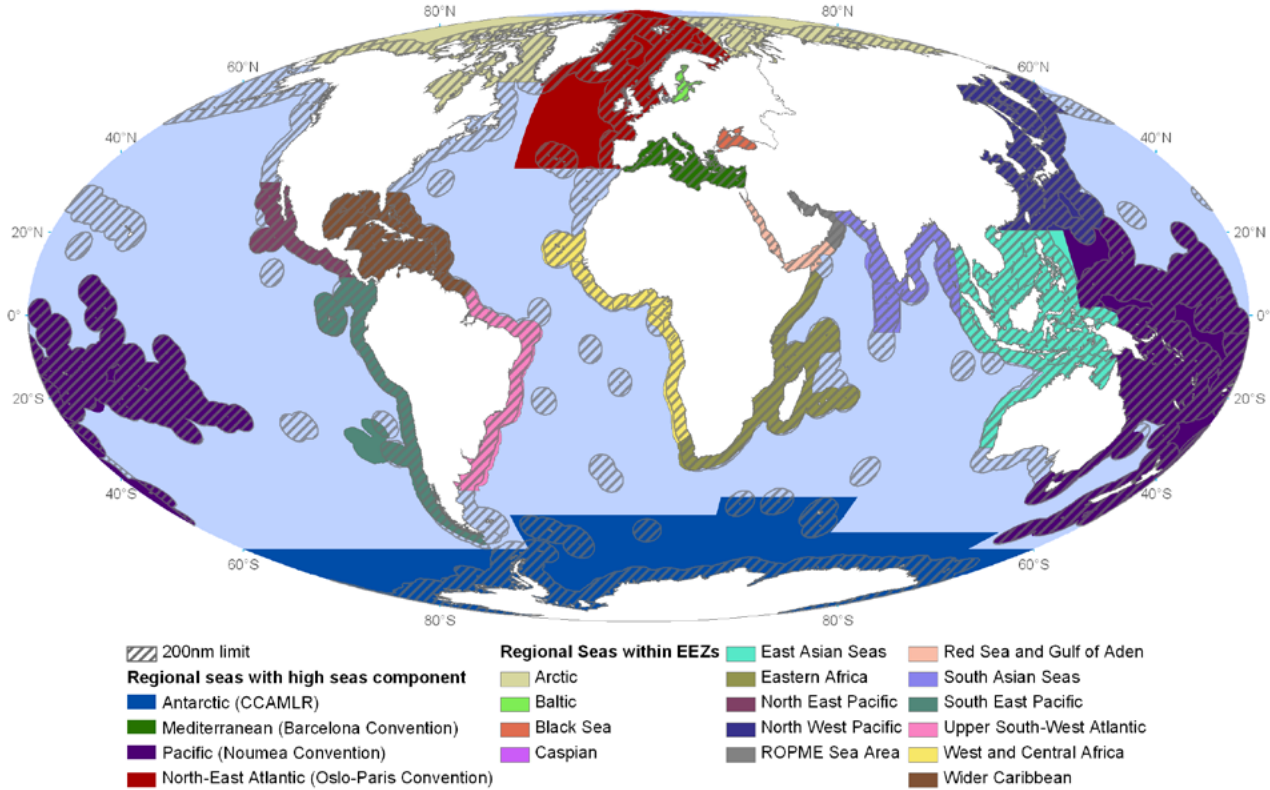


**Figure 1a:** Regional Fisheries Management Organizations that manage highly migratory species, mainly tuna.

**Figure 1b:** Regional Fisheries Management Organizations, which manage fish stocks by geographical area.

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From a governance perspective, there are at least four serious obstacles to the development and implementation of ABMTs in ABNJ. The absence of overarching governance principles for ABNJ results in different actors having very different interpretations of how ABNJ should be used, further resulting in strong differences of opinion about how and when to use ABMTs. The fragmented institutional framework for managing resources in ABNJ limits the ability and potential effectiveness of ABMTs. For example, areas of ABNJ have been set aside by fisheries as Vulnerable Marine Ecosystems (VMEs) that are also leased for exploration for deep-sea mining. These uses are not compatible and the lack of coherence between management measures represents a strong lack of coordination between management authorities. The lack of an overarching mechanism to implement ABMTs in ABNJ also limits the objectives of the potential measures that can be developed to those of the sectoral management organizations. Finally, geographic and thematic gaps in sectoral governance or competence also undermine the use of ABMTs in ABNJ (again, please refer to our policy brief on [Satellite Tracking of Fisheries](#)). In the case of RFMOs, this means limiting their utility to those species or stocks and regions that are being managed (Fig 1a & b), while in the case of the regional sea organizations (RSOs) it means limiting the area to be considered for ABMTs for the conservation of biodiversity to the four RSOs whose competence extends into ABNJ (Fig. 2).

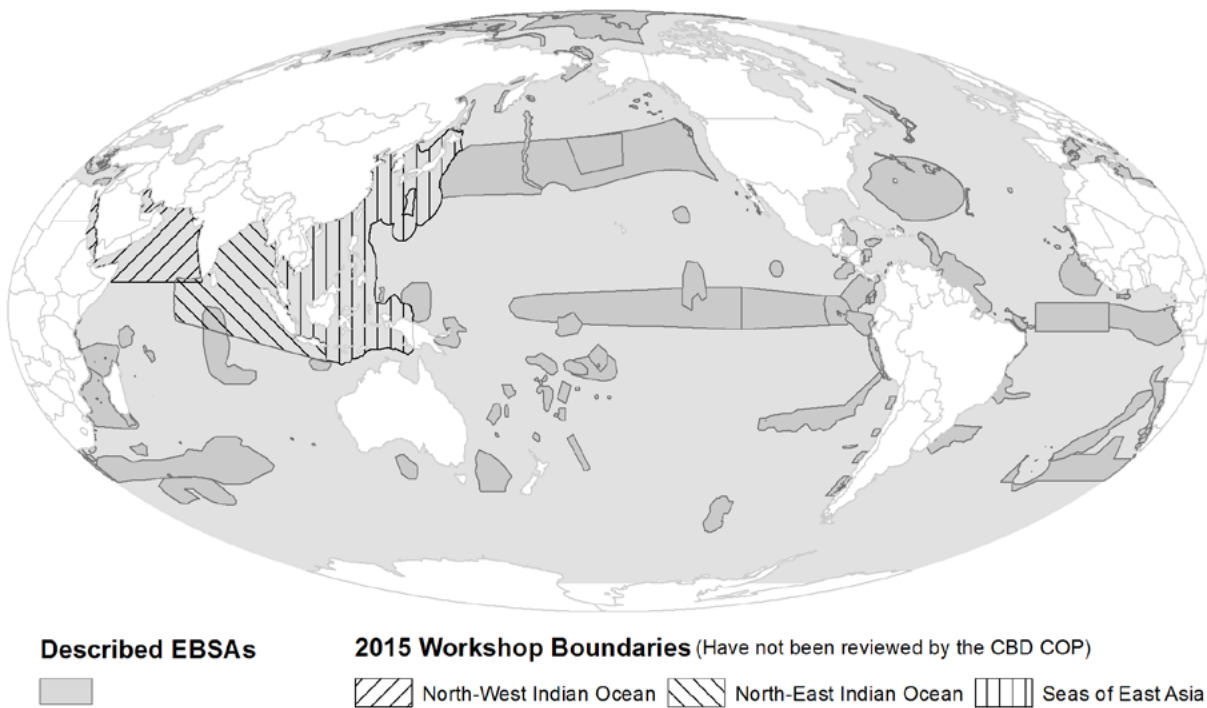


**Figure 2:** Regional seas organizations. Only four regional seas organizations (the Mediterranean through the Barcelona Convention; the Southern Ocean through the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR); the North East Atlantic through the OSPAR Convention and the South Pacific through the Nouméa Convention) currently have a mandate covering ABNJ. Reproduced with permission from Ban et al. 2014

### 3. Existing area-based management measures in ABNJ

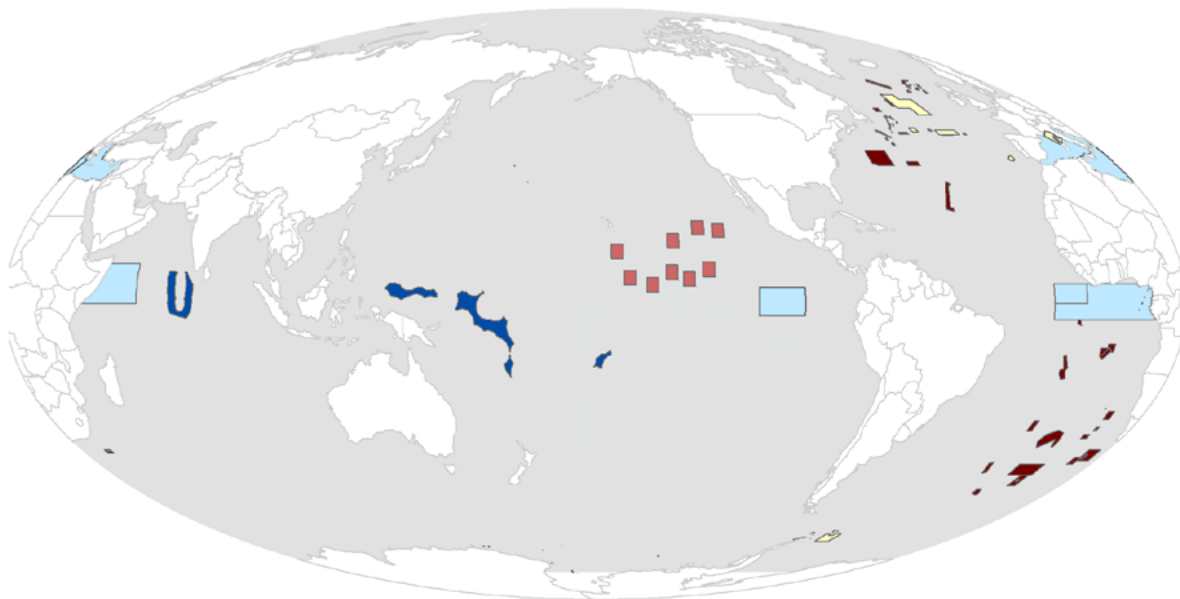
#### *Existing efforts in ABNJ*

Current efforts to identify priority ocean areas for protection or enhanced management in ABNJ include FAO Vulnerable Marine Ecosystems (VMEs); IMO Particularly Sensitive Sea Areas (PSSAs), though these have not to date been widely applied in ABNJ; International Seabed Authority Areas of Particular Environmental Interest (APEI) and Preservation Reference Zones (PRZs); and limited MPAs designated by RSOs. Beyond these efforts for which we have examples in ABNJ, UNESCO is also considering the designation of World Heritage Sites in ABNJ. While not an ABMT, it is critical to include the work done by the Parties to the CBD to describe Ecologically or Biologically Significant Areas (EBSAs) through 12 regional workshops (Fig. 3). The information generated by those workshops is now supporting management decisions in a variety of sectors. It should be reiterated that, unlike the other efforts listed, the CBD EBSAs are purely a scientific exercise and do not include management measures.

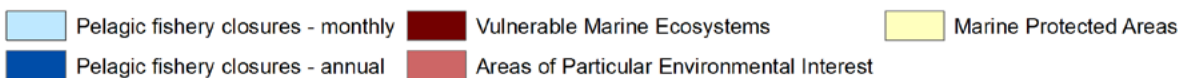


**Figure 3:** CBD Ecologically or Biologically Significant Areas (EBSAs) which have been described thus far, as well as the boundaries of 2015 EBSA workshops, the results of which have not yet been reviewed by the Conference of the Parties (COP).

Most area-based management measures currently undertaken in ABNJ only restrict specific sectoral activities. There is presently no existing organization authorized to set up MPAs and other area-based management tools that are integrated, covering the full suite of activities which may impact biodiversity in ABNJ. RSOs have a broad environmental mandate and may establish MPAs, but most are limited to national waters. Four Regional Seas Programmes currently have a mandate covering ABNJ and three



#### Examples of existing Area-based Management Tools in ABNJ



**Figure 4:** Examples of existing area-based management tools applied in ABNJ, including pelagic fishery closures, FAO Vulnerable Marine Ecosystems, ISA Areas of Particular Environmental Interest, and marine protected areas.

[the Mediterranean Action Plan, OSPAR, and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) in the Southern Ocean] have already established MPAs. However, except in the case of CCAMLR where competencies for fisheries and biodiversity are contained within the same authority, the established MPAs do not have the ability to regulate all human uses within their boundaries due to their sectoral mandates.

#### *Existing criteria*

Biodiversity values can be prioritized to help identify areas for management and protection. Existing initiatives use criteria to identify and describe areas that are ecologically or biologically significant (the CBD EBSA criteria), or that are vulnerable to specific sectoral activities, such as bottom fishing (the VME criteria) and shipping (the IMO PSSA criteria). While these criteria are applied for different purposes, they also have many similarities, as noted in Table 3 below. It should be reiterated that the CBD EBSA criteria are only used for scientific and technical purposes, and do not have management implications.

The new International Agreement for biodiversity beyond national jurisdiction will likely also require criteria that will assist in identifying priority areas for enhanced management and protection, including through the creation of a network of ecologically representative, well connected and effectively managed marine protected areas beyond national jurisdiction. Selecting appropriate criteria will benefit from a study of existing criteria (above), and from a consideration of the objectives that such a network of MPAs and other area-based management tools might have (see section 4 below).

**TABLE 3: Selected existing criteria**

<b>CBD EBSA Scientific Criteria</b>	<b>FAO VME Criteria</b>	<b>IMO PSSA criteria</b>	<b>UNESCO WHS criteria (*only the four that pertain to natural heritage)</b>
1. Uniqueness or rarity 2. Special importance for life history of species 3. Importance for threatened, endangered or declining species and/or habitats 4. Vulnerability, fragility, sensitivity, slow recovery 5. Biological productivity 6. Biological diversity 7. Naturalness	1. Uniqueness or rarity 2. Functional significance of the habitat 3. Fragility 4. Life-history traits of component species that make recovery difficult 5. Structural complexity	1. Uniqueness or rarity 2. Spawning or breeding grounds 3. Critical habitat 4. Fragility 5. Productivity 6. Diversity 7. Naturalness 8. Dependency	VII. Natural phenomena or exceptional natural beauty; VIII. Major stages of Earth's history IX. Significant ongoing ecological and biological processes X. Important and significant natural habitats for in situ conservation of biological diversity, or conservation.

In addition, it is critical to recognize that the criteria presented in Table 3 are site-criteria, not network criteria. That is, they help identify or describe the importance of an individual area, rather than describing how a group of areas work together to achieve overarching management objectives. While some of the benefits of networks of MPAs are generated from simply scaling up the benefits of individual sites, the real value in a network stems from what groups of MPAs can accomplish that a single site cannot. These characteristics are well described by the network criteria laid out in CBD Decision IX/20 Annex II: EBSAs, Representativity, Connectivity, Replication, and Adequate and Viable Sites (see table 4 below). The first criterion, EBSAs, simply focuses attention on whether or not the network adequately incorporates known areas of importance. An individual site cannot encompass all known areas of importance efficiently; thus networks are required. To ensure protection of all habitat types, the representativity of an entire network must be considered. Again, no single site can guarantee that ecosystem services provided across a range of habitats will be conserved. Connectivity of a network ensures the integrity of functional linkages between two or more sites, allowing for meta-population dynamics and conservation of highly-migratory species with life history stages hundreds or thousands of kilometres apart. By replicating site, or including more than one MPA of the same type in a network, managers can also better address systemic risks. That is, if one site is lost due to an unforeseen event, the biodiversity within and ecosystem services provided for by that site will still be found elsewhere within the network. Together with connectivity, these two network objectives can provide the opportunity for sites that have experienced extreme events (natural or anthropogenic) to be recolonized by other similar sites. Lastly, adequacy and viability can be site-level criteria, but in the context of a network the subject of the criteria (adequate for what?) are scaled up to a seascape perspective that considers the adequacy of the network to ensure continued delivery of ecosystem services in a sustainable manner.

While sectoral management measures may afford specific sites protection from those activities under their mandate, only cross-sectoral efforts at a regional or global scale can address the development of an “ecologically representative and well-connected system of protected areas and other effective area-based conservation measures” as called for under Aichi Target 11, and as required to fulfill Sustainable Development Goal 14.

**TABLE 4: Scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats (CBD decision IX/20 Annex II).**

Required network properties and components	Definition
Ecologically and biologically significant areas	Ecologically and biologically significant areas are geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics, or otherwise meet the criteria as identified in annex I to decision IX/20.
Representativity	Representativity is captured in a network when it consists of areas representing the different biogeographical subdivisions of the global oceans and regional seas that reasonably reflect the full range of ecosystems, including the biotic and habitat diversity of those marine ecosystems.
Connectivity	Connectivity in the design of a network allows for linkages whereby protected sites benefit from larval and/or species exchanges, and functional linkages from other network sites. In a connected network individual sites benefit one another.
Replicated ecological features	Replication of ecological features means that more than one site shall contain examples of a given feature in the given biogeographic area. The term “features” means “species, habitats and ecological processes” that naturally occur in the given biogeographic area.
Adequate and viable sites	Adequate and viable sites indicate that all sites within a network should have size and protection sufficient to ensure the ecological viability and integrity of the feature(s) for which they were selected.



## 4. Guiding principles and approaches for area-based management

Application of area-based management tools is best undertaken consistent with guiding approaches and principles, which might include the following:

- i. Ecosystem approach
- ii. Integrated approach
- iii. Decision-making based on the best available scientific information
- iv. Precautionary principle/approach

The importance of the first two principles was laid out at the beginning of this document, as they are critical overarching concepts under which area-based management falls. In regards to best available scientific information, it should be noted that substantial scientific information continues to be collected by research institutions worldwide. Therefore, collaboration with, and coordination amongst, the scientific research community is key to making this information available for the purposes of area-based management in ABNJ. A substantial amount of scientific information has also been collated and made available through the CBD process to describe EBSAs; by regional organizations and their scientific assessment processes; and by the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects (Regular Process). In many cases the best available scientific information may also include traditional ecological knowledge. This is particularly true when it comes to improving our understanding of the full life history of migratory species, where species spend parts of their lives within, and parts beyond, national jurisdiction.

Lastly, ABMTs, and marine protected areas in particular, are frequently cited as being part of a precautionary approach to management. It is important to note that the role of MPAs within a precautionary approach is not as a measure to be enacted in reaction to particular events, but as a proactive insurance against unknowns in the system and failures in governance. To play this role, they must be in place before evidence of harm is found.

## 5. Objectives of area-based management

### *The role of objectives*

Area-based management tools are not a goal in themselves, but are tools to address the ecological or social or cultural impacts (specific or diffuse) generated by anthropogenic activities and, in some cases, act within limited timeframes. Thus, management may have a variety of objectives, and depending of what those objectives are, different types of tools and stringency of regulation may be employed. For example, MPAs may range from strictly protected marine reserves to areas where uses compatible with the MPA objectives are allowed.

For ABNJ, the key primary objective should be the long-term conservation of biodiversity and associated ecosystem services. Under this overarching goal, other, more specific objectives can be adopted for given areas.

### *Existing objectives for ABMT in ABNJ and gaps*

A critical consideration to discussions of any new international legally binding agreement is the degree to which it affords Parties the ability, through any mechanism, to apply ABMTs to achieve the wide array of objectives for which they are currently utilized within national jurisdictions. In the United States, the objectives of the national system of MPAs fall under three categories: Natural heritage, Cultural heritage and Sustainable production. It bears reiterating that fisheries objectives are only one com-

ponent guiding the overall governance framework. More importantly, there are currently no avenues to develop MPAs with cultural heritage objectives in ABNJ. Further, beyond the four RSOs that have competency in ABNJ, there exist no avenues to develop MPAs with natural heritage objectives. A logical extension of the fact that there are many objectives for which MPAs are used that are not related to sustainable production (e.g., to conserve and manage unique or rare species, habitats, and associated communities”), is that no single human use (related to food production or otherwise) holds a monopoly on how and when ABMTs are used. Each objective is valid and only through cross-sectoral (or even trans-sectoral) cooperation can equity across objectives be achieved.

Another currently missing objective is that of increasing resilience of specific ecosystems to the impacts of climate change. Area-based management can not only deal with multiple local human impacts, but can also play a role in increasing the resilience of biodiversity to the impact of climate change, including acidification, warming and deoxygenation. While reducing CO<sub>2</sub> emissions is the key action for combating climate change impacts, area-based management can be used to relieve the pressure of other stressors, thus buying time to help marine ecosystems adapt. In addition, some researchers argue that identifying and protecting sites that are particularly resilient to the impacts of climate change (including acidification) is a potentially important adaptation strategy, as these sites may act as refuges of important biodiversity in the future.

Finally, newer objectives, such as providing acoustic refuges for marine species from sources of ocean noise, might also be considered.

## **6. Questions of scope – what information should a proposal for area-based management contain?**

Proposals for area-based management should be in line with the principles listed in section 4. Commonly, proposals include a description of the area and its geographic extent; a scientific review of its biodiversity values; an assessment of threats to those values; impacts of area-based management on ocean users vs. long-term benefits; and a proposed management plan, including objectives and tools, that are designed to address the threats described.

To comply with the overarching principle that any process to develop ABMTs will be based on the best available information, proposals should contain relevant knowledge such that it can be reviewed in a scientifically rigorous manner. The review of such information would be improved by the development of a peer-reviewed scientific board under the new agreement to support and inform the decision-making process by the Parties, and to make recommendations for further research. It is also critical that ongoing open data collection and storage be supported by Parties and competent organizations.

## **7. Conclusions**

Area-based management will be a vital tool for achieving long-term conservation and sustainable use of biodiversity under the new International Agreement. In particular, ABMTs are crucial for addressing the impacts from ongoing human activities and global climate change and their associated cumulative and synergistic effects. In addition to the guiding principles, objectives and criteria discussed here, it is important that the process of identifying, proposing, designating and managing areas be open to all stakeholders. The process will also call for collaboration and coordination amongst existing and new measures, and for putting in place mechanisms for monitoring and adaptive management.