Concept Paper

Partnership dialogue 2: Managing, protecting, conserving and restoring marine and coastal ecosystems

Concept paper for Partnership dialogue 2, prepared in response to the General Assembly resolution 70/303 on managing, protecting, conserving and restoring marine and coastal ecosystems, is covering SDG targets 14.2 and 14.5. The concept paper for this partnership dialogue is based on inputs received from Member States, the UN system and other stakeholders. Given the word limit for the concept paper not all inputs have been included in their entirety, but they can be accessed under: https://oceanconference.un.org/documents.

I. Introduction

Marine and coastal ecosystems, which include natural assets such as marine living resources and a range of important habitats or features, such as mangroves, coral reefs, seagrass beds, coastal tidal marshes, seamounts, thermal vents and cold water corals, are crucial for human well-being and sustainable development. They provide humans with food, water, medicines, construction materials, energy, transport, shoreline stabilization, coastline protection and erosion prevention, climate regulation, oxygen production, maintenance of biodiversity, as well as recreation, aesthetic, cultural, religious and spiritual services. Marine and coastal ecosystems act as carbon sinks absorbing annually about one-fourth of the total annual anthropogenic emissions of carbon dioxide.[1] They provide a vital basis for the livelihoods of many coastal communities, particularly resource-dependent communities in developing countries. The ecosystem services marine and coastal ecosystems provide have substantial economic value – estimated by studies on the order of trillions of US dollars annually.[2]

II. Status and trends

Marine and coastal ecosystems are increasingly threatened, degraded and destroyed by marine- and land-based human activities. Major adverse impacts to ecosystems stem from climate change[3], unsustainable extraction of marine resources[4], physical alteration and destruction of marine and coastal habitats and landscapes and marine pollution[5],

[1] United Nations (2016), *The First Global Integrated Marine Assessment.*
[2] United Nations (2016), *The First Global Integrated Marine Assessment.*
[3] See also concept paper for partnership dialogue 3
[4] See also concept paper for partnership dialogue 4
[5] See also concept paper for partnership dialogue 1

which act cumulatively. These impacts are expected to increase if no countermeasures are taken, especially given the projected global population growth to 9.7 billion people by 2050.[6] Already today, about 30 percent of fish stocks are estimated as fished at a biologically unsustainable level and therefore overfished.[7] The exploitation of marine mammals, together with the fact that they accidentally get entangled or entrapped in fishing gear or are being struck by vessels, have caused certain species of marine mammals to become extinct over the last several centuries. In addition, many populations have been reduced to remnant status, such that they no longer play a significant role in the ecosystem. Major marine ecosystems have already been degraded or are being used unsustainably. Between 20 and 35 per cent of mangroves have been lost since 1980. Coral reefs around the world have been in a state of continual decline over the past 100 years, and especially over the past 50 years. Studies estimate that approximately 19 per cent of the world's coral reefs are severely damaged with no immediate prospects of recovery, more than 60 per cent are under immediate threat and all coral reefs could face functional extinction by 2050. It has been predicted under some climate change scenarios that up to 60 per cent of the current biomass in the ocean could be affected, either positively or negatively, resulting in disruptions to many existing ecosystem services.[8] Some of the consequences for humans are the increased vulnerability of local communities to extreme weather events due to undermined natural protection barriers and damage or destruction of human settlements and infrastructure; the displacement of local communities, for example due to reduced fishing opportunities; increased food insecurity and decreased availability of freshwater; and reduced sources of livelihood and employment.

As marine and coastal ecosystems provide important economic, socio-cultural and environmental benefits, their sustainable management, protection, conservation and restoration are crucial. Restoring and protecting the health of oceans and coasts also contributes to strenghthening the resilience and adaptive capacity of both natural and human systems to climate change and other threats.

Because individual stressors interact, managing each activity that impacts marine ecosystems in isolation will be insufficient to achieve ocean health and resilience. The cumulative impacts need to be taken into account.

UNCLOS provides the legal framework within which all activities in the oceans and seas must be carried out, including for the conservation and sustainable management of marine living resources, marine biological diversity and the protection and the preservation of the marine environment.

Several efforts are undertaken to identify and describe marine areas in need of conservation while the criteria for such identification differ. One example is the global process to facilitate the description of ecologically or biologically significant marine areas (EBSAs) through regional workshops under the Convention on Biological Diversity (CBD). Thus far, these regional workshops have covered more than 70% of the ocean, and described more than 200 areas meeting the EBSA scientific criteria. Other efforts undertaken include those by FAO for the identification of vulnerable marine ecosystems

[6] UN DESA (2015): *World Population Prospects: The 2015 Revision*.
[7] FAO (2016): *The State of World Fisheries and Aquaculture.*
[8] United Nations (2016), *The First Global Integrated Marine Assessment.* .

(VMEs) and by IMO to identify particularly sensitive sea areas (PSSAs). Possible overlaps and synergies between these various efforts could be further investigated.

Diverse area-based measures and management tools can be used to sustainably manage, protect, conserve and restore marine ecosystems, including for example the application of ecosystem approaches, marine spatial planning, integrated coastal zone management and the establishment of marine protected areas, consistent with international law and based on best available scientific information, including representative networks. The main purpose of these measures is to sustainably manage, protect, conserve and restore coastal and marine areas and resources, including underwater cultural heritage, while also supporting economically valuable activities and having important social impacts.

Area-based measures are being integrated in national development plans and strategies and referred to in various instruments at the global, regional and national levels.[9] Many initiatives adopt a suite of management tools in an integrated, cross-sectoral manner, including area-based management tools, environmental impact assessments, management of land-sea interactions, watershed and catchment planning and management, resource management, gear restrictions and promotion of cleaner production and environmentally sound technologies, as well as pollution prevention and control.

Apart from having noted the need to apply a precautionary approach in the management of activities having an impact on the marine environment, States have long recognized the importance of ecosystem approaches as the basis for the sustainable management of the marine environment and resources. While there is no single ecosystem approach, the main common feature is to address all human activities that impact the functioning of ecosystems in order to maintain and, where needed, restore ecosystem health to sustain goods and environmental services, provide social and economic benefits for food security and sustain livelihoods. At the national level, some States apply the ecosystem-based management approach to fisheries. On a regional scale, the regional seas conventions and action plans, regional fisheries bodies and large marine ecosystem projects are also advancing ecosystem approaches from their different perspectives. Ecosystem approaches have the potential to support a variety of other management tools, including marine spatial planning, to provide a framework for cross-sectoral cooperation and coordination of national and international measures. Current national, regional and global efforts for and the management of marine resources and ecosystem services, to a large extent, already integrate and/or strive to implement ecosystem approaches.

At the national and regional levels, integrated coastal zone management (ICZM) evolved from the practical need to plan and manage the various economic activities that occur in the coastal areas, regulate human behaviour, coordinate policy and management interventions, and integrate the use of coastal waters into land-use planning. ICZM is considered to be one of the tools to apply an ecosystem approach to coastal areas.

Marine spatial planning (MSP) is another important tool to apply ecosystem approaches and represents a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through political processes. Over the past ten years MSP has matured from a concept to a practical approach with integrated marine

[9] See also concept paper for partnership dialogue 7

spatial plans being implemented in about 20 countries. Forecasts predict that MSP is likely to strongly increase as an important tool in countries and regions.

Marine protected areas (MPAs) have become a mainstream tool for conserving marine biodiversity, and are advanced under several global and regional instruments, including the CBD, the Future we want and several regional seas conventions and action plans, as well as regional fisheries management conventions. MPAs can accomplish a broad range of objectives from habitat and species protection, fisheries outcomes, securing of livelihoods and food security, sustainable uses, cultural objectives, public education and outreach, and application of the precautionary and ecosystem approaches. MPAs have also had a role in revitalizing management by communities of their adjacent marine resources. MPAs can represent an effective tool to mitigate and adapt to climate change impacts and to increase the resilience of social and ecological ecosystems. MPAs can prohibit all activities in an area, prohibit certain activities or restrict certain activities within an area through, for example time/area closures, gear restrictions, fishing quotas, specific licenses and permits. In addition to government-established MPAs, which are often under government management, either fully or partly, indigenous and local community conserved areas and private protected areas also form an important part of the overall conservation effort. There are now 14,688 MPAs covering almost 15 million square kilometres, or 4.12% of the oceans, up from 3.4% per cent in 2014. Only 1% is protected in no-take marine reserves, which offer a higher degree of protection and more benefits.[10] While MPA coverage has grown significantly over the last decade, the geographical distribution of MPAs is very uneven with a small number of countries making up the majority of the area covered by MPAs. A sizeable fraction of MPAs are in the USA, Australia and European waters (including overseas territories). A significant increase in the rate of creation is needed in Africa, Latin America and the Caribbean, South and East Asia and Small Island states where coastal economies, livelihoods and food security are more dependent upon healthy functioning marine ecosystems. Polar regions are also under-represented. There is a trend towards larger MPAs in light of scientific studies demonstrating the conservation benefits of scale in MPA establishment.

Activities are also taking place towards the conservation of underwater cultural heritage and marine areas of outstanding universal value. The UNESCO World Heritage List currently includes 49 ocean places – distributed across 37 countries – recognized for their unique marine biodiversity, singular ecosystem, unique geological processes or incomparable beauty. World Heritage marine sites cover about 10 percent by surface area of all existing MPAs.[11]

In recent years, the international community has become increasingly aware of the range of services provided by marine ecosystems and of the rich biodiversity of pelagic and benthic ecosystems beyond the limits of national jurisdiction, namely in the high seas and the Area. Area-based management tools, including MPAs, and environmental impact assessments, are some of the issues considered in a package of issues by the Preparatory Committee established by resolution 69/292:"Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction".

[10] UNEP-WCMC and IUCN (2016): *Protected Planet Report 2016*.
[11] UNESCO (2016): *The Future of the World Heritage Convention for Marine Conservation*.

Many UN organizations have ongoing activities in support of managing, protecting, conserving and restoring coastal and marine ecosystems. These include: practical area-based and science-based management tools; policy guidance and capacity building to support implementation of ecosystem-based management and governance; developing Member States' capacities in the integration of climate change adaptation and coastal hazards preparedness; outlook systems for specific weather-climate phenomena (El Niño) which can affect ecosystems at global scale; developing guidelines, training materials and tools; identifying species biodiversity on national, regional and global scales; creating a database repository of relevant management measures to protect vulnerable species and ecosystems; examining the impacts of climate change and the effects of marine pollution on ecosystems; developing environmental regulations to manage the effect of deep-seabed mining and many other activities.

Efforts are also being made with regard to strengthening MPA effectiveness and equitable sharing of MPA costs and benefits among relevant stakeholders; establishment of regional networks and information sharing portals with regard to capacity building and experience sharing; offering of training courses on area-based management tools; continuous tracking of progress made with regard to the conservation of coastal and marine areas, including global MPA coverage; implementation of various programmes, including on fostering cooperation for sustainable use of marine ecosystems, preventing the loss and degradation of coastal habitats; fostering sustainable fisheries; preventing, controlling and managing alien invasive species; enhancing the science-policy interface; managing the human-biodiversity interface; and integrating biodiversity and ecosystem services into development and finance planning. Finally, there have been significant efforts aimed at facilitating progress towards the Aichi Biodiversity Targets in marine and coastal areas, which overlap and align very closely with some of the targets under SDG 14 as well as other SDGs.[12]

III. Challenges and opportunities

One of the major challenges to the sustainable use of marine biodiversity is that biodiversity hotspots tend to attract human uses and become socio-economic hotspots. Hence biodiversity-rich areas often have a disproportionately high representation of ports and coastal infrastructure and intensive coastal land uses, including fishing and other activities. The 66 Large Marine Ecosystems (LME) of the world, for example, are the most productive regions and the greatest pressures are generated upon them. The ecologically defined boundaries of LMEs generally transcend legal boundaries and encompass the maritime zones of two or more countries, thereby fostering international cooperation among countries, but also presenting a major governance challenge.

While ICZM and MPAs are commonly applied, and despite local success stories, biodiversity in coastal areas continues to decline with intensifying pressures. The successful implementation of ICZM remains a challenge. Some reasons cited for this include competing jurisdictions and decision-making, conflict between different activities and users, and inadequate governance.

[12] For example Aichi targets 10, 11, 12, 14, 15

In addition, many areas that are protected or are planned to be protected through area-based management tools are located in areas removed from where commercial activities occur or may not adequately protect the species, communities and habitats most threatened. MPAs can also fail to reach their full potential as a consequence of factors such as illegal harvesting, regulations that legally allow detrimental harvesting, or movement of animals outside MPA boundaries because of continuous habitat or inadequate size of the MPA. Management effectiveness of MPAs remains one of the largest problems. There is also no agreed or standardised methodology yet to track progress on equitable management of MPAs. MPAs are often not integrated into broader governance and management frameworks and limited connectivity among MPAs does not benefit ecosystem processes, functions and productivity. The socio-economic costs and benefits created by MPAs need to be further investigated and the need for more equitable sharing of social and economic benefits derived from MPAs could be addressed[13].

The development and implementation of area-based management tools could, to the extent possible, be combined with other appropriate conservation and management measures, taking into account socio-economic aspects and the need to avoid negative impacts in other areas. Studies are needed to determine under what circumstances an MPA is the appropriate tool and when other management measures are needed, or a combination of management tools.

There is an opportunity to increase the integration of area-based measures into national strategies related to sustainable development. In this context, there is a need for improvement and better use of appropriate planning tools and approaches for mainstreaming ecosystem approaches into national strategies. Another opportunity is to consider the challenges of climate change in area-based management plans and their monitoring activities. Disaster risk reduction and management could be an integral element of integrated coastal area management. Long-term sustainable observation networks and reliable predictive tools constitute essential elements of early warning systems which aim to protect coastal regions and people living there.

It is paramount that all sectors, whether marine- or land-based, work together to consider and address the various impacts that different human activities have on the functioning of ecosystems while considering the range of benefits, goods and services the different uses of coastal and marine ecosystems can bring. Further application of area-based management measures can enhance cross-sectoral cooperation and create synergies in achieving SDG14 targets and other SDGs. Sharing knowledge and practices more systematically can help address coordination challenges. Cooperation can also be facilitated and stimulated by global-level dialogue and experience-sharing across regions. A good example is the cooperation between some regional seas organizations and regional fisheries management organizations/arrangements, which proves to be useful in advancing ecosystem approaches.

Effective enforcement measures, including traditional and community-based measures, but also new technologies, such as satellites, need to be in place to back-stop area-based management tools. Enforcement could be improved by reaching national and local agreements with related institutions and stakeholders, complementing roles and sharing

[13] See also concept note for partnership dialogue 5

expertise and capacities. Institutional arrangements that ensure and enhance surveillance, monitoring and effective control and enforcement need to be established.

Stakeholder involvement

Stakeholders, especially local communities, are often not sufficiently involved in the development, designation and management of area-based measures in a transparent, just and equitable manner, although there is recognition of the need to take into account traditional and indigenous knowledge. Oftentimes, there is a lack of sustainable alternative livelihoods or (financial) incentives when customary resources become unavailable to local populations due to the implementation of area-based management measures. Tools are lacking for the equitable sharing of social and economic benefits derived from area-based management measures.

Area-based management tools should balance economic development, social needs and environmental protection, while also taking into account cultural aspects. Sustainable management of marine and coastal ecosystems requires the involvement of both public and private stakeholders and the sustained buy-in of coastal communities. The short-term costs and how these measures impact local communities and other stakeholders should be understood and considered. Meaningful alternative livelihoods must be made available to local communities, which should be an integral part of national development agendas. Clear legislative and policy frameworks must be in place to foster community organization and to allow for their full participation in the management of marine resources as stewards.

It is also of great significance to apply a gender pespective to the sustainable use and management of marine and coastal resources, in recognition of the very often significant role played by women in small-scale fisheries[14] and aquaculture and, overall, in the value-chain from catch and harvesting to consumption and marketing.

Governance

Generally speaking, governance for the sustainable management, protection, conservation and restoration of marine ecosystems is showing weaknesses at all levels. There is oftentimes a gap in setting up cross-sectoral cooperation and management through area-based management measures. In particular, lack of coordination between the fisheries and aquaculture sectors and biodiversity and conservation sectors has been an issue. This can be compounded by ineffective governance in relevant sectors, including inadequate alignment of policies and legislation, poor enforcement, weak institutions, and insufficient participation of civil society. There are often insufficient institutional capacities and inter-institutional collaboration (across sectors and between government agencies) in relation to different area-based measures leading to knowledge and data gaps, poor information sharing, and redundancy in management efforts. There is also oftentimes a lack of strong and coordinated public bodies to develop coastal and marine integrated management and planning, as well as a need for effective national legislation, administrative and technical frameworks and adequate technological, financial and human capabilities.

[14] See also concept paper for partnership dialogue 5

Opportunities exist for strengthening governance at all levels. Governance needs to incorporate the simultaneous consideration of several uses or sectors and the livelihoods and other social aspects connected with these activities. This encompasses, inter alia, the prevention and management of waste (water) created by various land-based activities, including agriculture and industry; addressing the impacts created by land-use change and urbanization; the sustainable management of fisheries[15]; managing competing interests and uses of coastal ecosystems; and generally all the facets of managing coastal and marine ecosystems.

Governance could be improved through increased transparency, accountability, participation, coordination, legitimacy and adaptability, while fairness or equity could be increased through creating means to share benefits of conservation locally, particularly by supporting local economic and tourism development[16], capacity-building programmes, and hiring practices.

Agreements between different national ministries and institutions should be established to promote synergies and/or clarify shared responsibilities. There is a need to integrate policies, build institutional bridges and clarify governance frameworks between sector-specific policies and policies relevant to area-based measures at the national level. Implementing policies across sectors and managing trade-offs will deliver co-benefits and develop cost-effective pathways towards sustainably managing, protecting, conserving and restoring marine and coastal ecosystems. It will also help to identify co-funding opportunities from a wide range of sources.

Knowledge and data[17]

Managing ecosystems sustainably involves balancing sustainable use and biodiversity conservation. Yet, often there seems to be no clear process for addressing the different knowledge gaps and ensuring that sound advice is available for management. There is a need for a better understanding of ecosystem processes and functions and their implications for ecosystem conservation and restoration, ecological limits, tipping points, socio-ecological resilience and ecosystem services. There is also a gap in terms of understanding species and biodiversity of marine resources. The limited amount of scientific knowledge about areas beyond national jurisdiction means that the extent of impacts on and the productivity limits and recovery time of ecosystems and biodiversity in those areas cannot be predicted. Many aspects of integrated coastal zone management still present important knowledge gaps. Little scientific understanding of the efficacy of area-based measures implemented exists, in particular with regard to their socio-economic benefits. The acquisition of sufficient credible scientific data and information and the high cost of conducting marine scientific research represent important challenges, in particular for developing countries.

Assessments[18] and research on marine and coastal ecosystems and the ecosystem services they provide should be maintained and expanded, including with regard to socio-economic aspects and possible future impacts on ecosystems and their resilience to them. The importance of measuring changes to marine ecosystems has been recognized to be

[15] See also concept paper for partnership dialogue 4
[16] See also concept paper for partnership dialogue 5
[17] See also concept paper for partnership dialogue 6
[18] See for example: United Nations (2016), *The First Global Integrated Marine Assessment.*

crucial to inform future management policies. By appropriately valuing especially natural assets, all activities that exploit them (directly and indirectly) could contribute to their sustenance. Data collection, access and sharing should be supported, including through observation networks and inventories. The use of traditional and ecological knowledge from local communities should be enhanced as relevant indigenous and traditional knowledge systems and the collective actions of indigenous and local communities can complement scientific knowledge in support of effective implementation. Clear and measurable objectives are required to evaluate the effectiveness and impact of area-based measures, including how land-based human activities impact their effectiveness, and area-based measures should be subject to periodic reviews. Baselines should be established to enable informed and integrated ocean management.

Capacity development[19]

Gaps exist at both national and local levels, especially in developing countries, with regard to technical and management capacities for the scientific identification of areas requiring protection, the development of area-based management plans for them, and the enforcement of regulations that may be required. Enhanced technical and scientific cooperation and significant capacity development are required to support countries and address within country coordination as well as cooperation between countries on significant transboundary issues.

Finance

There is a lack of dedicated and sustainable financing for area-based measures at all levels. The application of innovative financial tools for ecosystem management is also a challenge, in relation to the mobilization of national public funding to support integrated policies, as well as lack of commitment and contributions from partners or support institutions.

An overall substantial increase in funding is needed. New national and regional trust funds could be developed for MPAs and other area-based measures as well as new and innovative financing mechanisms developed in support of regional networking activities dedicated to strengthening knowledge, capacity and policies on a local and national level with regard to area-based management. Sufficient resources should be allocated to the monitoring, control and surveillance of area-based management tools. Innovations related to polluter/payer contributions integrating the land-sea link could dedicate funding to restoration and marine conservation actions. Gap analyses can help to produce national strategies for sustainable funding directed towards the long-term financing of area-based measures.

IV. Existing partnerships

A great number of partnerships exist in relation to coastal and marine ecosystem management, which occur at different levels and involve a range of stakeholders and modalities[20]. They cover virtually all aspects of ecosystem management, from the

[19] See also concept paper for partnership dialogue 6

[20] For partnership see https://sustainabledevelopment.un.org/sdinaction and for voluntary commitments see https://oceanconference.un.org/commitments/

management of specific threats to specific ecosystems or species to institutional coordination to scientific research and sharing of data, knowledge and best practices, to the creation of new financing tools and strategies to the implementation of area-based measures, including as tools for climate change mitigation and adaptation. Some partnerships focus on building capacities of countries to effectively develop and implement area-based measures and integrate them into national strategies.

In some countries, especially in developing countries, holistic approaches encompassing several areas dominate due to capacity limitations. Given the multitude of partnerships, it will be crucial to strengthen cooperation to enhance effectiveness and avoid duplication. Existing best practices on intra-governmental cooperation could be analysed and shared. Depending on the existence of organizations having shared or similar goals, potential areas could be identified where cooperation could be promoted in a feasible and practical manner. At the regional level, this will also depend on political willingness of participating countries to support formal cooperation.

V. Possible areas for new partnerships

In order to sustainably manage, protect, conserve and restore marine and coastal ecosystems, more win-win partnerships will have to be established between all relevant stakeholders with regard to area-based measures. Partnerships focused on capacity-building and technical assistance can improve capacities of local communities to better participate in area-based resource management. They can also strengthen capacities of public institutions to provide an enabling environment for all marine and coastal activities (e.g. in terms of policy coherence, institutional coordination, collaboration, information, communication and monitoring) and support the integration of area-based measures in national strategies and development plans. Since ocean management is naturally a transboundary endeavour, the scope of new partnerships should focus not only on scientific approaches and tools, but on coordinating and aligning management efforts across all levels (local, national, regional and global).

Local communities and authorities must be engaged and empowered to actively participate in the design of the future they want for their coastal areas and seas. All stakeholders should be made aware of the multiple ecosystem services provided by marine and coastal ecosystems. Citizens need to understand the important role they can play and how they can be involved.

Other areas for partnerships suggested include for example: a global partnership on marine spatial planning implementation; partnerships to improve the protection and research of underwater cultural heritage, as well as responsible public access to it; a dedicated partnership to consolidate a global network of practitioners at the scale of LMEs; public-private partnerships to support area-based management tools and their funding; training of key stakeholders on sustainable financing systems for MPAs and on the links between business plans and management performance; a new, interdisciplinary partnership among UN agencies, civil society, academia, regional organizations and projects and the private sector, focusing on area-based solutions and synergies to support ocean and coastal governance and management within wider sustainable development processes; a global ocean data and knowledge-sharing mechanism to support SDG implementation; a partnership to better coordinate bycatch initiatives in relation to cetaceans; partnerships that secure sustainable futures for communities and safeguard

natural assets; partnerships to improve land use management and on-the-ground conservation, restoration and sustainable use of mangroves; partnerships to increase coastal communities' resilience to impacts of climate change.

VI. Guiding questions for the dialogue

The dialogue could consider the following questions:

- What are contributing factors to successfully manage, protect, conserve and restore marine and coastal ecosystems?
- What type of partnerships creates engagement across sectors that traditionally function as separate entities and why are they successful?
- How can we ensure local community involvement, alternative livelihood development and the equitable sharing of benefits derived from area-based measures?
- How can we better measure the impacts and effectiveness of area-based measures and their socio-economic costs and benefits?