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Background note of the Secretary-General for the preparatory process of the United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Summary

The present background note was prepared in response to paragraph 19 of resolution 70/303, which requests the Secretary-General to prepare a background note, including a proposal for themes of partnership dialogues for the conference, to be considered by the preparatory meeting to be held on 15-16 February 2017 at United Nations Headquarters in New York. The Note outlines the status and trends, the challenges and opportunities for the implementation of the Sustainable Development Goal 14, looking at each target and cross-cutting issues of financing and capacity building and on the basis of this, proposes seven themes for partnership dialogues for the conference.

* A/71/150.

I. Introduction

The General Assembly, in resolution 70/226, decided to convene the high-level United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. The Conference will be convened at United Nations Headquarters in New York, from 5 to 9 June 2017, coinciding with World Oceans Day, observed annually on 8 June. The overarching theme of the Conference will be "Our oceans, our future: partnering for the implementation of Sustainable Development Goal 14".

The present Note was prepared in response to paragraph 19 of resolution 70/303, which requests the Secretary-General to prepare a background note, including a proposal for themes of partnership dialogues for the conference, to be considered by the preparatory meeting (15-16 February 2017, United Nations Headquarters in New York).

United Nations organizations (see Annex1) and relevant parts of the Secretariat contributed to this Note. The inputs from the informal preparatory process under the Advisory Group to the Co-hosts of the Conference were also taken into account.

II. Activities, challenges and opportunities for the implementation of SDG14

1. Status and trends

Oceans and seas and their resources support human well-being and livelihoods. They underpin poverty eradication, food security, employment, tourism and the protection from natural disasters. They provide humans with water and oxygen, while also being the primary regulator of the global climate and an important sink for greenhouse gases.

Marine and coastal ecosystems provide a vital basis for the livelihoods of many coastal communities, particularly in developing countries. More than 3 billion people rely on fish for animal protein, and some 300 million people find their livelihoods in marine fisheries—90 percent of those in small-scale, artisanal fisheries. The consumption of fish is increasing in all countries.

However, marine- and land-based human activities continue to be a threat to oceans and seas and marine resources. Marine pollution and litter, 80 percent of which comes from land-based sources, compromise ocean health. Invasive alien species, introduced through ballast water, aquaculture and tourism, among other means, severely impact native ecosystems. One quarter of all carbon dioxide released through human activity is absorbed by the oceans, raising the acidity of the sea water, with dire consequences for the marine ecosystems. Studies have shown that since the beginning of the industrial revolution, oceans have become 27 per cent more acidic,[1] and predictions show that, by 2050, ocean acidity could even increase by 150

[1] IPCC "Social, economic and ethical concepts and methods" and "Drivers, trends and mitigation", Climate

percent. Some estimates predict that up to 60 percent of the current biomass in the oceans could be affected positively or negatively by CO_2 emissions and climate change, with severe implications for ecosystem services, and 90 percent of coral reefs will be threatened by 2030 if no protective measures are taken.[2]

Destructive fishing practices, overfishing and illegal, unreported and unregulated (IUU) fishing are increasing pressures on marine ecosystems, and nearly one-third of all fish stocks are now below sustainable levels—up from 10 percent in 1974.[3] Harmful fisheries subsidies exacerbate the problem by encouraging fishing overcapacity.

The deterioration of coastal and marine ecosystems and habitats has more severe and immediate impacts on vulnerable groups. Small island developing States (SIDS) in particular, with their culture and economies deeply interconnected with the oceans, suffer acutely from the degradation of marine ecosystems.

The First Global Integrated Marine Assessment notes that the world's oceans are facing simultaneous pressures with such great impacts that the limits of their carrying capacity are being, or, in some cases, have been reached, and that delays in implementing solutions to the problems that have already been identified will lead to incurring greater environmental, social and economic costs.[4] Projected global population growth to 9.6 billion people by 2050 is foreseen to aggravate the situation if no counter-measures are taken.

In the face of this situation, governments, organizations and individuals are taking action. Several international instruments have been adopted to address the many challenges facing oceans and seas, most notably the United Nations Convention on the Law of the Sea (UNCLOS), which sets out the legal framework within which all activities in the oceans and seas must be carried out. UNCLOS and its implementing agreements[5] are complemented by a comprehensive web of instruments regulating various aspects related to the use of the oceans and their resources and the marine environment, from maritime transport to exploitation of living and non-living resources and pollution from various sources.

Several integrated, interdisciplinary and intersectoral tools have been developed to help manage activities in the oceans and seas in a more sustainable manner, including ecosystem approaches and area-based management tools, such as marine spatial planning and marine

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Change 2014: Mitigation of Climate Change, (2014) Ch. 3 and Ch. 5

[2] UNDESA, 2014, How oceans- and seas-related measures contribute to the economic, social and environmental dimensions of sustainable development: Local and regional experiences.

[3] FAO (2016) The State of World Fisheries and Aquaculture 2016.Contributing to food security and nutrition for all. Rome.

[4] Summary of the First Global Integrated Marine Assessment, A/70/112; A/71/L.26, para. 289.

[5] Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (Part XI Agreement); Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (United Nations Fish Stocks Agreement or UNFSA).

protected areas (MPAs). The number and size of MPAs worldwide has increased dramatically over the last 20 years, with 14,688 MPAs currently covering almost 15 million square km, or 4.12% of the oceans. The number of States taking steps to implement marine spatial planning has also increased.

Sustainable ocean-based economies, which build on fisheries, tourism, aquaculture, marine renewable energies, marine biotechnology and other activities, are increasingly being looked at as a path to sustainable development, including in SIDS.

2. Challenges and opportunities for the implementation of SDG 14

Both challenges and opportunities exist in the implementation of SDG 14. The targets under SDG 14 exhibit close interrelationships and interlinkages with one another and also within each target. A good performance on any of them would accelerate progress on the others. For example, the means of implementation identified under targets 14.a and 14.c will be critical to the achievement of all other areas of SDG 14. Of particular importance in this regard is the effective implementation of the legal framework established by UNCLOS and its implementing agreements. Conversely, failure to achieve some of the targets would negatively impact many others – sustainable management of marine and coastal ecosystems under target 14.2 is a case in point. In addition, achieving some of the targets under SDG 14 will depend on a broad array of actions under other SDGs, including in relation to food security, economic growth, industrialization and infrastructure, and sustainable consumption and production. These interactions should be kept in mind when discussing implementation of SDG 14.

The following sections considers the ten targets of SDG 14, as well as the means of implementation dimensions of financing and capacity-building.

a) Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Marine pollution originates from a number of land-based and marine sources, including riverine discharges, agricultural and industrial run-off, urban outfalls, municipal or industrial wastewater, atmospheric deposition, illegal or indiscriminate dumping, accidents (e.g. oil spills), fishing operations, maritime transport and off-shore activities (e.g. seabed mining). More than 80% of marine pollution is derived from land-based sources. The introduction of invasive species, including through the exchange of ship ballast water, also remains a major concern.

Over the past 40 years, global rules and standards have been developed to regulate most of the ship-related sources of pollution. Steps are now being taken to further strengthen the uniform enforcement of these rules and standards around the globe. Good progress has been made in reducing pollution from ships originating from catastrophic events (shipwrecks,

collisions and groundings) and chronic impacts from regular operational discharges.[6] Progress has also been made in improving response capabilities, though much remains to be done.[7] As regards pollution in relation to garbage, the major obstacle to the implementation of the International Convention for the Prevention of Pollution from Ships has been the lack of, or insufficient, reception facilities in many ports.[8] Steps have also been taken to reduce or, where possible, eliminate many of the impacts of heavy metals and hazardous substances, with positive trends in some parts of the world, even though problems persist in some local areas. New technologies and processes have also been widely developed that can potentially address these problems, but there are gaps in the capacities to apply these newer processes as they are very costly.[9]

Population density in coastal zones is much higher than in non-coastal areas and the urbanization will accelerate this trend combined with the predicted world population increase. Biodiversity-rich areas have a disproportionately high representation of ports and coastal infrastructure, intensive coastal land uses, fishing activities and aquaculture.[10] This trend has already had significant environmental impacts on oceans and seas, particularly as a result of the lack of environmentally sound waste management in coastal cities.[11] Wastewater, nutrient load pollution and solid waste discharges, including in the form of litter, plastics and micro-plastics, are a major threat. New wastewater treatment technologies and waste management processes may have the ability to minimize problems, but there can be gaps in the capacity to apply these newer processes, often because of the costs involved in particular in developing countries.

While UNCLOS provides a general legal framework to address marine pollution from land-based sources, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) is currently the only global mechanism entirely dedicated to address this issue. Under the GPA framework, some 98 countries have prepared National Plans of Action and/or relevant national plans/strategies to address land-based pollution. However, the lack of sewage systems and wastewater treatment plants, in particular for large urban settlements, is still a major threat to the ocean.

Policies to reduce marine pollution may limit the vulnerability of marine ecosystems. For example, enhancing waste management in coastal urban areas should be a priority, as should be the minimization of pollution of freshwaters which convey pollutants to the marine environment. Sustainable consumption and production is highly relevant to incorporation of circular economy principles and practices that touch on higher resource use efficiency, recycling and minimization of harmful discharges to the environment.

[6] United Nations, 2016, First Global Integrated Marine Assessment, Chapter 17;
[7] United Nations, 2016, First Global Integrated Marine Assessment.
[8] A/71/74.
[9] United Nations, 2016, First Global Integrated Marine Assessment.
[10] A/69/71.
[11] A/70/112.

b) Target 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Managing ecosystems sustainably involves balancing sustainable use and biodiversity and habitat conservation on the basis of the best available scientific information, data, knowledge and best practices. Yet, often there seems to be no clear process for addressing the different knowledge gaps and ensuring that sound advice is available for management, in relation to critical fishery resources, habitats and critical natural processes.

The lack of strong and coordinated frameworks to develop and implement integrated coastal zone and ocean management and planning as well as ecosystem approaches was highlighted in contributions to this Note. Also stressed was the need for effective national legislation, civil society participation, strengthening of administrative and technical frameworks and capabilities, and institutional arrangements that enhance and ensure monitoring, control and surveillance, and enforcement of legislation. Sharing knowledge and practices more systematically can help address coordination problems and needs to involve both public and private stakeholders.

The importance of ecosystems and ecosystem approaches, as well as the need for enhancing their resilience, as the basis for sustainable management of the marine environment and resources has long been recognized.[12] The development and implementation of area-based management tools should, to the extent possible, be combined with other appropriate conservation and management measures, taking into account the need to avoid negative impacts in other areas.[13]

Sustainable management of coastal ecosystems requires sustained inclusion and participation of coastal communities. Legislative and policy frameworks should foster community organization and allow for their full participation in the management of marine resources as stewards, as their engagement helps achieve better biodiversity outcomes.

c) Target 14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

An emerging body of research suggests that many of the effects of ocean acidification on marine organisms and ecosystems will be variable and complex, impacting developmental and adult phases differently across species depending on genetics, pre-adaptive mechanisms, and synergistic environmental factors. Ocean acidification is also expected to have significant

[12] See for example General Assembly resolution 70/235.
[13] See A/CONF.210/2016/5.

socioeconomic impacts, particularly on communities and economic sectors dependent on the oceans and their resources.[14]

Major adverse impacts to ecosystems from ocean acidification will be compounded by impacts from climate change which include ocean warming and a reduction in the solubility of CO_2, shifting currents and deoxygenation. Warming oceans are also changing the behaviour of fish stocks, generally pushing them toward the poles and to deeper water, and also are changing the metabolic rates, range and productivity of some species. Sea level rise endangers natural habitats and poses major threat to coastal settlements worldwide. The impacts of all these threats are already apparent and expected to increase.[15]

The long-term control of ocean acidification depends on the reduction of emissions of carbon dioxide into the atmosphere. In this regard, effective implementation of the Paris Agreement will be instrumental.

Currently no global international instrument is specifically dedicated to addressing ocean acidification or its impacts on the oceans. Nevertheless, a number of existing international instruments, at the global and regional levels, may contain relevant provisions.[16]

The protection and sustainable management of oceans and seas will be critical to build resilience of ocean ecosystems to the effects of ocean acidification and climate change and to support their role as carbon sinks and thus meet adaptation and mitigation goals. For example, protecting coastal habitats such as barrier islands, coral reefs, mangroves and wetlands reduces human vulnerability in the face of climate change and provides the natural infrastructure (e.g. storm protection) on which people rely.

Significant opportunities also exist through enhanced collaboration among States, regional fisheries management organizations and arrangements (RFMO/As), regional seas conventions and action plans, scientific organizations, academia and civil society in conducting research to achieve an understanding of the impacts of, and risks associated with, ocean acidification and climate change.

d) Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

[14] See A/68/71.
[15] United Nations, 2016, First Global Integrated Marine Assessment.
[16] See A/68/71, paragraphs 42-50.

Overfishing, IUU fishing and destructive fishing practices constitute significant threats to the sustainability of fisheries, to the food web in the oceans and to global food security, health and sustainable livelihoods.

Efforts to address overfishing are often undermined by a lack of science-based management, by weak governance and institutional capacities, particularly in developing countries, and by low data collection and analysis and monitoring capacity.

A number of international instruments, in particular UNCLOS and the UNFSA address conservation and sustainable use of marine living resources and cooperation among States to this end. The entry into force and implementation of the Food and Agriculture Organization of the United Nations (FAO) Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing is expected to be a major advance in combating IUU fishing globally.

Sustainable consumption and production will have a key role to play in relieving pressure on natural ecosystems, and in particular on fish as a source of food. Changes in consumption behaviours impact the demand for food and can decrease pressure on fish stocks. Conservation and management measures, such as reducing discards and by-catch, as well as requiring less destructive fishing methods, and implementation of relevant instruments, can also benefit fish stocks. While improving fisheries management can be expensive, the benefits of recovery substantially outweigh the costs of management, with the average benefit cost ratio exceeding 10:1.[17]

States and other stakeholders can pursue a range of market-related instruments including eco-labelling and certification programmes to encourage sustainable consumption and production in both capture fisheries and aquaculture. Seafood production certified under global sustainability initiatives grew 40-fold from 2003 to 2015 and now represents more than 14 percent of global production.[18] However, the Committee on Fisheries (COFI) of the FAO has expressed concern at the proliferation of private standards and eco-labelling schemes potentially leading to the creation of trade barriers and restrictions. Work is on-going to develop an evaluation framework to assess the conformity of public and private eco-labelling schemes through the Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries and to develop voluntary guidelines on catch documentation schemes.[19]

Aquaculture production, a rapidly growing sector, currently provides half of the fish products covered in global statistics. However, many States and regions lack related governance and regulatory arrangements in this sector, which poses risks both for the people consuming the fish as well as for the surrounding marine resources and habitats.

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[17] Costello, C. and Mangin, T. (2015) Country-Level Costs vs. Benefits of Improved Fishery Management. http://www.oceanprosperityroadmap.org/wp-content/uploads/2015/05/6.-Country-Level-Costs-vs.-Benefits-Fishery-Management-Report-5-26-15A.pdf.

[18] www.iisd.org/sites/default/files/publications/ssi-blue-economy-2016.pdf.

[19] A/RES/70/75.

e) Target 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

The main purpose of conservation measures is to rebuild and protect coastal and marine areas and resources; but they can also support economically valuable activities and have important social impacts.[20] Area-based conservation measures and management tools can be used to help achieve target 14.5, including through the application of an ecosystem approach, marine spatial planning, integrated coastal zone management and the establishment of MPAs.

Even though MPA coverage has grown significantly over the last decade, the geographical distribution of MPAs is skewed, with a small number of countries making up the majority of the area of MPAs.[21] In areas beyond national jurisdiction (ABNJ), MPAs cover only 1% of the total ABNJ. Marine protection in general has been deemed to be weak, with approximately one-sixth of the combined area designated as no-take areas (i.e. fishing and other extractive activities are prohibited.)[22.23] Some have questioned whether the trend of establishing remote large MPAs is leading to a global network that is effective, representative, connected and equitably managed. To better meet global conservation targets, all types of MPAs must be implemented, including smaller MPAs in more intensely used metropolitan sea.[24.] Some specialists feel there is currently an overreliance on MPAs as a management tool, and that it should only be considered as one of a number of mechanisms for safeguarding the marine environment.

Despite local success stories from integrated coastal and marine area management and MPAs, biodiversity in coastal areas continues to decline with intensifying pressures. Many areas that are protected are located in remote areas away from commercial activities and thus fail to protect the species, communities and habitats most threatened.[25] Many MPAs are affected by illegal harvesting, regulations that legally allow detrimental harvesting, or emigration of animals outside boundaries because of continuous habitat or inadequate size of reserve. Management effectiveness remains one of the largest problems facing the current MPA system such as lack of awareness, multiple jurisdictions and fragmented decision-making, conflict between different activities and users, and inadequate governance.

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[20] UNDESA, 2014, op. cit.
[21] Graham J. Edgar et al., “Global Conservation Outcomes Depend on Marine Protected Areas With Five Key Features,” Nature 506, no. 7487 (2014): 216–220, doi:10.1038/nature13022.
[22] Boonzaier, L., & Pauly, D. (2016). Marine protection targets: an updated assessment of global progress. *Oryx*, *50*(01), 27-35
[23] Milam, A., Kenney, S., Juffe Bignoli, D., Bertzky, B., Corrigan, C., MacSharry, B., Kingston, N. (2016). Maintaining a Global Data Set on Protected Areas. *Protected Areas: Are They Safeguarding Biodiversity?*, 81-101.
[24] Jones, P. J. S., & De Santo, E. M. (2016). Viewpoint–Is the race for remote, very large marine protected areas (VLMPAs) taking us down the wrong track?. *Marine Policy*, *73*, 231-234.
[25] United Nations, 2016, First Global Integrated Marine Assessment.

The socioeconomic benefits created by MPAs remain difficult to predict. Stakeholders, including local communities, are often not sufficiently involved in the development, designation and management of area-based conservation measures. Where livelihoods are affected by conservation and management measures, meaningful alternative livelihoods should be made available to local communities. Effective enforcement measures, including traditional and community-based measures, need to be in place to support conservation initiatives.[26]

f) Target 14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

Fisheries subsidies have gained worldwide attention because of their complex relation to trade, ecological sustainability and socioeconomic development.[27] Subsidies and other types of support measures to the fishing industry may come in many forms and are granted for a variety of purposes. While such subsidies can have tangible benefits, if properly designed, they can actively contribute to overcapacity and overfishing, and can be damaging and trade distorting even in effectively managed fisheries.

Although discussions have taken place in the World Trade Organization (WTO) for over a decade, there is still no multilateral framework to discipline fisheries subsidies. In addition to the WTO negotiations, other international and regional initiatives have been advanced over the past two years, both through initiatives of groups of WTO members and through regional trade agreements. Some governments are starting to introduce national reforms to reduce subsidies that could contribute to overfishing and overcapacity and to shift support toward more sustainable and less harmful activities. It is important to capitalize on these efforts, while addressing existing challenges.

In continuing efforts to identify an effective and feasible solution at the multilateral level, the development and livelihood needs of developing countries, in particular LDCs and SIDS need to be taken into consideration, as well as the interests and needs of traditional fishing communities. It will also be important to agree on content, sequencing and special and differential treatment provisions and the support needed for the sustainable use of their own resources by developing countries.

[26] UNDESA, 2014, op.cit.

[27] Sumaila, U. R., Khan, A. S., Dyck, A. J., Watson, R., Munro, G., Tydemers, P., & Pauly, D. (2010). A bottom-up re-estimation of global fisheries subsidies. *Journal of Bioeconomics*, *12*(3), 201-225.

g) Target 14.7: By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

SIDS face particular sustainable development challenges, including small populations, limited resources, vulnerability to natural disasters and external shocks, and high dependence on foreign imports, and little or no opportunity to create economies of scale. LDCs often share many of the SIDS challenges.

The sustainable development of SIDS and the oceans agenda are intertwined. Many SIDS have maritime zones which are disproportionately larger than their land territory. Fisheries and tourism are currently the predominant ocean-dependent industries in SIDS and coastal LDCs, and maritime shipping is their lifeline to global markets.

Economic benefits from the oceans for SIDS and many of the LDCs can be framed in terms of sustainable "blue growth" or "blue economy", a concept aimed at reconciling ocean-related economic growth with improved livelihoods and social equity, and strengthening transparent, reliable and more secure food systems based on sustainable use of resources.

The long-term sustainability of fisheries in SIDS has been threatened by overexploitation of living marine resources, land-based pollution, and inadequate fisheries monitoring, control and surveillance systems. All SIDS are parties to UNCLOS. Implementation of regulations and management frameworks to address overfishing is a particular challenge for SIDS and LDCs, in some cases, due to lack of capacity. In spite of these challenges, fisheries management and the economic value derived from fisheries for SIDS have been improving through a number of measures.

The tourism industry in SIDS is overwhelmingly based on oceans, coasts and marine resources. Tourism accounts for over one quarter of the GDP in many SIDS and represents 9% of total exports. However, the growth of the industry often brings loss of fragile habitat and biodiversity, marine pollution, inadequate waste management, resource consumption and competition, and limited community engagement and benefit. In addition, the tourism industry in SIDS and coastal LDCs is vulnerable to the impacts of climate change as well as fluctuations in global economies.[28] In the face of these challenges, the tourism industry is taking steps toward enhanced sustainability and increasing local employment, building and maintaining local supply chains, managing informal local trading and fostering community-based initiatives.

There are also opportunities to complement the traditional sectors of fishing and tourism with a range of other industries. Aquaculture can be an important element of the blue economy, if essential investments are made in enabling sustainable aquaculture policy and legal frameworks, applied research, capacity-building and information. Marine renewable energy sources have been identified as priority areas for SIDS, including in the recent Martinique

[28] United Nations, 2016, First Global Integrated Marine Assessment.

Action Plan for Renewable Energy Development on Islands, which calls for concrete action to support energy transition into renewables in SIDS, including ocean energy. Seabed exploration and exploitation of minerals and other resources has been of particular interest to Pacific SIDS. Marine biotechnology can provide an option for SIDS and coastal LDCs to grow their economies. Finally, there are significant opportunities for new and innovative sources of financing such as debt for nature swaps and blue bonds.

h) Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

Scientific understanding is essential to forecast, mitigate and guide the adaptation of societies to the ways oceans affect human lives and infrastructures at different spatial and temporal scales. A range of activities aim at strengthening the global knowledge base on oceans.[29] Most States and relevant organizations have established institutional infrastructures to carry out specific activities or programmes related to marine science, such as oceanographic institutes. They may be national, regional or global in scope and influence.[30] Several States have developed marine policies that encompass marine science and technology plans and strategies to build the required human and technical capacity. A number of developing countries have also established specific infrastructures regarding marine science and technology but at different levels of development.[31] UN agencies are carrying out activities in relation to strengthening the knowledge base and maintaining information systems covering relevant science fields.

In spite of these efforts, our understanding of the current processes is not keeping up with the pace of changes in the oceans. There is a need to better understand ecosystem processes and functions and their implications for ecosystem conservation and restoration, ecological limits, tipping points, socio-ecological resilience and ecosystem services. In particular, the effects upon biodiversity and ocean productivity from cumulative impacts as well as socioeconomic impacts are often not well understood in order for the adequate political and business decisions to be made.[32]

Many aspects of integrated coastal zone management still present important knowledge gaps.[33] There is also a gap in terms of understanding species and the diversity of marine resources. Data and knowledge gaps exist with respect to pollution, including all aspects of the

[29] Further information is available from the on-line inventory of mandates and activities by UN-Oceans members at: http://www.unoceans.org/inventory/en/
[30] A/65/69.
[31] Ibid.
[32] United Nations, 2016, First Global Integrated Marine Assessment.
[33] Ibid.

life cycle of marine debris, plastics and micro-plastics, heavy metals and other hazardous substances. The precise scope of the impacts of acidification on the marine environment remains unclear. There is still limited scientific understanding of the effectiveness and impact of conservation measures, including with regard to their socioeconomic benefits and how marine- and land-based human activities impact their effectiveness.[34] The limited amount of scientific knowledge of areas beyond national jurisdiction means that the extent of impacts and the productivity limits and recovery time of ecosystems and biodiversity in those areas cannot be predicted.[35]

Although monitoring of the oceans is carried out by many processes, the protocols used tend to be different, preventing comparisons and the harmonization of data, thus creating urgent need to have an effective science/policy interface at all levels.[36] The First Global Integrated Marine Assessment and future assessments under the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, provide timely opportunities to help fill these gaps at the global level.

Ocean science needs to apply a holistic approach towards understanding and addressing cumulative impacts of various threats such as climate change, pollution, coastal erosion and over-fishing. This could involve strengthening ocean monitoring, including by building on and expanding existing networks. There are opportunities for enhanced multidisciplinary research, with natural and social scientists working together with holders of relevant traditional and experiential knowledge to better understand the nature of the complex interactions between humans and marine and coastal ecosystems. Comprehensive databases, at all levels are required as well as ocean literacy programmes for communities of practice to share experience within and across regions.

Ocean research or related services and acquisition of sufficient credible scientific data and information are still weak in most countries due to their high cost. National ocean research policies to support sustainable development plans are rare.

Finally, there is a gap in our capacity to effectively measure progress in many areas of SDG 14. Although indicators have been developed for all targets under SDG 14, data gathering is a challenge for many of those indicators. Currently, the Global SDG Indicators Database contains information on only two indicators for targets under SDG 14.[37]

UNCLOS (Part XIV) explicitly supports the transfer of marine technology (TMT). While there is no global mechanism for facilitating TMT activities, they occur through bilateral cooperation among States and through UN bodies and international organizations such as IOC, International Maritime Organization, FAO and the International Seabed Authority (ISA),

[34] CBD COP decision XII/1.
[35] 66/70.
[36] A/65/69.
[37] Indicators 14.4.1 and 14.5.1. See http://unstats.un.org/sdgs/indicators/database.

among others.[38] A reference and guiding document in support of Part XIV of UNCLOS is the IOC Criteria and Guidelines on the Transfer of Marine Technology (CGTMT) which is directly referenced in target 14.a.[39] Most developing States are inadequately equipped to be able to fully benefit from ocean activities and resources and to deal with impacts on the marine environment[40] and continue to express the need for transfer of technology and technical assistance.

States have been encouraged to further use the CGTMT.[41] It has been suggested to develop a dedicated ocean stream on science and technology under the technology facilitation mechanism mandated by paragraph 123 of the Addis Ababa Action Agenda (A/RES/69/313).

i) Target 14.b: Provide access for small-scale artisanal fishers to marine resources and markets

Estimates suggest that artisanal fishers and related workers comprise over 90 percent of people employed globally in capture fisheries and related activities, though they capture less than 35 per cent of the global catch.[42] In some developing countries, including SIDS, small-scale fisheries provide more than 60% of protein intake. Many indigenous peoples and their communities also rely on small-scale fisheries. The role of artisanal fisheries in food security and nutrition is often underestimated or ignored, and their product is rarely reported separately in national catch statistics.[43]The 2014 FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication seek to enhance the contribution of small-scale fisheries to poverty alleviation, food and nutrition security and economic growth.[44]

For artisanal fishers to be able to access marine resources, access to markets presents challenges and therefore will require a range of actions,[45] including implementing policies that promote business activity without increasing pressure on fisheries, and improving access to education to foster community development and empowerment and legal changes that can benefit small-scale fisheries. It is difficult for small-scale operators to ensure homogeneity in quality, safety and handling practices, transport and packaging. Agricultural and fish products are generally more exposed to Non-Tariff Measures (NTMs) than industrial manufactures, due in part to sanitary and phytosanitary measures (SPS).

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[38] The annual reports of the Secretary-General on oceans and the law of the sea report on the transfer of information and data covering a wide range of ocean issues through databases and geographic information systems, many of which are online. Information on the practice of States regarding the transfer of equipment, instruments and vessels is not available, however.
[39] See http://unesdoc.unesco.org/images/0013/001391/139193m.pdf.
[40] A/65/69.
[41] A/RES/70/235.
[42] World Bank (2014), *Trade and fishing services, Emerging Perspectives on Foreign Fishing Arrangements*, Washington, DC.
[43] United Nations, 2016, First Global Integrated Marine Assessment.
[44] A/69/71.
[45] United Nations, 2016, First Global Integrated Marine Assessment

Fishing technology transfer and dissemination, as well as granting preferential access to coastal fishing grounds, can help communities derive higher benefits from marine resources in their area. Partnerships focused on capacity-building and technical assistance can improve capacities of local communities to better participate in resource management.

Support to artisanal fisheries will be most effective with enhanced coordinating and collaboration among all relevant international and regional organizations. The Aid for Trade initiative and other efforts can encourage exports and value-addition strategies for small scale and artisanal fishers.

j) Target 14.c: Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"

The legal framework for the oceans is complex, and its effective implementation will have a critical impact on progress in all the target areas of SDG 14. Encouraging progress has been made towards implementing the international legal framework for oceans and seas. In several areas, global and regional instruments, accompanied in some cases by technical guidelines for their implementation and related management tools, have been adopted which give effect to the provisions of UNCLOS.[46]

A wide array of international legal instruments exists, covering many aspects of ocean management. UNCLOS and its implementing agreements are supplemented by several instruments including global treaties relating to sustainable fisheries, pollution from ships, maritime safety, atmospheric pollution, release of hazardous substances into the environment, and the protection of certain species or habitats and the conservation and sustainable use of biodiversity. In addition, a host of soft law instruments also contain goals and targets, ranging from the outcome documents of the successive United Nations conferences and summits on sustainable development and the annual General Assembly resolutions on oceans and the law of the sea and on sustainable fisheries to guidelines, codes of conduct and programmes of action.

Yet, not all Member States are parties to all the relevant instruments. In some cases, low levels of participation have substantially prevented or delayed their entry into force. Efforts have been on-going to assist States in implementing their obligations or in becoming parties to the relevant instruments. The General Assembly has encouraged States that have not done so to become parties to relevant instruments, including UNCLOS and the UNFSA, and has also consistently called upon States to implement their obligations.

[46] See A/69/71/Add.1 and the annual Secretary-General's reports on oceans and the law of the sea at http://www.un.org/depts/los/general_assembly/general_assembly_reports.htm.

Continued efforts have been made to strengthen the international legal framework for the oceans and seas with additional instruments to address emerging challenges. In particular, the General Assembly decided to develop a legally-binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, and established a Preparatory Committee to that end. The ISA has embarked on the development of regulations to manage the impacts of mining in the Area.

It is clear, however, that effective compliance with, and enforcement of, their provisions remain a challenge, in particular for developing countries and especially for SIDS and LDCs. While reviews of implementation have been carried out, assessments remain incomplete owing to a low level of responses to reporting requirements and limited available information on how States have discharged their duties under relevant legally-binding instruments or have followed upon the calls for action of the General Assembly and other governing bodies of competent international organizations. In addition, when they exist, compliance mechanisms are rarely used or not used to their full extent.

In that context, States, competent international organizations, the secretariats of various instruments and civil society have engaged in extensive efforts to build human capacity and raise awareness of States' obligations under various instruments, but challenges still remain, in particular in relation to financing and technology transfer.

At the regional level, a number of instruments, including conventions establishing RFMO/As[47] and regional seas conventions,[48] complement the global instruments. Many of the regional seas conventions have adopted protocols and related action plans to address various sources of pollution and also, in a few cases, on integrated coastal zone management. However, information on the level of implementation of these protocols is insufficient in many regions. Regional Seas Convention and Action Plans have formulated common Regional Seas Strategic Directions to connect regional activities to global processes.

Cooperation can be facilitated and stimulated by global-level dialogue and experience-sharing across regions. A good example is the cooperation between regional seas conventions and action plans and regional fisheries bodies, which proves to be useful in advancing ecosystem approaches, such as OSPAR-NEAFC collective arrangement and the MAP-GFCM Memorandum of Understanding.

Implementation of global commitments is further affected by the domestic regulatory and administrative set up, despite calls for integrated management in the context of an ecosystem approach.[49] Yet, policies related to ocean affairs are still largely fragmented in many States, their implementation frequently suffering from insufficient inter-sectoral coordination and the constraints resulting from competing interests. In particular, lack of coordination

[47] List available at http://www.fao.org/fishery/rfb/search/en.
[48] List available at http://www.unep.org/ecosystemmanagement/water/regionalseas40/About/tabid/132267/Default.aspx.
[49] Darling, E. S. & Côté, I. M. Quantifying the evidence for ecological synergies. *Ecological Letters*, 12, 1278–1286 (2008).

between the fisheries and aquaculture sectors and biodiversity and conservation sectors has been an issue.

k) Financing

Sustained financing to support ocean-related activities, including capacity-building initiatives in support of the full implementation of UNCLOS and related instruments, remains a challenge in many of the target areas of SDG 14. While the implementation by developing countries of a number of multilateral agreements adopted in recent years has benefited from financial resources allocated through a specific financial mechanism as provided in such agreements,[50] activities aimed at supporting the implementation of UNCLOS have largely remained dependent on voluntary contributions from States, intergovernmental organizations and donors, as well as bilateral cooperation.

Additional financing gaps identified in the submissions include lack of financing for scaling up and acceleration of progress towards achieving target 14.5 related to MPAs; lack of strategic commitment by donors in the area of reducing the flow of plastics/marine debris to the oceans through introduction of integrated, 'circular' management of the plastics supply chain to enhance reduction, recovery and re-use; lack of sustainable financing tools for ecosystem management and conservation measures at all levels; financing gaps for capacity-building and for the introduction and scaling up of marine seafood (wild catch and aquaculture) certification schemes and greening seafood supply chains; and lack of sufficient resources to the implementation, monitoring, control and surveillance of area-based management tools. Challenges also exist in relation to the mobilization of national public funding to support integrated policies.

New and innovative ways of financing require consideration. Innovations related to polluter/payer contributions integrating the land-sea link could for example dedicate funding to restoration and marine conservation actions. Gap analyses can help produce national strategies for sustainable funding directed towards the long-term financing of conservation measures. It was suggested that the Global Environment Facility (GEF) in its next phase (2018-22), should aim to explicitly provide financial support to developing countries for technical assistance and capacity-building to help them incorporate new rules on fisheries subsidies into relevant national and regional policy and legislation, and build capacity for monitoring, compliance and enforcement.

l) Capacity-building

Often, gaps in capacity prevent developing countries from taking full advantage of what the oceans can offer them, as well as reduce their ability to address the factors that degrade the oceans and strengthen capacities of public institutions on coordination and monitoring.[51]

[50] See, e.g., Part VII of the UNFSA.
[51] United Nations, 2016, First Global Integrated Marine Assessment.

Capacity needs vary from country to country and region to region and capacity interventions also need to adapt to local priorities.

With regard to marine science, the First Global Integrated Marine Assessment identified the following common capacity development needs across the regions: (i) data accessibility and data sharing; (ii) the provisions for mentoring and training opportunities for less experienced scientists and practitioners; (iii) data collection and marine habitat mapping to inform management of ecosystems, biodiversity and fisheries; (iv) need to improve professional capacities to assess socioeconomic issues; and (v) lack of capacity to conduct integrated and ecosystem-services assessments.[52] There is also a strong need for capacity-building with regard to ocean acidification, a relatively new field of study.[53] Significant capacity development is also required to address cooperation between countries on transboundary issues.

Capacity-building needs have been identified in a wide range of areas, including: marine science, uniform and consistent application of UNCLOS, delineation and delimitation of maritime zones, integrated management of oceans and seas and ecosystem approaches, conservation and management of marine living resources, conservation and sustainable use of marine biological diversity, sustainable use of non-living resources and development of marine renewable energy, preservation of the marine environment and protection of the marine environment from land- and sea-based activities, climate change and oceans, ocean acidification, maritime transportation and navigation, maritime security, protection of archaeological and historical objects, and settlement of disputes.[54] The General Assembly has noted the critical need to intensify efforts to build capacity for developing countries, in particular for SIDS and LDCs, as well as coastal African States.[55] In addition to traditional capacity development assistance through North-South cooperation, there is a potential to foster capacity development partnerships that mobilize South-South cooperation.

Furthermore, the submissions received for this Note highlighted gaps at national and local levels in capacities for the scientific identification of MPAs, as well as for the development of management plans for them.[56] Capacity-building is also necessary to develop and carry out coastal and fisheries management plans. In addition, capacity development for data collection and analysis for data-poor fisheries management will bolster the efforts of small-scale and coastal fishers.[57] Another priority area for technical assistance and capacity-building activities is trade in fisheries. Additional opportunities include establishing a global mechanism for capacity development activities in ocean science, technical support for the development of national ocean research plans, and creating regional training centres in SIDS.

[52] See Chapter 32, United Nations, 2016, First Global Integrated Marine Assessment.
[53] A/68/71.
[54] See A/65/69.
[55] A/RES/70/235.
[56] United Nations, 2016, First Global Integrated Marine Assessment.
[57] ECLAC (2010). The Outlook for Agriculture and Rural Development in the Americas: A Perspective on Latin America and the Caribbean.

III. Development of partnerships

A great number of partnerships cover various aspects of SDG 14. More than 160 partnerships were identified in the submissions to this note, [58] involving a range of stakeholders and modalities. Stakeholders include States, intergovernmental organizations, international and national non-governmental organizations, scientific institutions, networks and projects, foundations and other private entities. UN organizations are involved in many partnerships, often in relation to one of their core mandates. Some partnerships contribute to the science-policy interface.[59]

In terms of focus, existing partnerships usually cover one of the targets of SDG 14, or a specific dimension of a target. For example, there are a range of partnerships addressing specific aspects of marine pollution. Some partnerships, especially those related to targets 14.a and 14.c, also have bearings on other target areas. Existing partnerships focus among others things on: scientific research and knowledge sharing; capacity-building related to the implementation of the provisions of relevant international instruments, including UNCLOS and the UNFSA; capacity-building related to pollution, ecosystem approaches, area-based management and fisheries management; development and implementation of conservation measures, including MPAs; marine pollution; education and awareness raising on oceans; the creation of new financing tools and strategies; conservation measures as tools for climate change mitigation and adaptation; and the sustainable use and development of oceans for SIDS and LDCs.

Submissions to the Note suggest that the coverage of existing partnerships is unequal across target areas. Around 40 partnerships have a relation to science and technology, and more than 70 partnerships addressed various dimensions of “blue economy” and “blue growth”, which are all potentially relevant to target 14.7. Conversely, while more than 10 partnerships specifically address ocean acidification, few partnerships appear to focus on implementation of international law and access to resources and markets for small-scale fishers. No existing partnership focusing on harmful fisheries subsidies was included in the submissions received for this Note.

Similarly, more work would be needed to assess the impact of existing partnerships, especially in target areas that seem well covered. For some target areas, including science and technology and benefits from marine resources for SIDS and LDCs, the relatively large number of existing partnerships may conceal fragmentation or duplication.

Many suggestions were made in the contributions to this Note for potential areas for new partnerships. For example, in terms of marine pollution, there is scope for public-private

[58] See http://sustainabledevelopment.un.org.
[59] For example, three partnerships under the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), which focus respectively on pollution in relation to nutrient, litter and waste water.

partnerships that raise awareness among manufacturers, distributors, consumers and others, in order to promote the development of better alternatives, change consumer behaviour, and promote recycling. SDG14.3 provides an opportunity to further coordinate current and planned ocean acidification work and identify opportunities for enhanced collaboration to leverage existing efforts and develop new partnerships.

Public-private partnerships can promote the development of needed infrastructure and technical innovation with respect to sustainable fisheries management. In order to achieve target 14.5, more win-win partnerships will have to be built between all relevant stakeholders with regard to area-based marine conservation measures.

Partnerships can further strengthen capacities of public institutions in terms of policy coherence, institutional coordination, collaboration, information and communication and monitoring. At the national level, partnerships, including private sector actors, could support governments at the national level to identify harmful subsidies targeted in Target 14.6. Partnerships with national statistical offices and relevant fisheries bodies could help improve reporting of subsidies, a critical step for addressing data gaps.

It was suggested that new partnerships could focus on capacity-building activities, in particular in developing countries, in the field of marine scientific research, as well as on transfer of marine technology. Strategic partnerships between UN organizations and universities and research institutes could bring added value in filling existing capacity gaps. In the case of science-related partnerships, regional or sub-regional centres could be used as hubs to deliver a suite of activities covering the whole spectrum of needs in relation to SDG 14 and associated capacity building. Artisanal fishing practitioners and communities can clearly benefit from capacity building partnerships in a number of areas.

There appears to be opportunities for additional partnerships aimed at assisting the development of adequate policy, legislation or regulation to implement UNCLOS, as well as at building the necessary monitoring, control and surveillance and enforcement capacity. There also seems to be a need for cross-sectoral partnerships to those ends.

IV. Possible themes for the partnership dialogues

In order to address the implementation of SDG 14 in a comprehensive manner, it is important for the seven partnership dialogues to address all the targets under SDG 14. This requires designing appropriate clusters of issues addressing several targets in conjunction. With this in mind, the following themes are proposed:

1 **Addressing marine pollution**. This theme would address target 14.1.
2 **Managing, protecting, conserving and restoring marine and coastal ecosystems**. This theme would address targets 14.2 and 14.5.
3 **Minimizing and addressing ocean acidification**. This theme would address target 14.3.

4 **Making fisheries sustainable**. This theme would address targets 14.4 and 14.6.
5 **Increasing economic benefits to SIDS and LDCs and providing access for small-scale artisanal fishers to marine resources and markets**. This theme would address targets 14.7 and 14.b.
6 **Increasing scientific knowledge, and developing research capacity and transfer of marine technology**. This theme would address target 14.a.
7 **Implementing international law, as reflected in UNCLOS**. This theme would address target 14.c

V. Conclusions

Maintaining the quality of life that the oceans provide to humankind, while sustaining the integrity of their ecosystems, will require a transformative change in how humans view, manage and use oceans, seas and marine resources. The Conference to Support the Implementation of Sustainable Development Goal 14 should provide momentum to galvanize concerted and cooperative action, through partnerships among all stakeholders, to address the multi-faceted dimensions of SDG 14. In doing so, it is expected that the Conference will contribute to the implementation of SDGs and provide solid inputs to the HLPF at its session in 2017.

Annex: contributing UN organizations.
ESCAP
FAO
IMO
IOC/UNESCO
OHCHR
UNCTAD
UNEP
UNESCO
UN-Habitat
UNISDR
UNOPS
Secretariat of the Convention on Biological Diversity
The World Bank

Other organizations
ISA
WTO