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**Oceans and the law of the sea**

# Oceans and the law of the sea

## Report of the Secretary-General

*Summary*

The present report has been prepared pursuant to paragraph 309 of General Assembly resolution 69/245 of 29 December 2014, with a view to facilitating discussions on the topic of focus at the sixteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, on the theme entitled "Oceans and sustainable development: integration of the three dimensions of sustainable development, namely, environmental, social and economic". It constitutes the first part of the report of the Secretary-General on developments and issues relating to ocean affairs and the law of the sea for consideration by the Assembly at its seventieth session. The report is also being submitted to the States parties to the United Nations Convention on the Law of the Sea, pursuant to article 319 of the Convention. In the light of the multifaceted nature of the topic being covered and the page limitations established by the General Assembly, the report does not purport to provide an exhaustive synthesis of available information.

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# I. Introduction

1. In paragraph 298 of its resolution 69/245 of 29 December 2014, the General Assembly decided that, in its deliberations on the report of the Secretary-General on oceans and the law of the sea, the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (the Informal Consultative Process) would focus its discussions at its sixteenth meeting on "Oceans and sustainable development: integration of the three dimensions of sustainable development, namely, environmental, social and economic".

2. At the core of sustainable development are the strong interlinkages between sustained and inclusive economic growth, social development and environmental protection. The effective functioning of each individual dimension depends on the effective functioning of the other two. If one or the other dimensions are pursued separately, and the other dimension is not taken into account, this could lead to an ultimate loss in all three dimensions because of the inextricable linkages between them.[1] Successful sustainable development therefore requires integrated approaches that ensure sustained and inclusive economic growth, social development and environmental protection, or so-called "triple wins".

3. In the outcome document of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, entitled "The future we want", States acknowledged that, since 1992, there had been areas of insufficient progress and setbacks in the integration of the three dimensions of sustainable development, aggravated by multiple financial, economic, food and energy crises, which had threatened the ability of all countries, in particular developing countries, to achieve sustainable development.[2] They also acknowledged the need to further mainstream sustainable development at all levels, integrating economic, social and environmental aspects and recognizing their interlinkages, so as to achieve sustainable development in all its dimensions.[3]

4. The importance of oceans for sustainable development has been recognized in the outcome documents of various conferences and summits on sustainable development, including Agenda 21,[4] the Plan of Implementation of the World Summit on Sustainable Development (Johannesburg Plan of Implementation)[5] and "The future we want".[6] In the latter document, States stressed the importance of the conservation and sustainable use of the oceans and seas and of their resources for sustainable development, including through their contributions to poverty eradication, sustained economic growth, food security and creation of sustainable

[1] Economic and Social Council, "Achieving sustainable development: integrating the social, economic and environmental dimensions", concept note prepared for the Economic and Social Council integration meeting, held on 13 May 2013.

[2] General Assembly resolution 66/288, annex, para. 20.

[3] Ibid., para. 3.

[4] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

[5] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 2, annex.

[6] General Assembly resolution 66/288, annex.

livelihoods and decent work, while at the same time protecting biodiversity and the marine environment and addressing the impacts of climate change.[7]

5. Integration of the environmental, social and economic dimensions is at the core of the United Nations Convention on the Law of the Sea. Central to the Convention is the balance of the enjoyment of rights and benefits with the concomitant undertaking of duties and obligations. Effective implementation of the Convention can therefore make a significant contribution to the integration of the three dimensions of sustainable development, and "The future we want" recognizes the importance of the Convention to advancing sustainable development.[8]

6. The present report highlights the current state of integration of the three dimensions of sustainable development in relation to oceans, as well as opportunities for, and challenges to, the enhanced integration of the three dimensions. In doing so, it draws attention to activities and initiatives undertaken with a view to promoting the integration of the three dimensions of sustainable development in relation to oceans.

7. The Secretary-General wishes to express his appreciation to the organizations and bodies that contributed to the present report,[9] namely, the European Union; the secretariat of the Baltic Marine Environment Protection Commission (Helsinki Commission); the secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants; the Commission for the Conservation of Antarctic Marine Living Resources); the secretariat of the Convention on Biological Diversity; the Economic Commission for Africa (ECA); the Food and Agriculture Organization of the United Nations (FAO); the Forum Fisheries Agency; the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC); the International Atomic Energy Agency; the International Coral Reef Initiative; the International Hydrographic Organization (IHO); the International Labour Organization (ILO); the International Seabed Authority; the International Maritime Organization (IMO); the North Atlantic Salmon Conservation Organization; the Northwest Atlantic Fisheries Organization; the Pacific Islands Forum; the Secretariat of the Pacific Community; the secretariat of the Pacific Regional Environment Programme); the South East Atlantic Fisheries Organisation; the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean; the Commission for the Protection of the Marine Environment of the North-East Atlantic; the North Pacific Anadromous Fish Commission; and the World Meteorological Organization (WMO). The Department of Economic and Social Affairs of the Secretariat, the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, the United Nations Conference on Trade and Development (UNCTAD), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Office on Drugs and Crime (UNODC) and the United Nations University Fisheries

[7] Ibid., para. 158.

[8] Ibid., para. 159.

[9] Contributions authorized by the authors to be posted online are available at www.un.org/Depts/los/general_assembly/general_assembly_reports.htm.

Training Programme also made contributions. The report also draws on information from other sources.

# II. Oceans and the three dimensions of sustainable development

8. The oceans provide a wide range of services to human society, which play a critical role in each dimension of sustainable development, either directly or through impacts on services in other sectors.[10] The present section briefly outlines the contribution of oceans to the environmental, social and economic dimensions of sustainable development and the manner in which the United Nations Convention on the Law of the Sea addresses these dimensions. It also presents information on how various conferences and summits on sustainable development have addressed the issue of integration.

## A. Oceans and each dimension of sustainable development

### 1. Environmental dimension

9. The environmental dimension of oceans and the importance of healthy and productive oceans to sustainable development are best reflected in the supporting (e.g., resilience to environmental change) and regulating services (e.g., climate regulation through carbon storage and sequestration, nutrient cycling) that they provide. These, in turn, allow for the continued delivery of the provisioning (e.g., food, energy, employment) and cultural services (e.g., scientific knowledge, culture, recreation), which are the basis of the economic and social dimensions of the role of oceans in sustainable development.[11]

10. Healthy, resilient oceans have a role in oxygen production, photosynthesis and nutrient cycling.[12] For example, marine phytoplankton produces 50 per cent of the oxygen on Earth,[13] and coastal ecosystems, such as wetlands, mangroves, coral reefs and seagrass beds, play a major role in the life cycle of many marine organisms by providing breeding, nursing and feeding grounds.[14] Healthy, resilient oceans also have a role in regulating the climate, natural hazards, such as floods, and water quality. For example, coastal wetlands have a role in capturing and filtering sediments and organic wastes in transit from inland regions to the ocean. Oceans capture and store about 30 per cent of carbon dioxide produced by humans,[15] through fixation of atmospheric carbon by oceanic algae and its deposition in deep water, thereby influencing the global carbon cycle.

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[10] United Nations Environment Programme (UNEP) World Conservation Monitoring Centre, *Marine and Coastal Ecosystem Services: Valuation Methods and Their Practical Application*, UNEP-WCMC Biodiversity Series, No. 33 (2011).

[11] Millennium Ecosystem Assessment, *Ecosystems and Human Well-being Synthesis: A Report of the Millennium Ecosystem Assessment* (Washington, D.C., Island Press, 2005); see also UNEP and others, *Green Economy in a Blue World: Synthesis Report* (UNEP, 2012).

[12] Millennium Ecosystem Assessment, *Ecosystems and Human Well-being Synthesis* (see footnote 11 above).

[13] IOC and others, *A Blueprint for Ocean and Coastal Sustainability* (Paris, 2011).

[14] A/69/71, para. 59.

[15] Ibid., para. 63.

11. The importance of these services cannot be overstated, given that as much as 40 per cent of the world's population lives within 100 km of the shoreline,[16] and it is estimated that over 3 billion people depend on marine and coastal biodiversity for their livelihoods.[17]

12. In view of the above, damage to the marine environment resulting from pollution, unsustainable extraction of marine resources, alien invasive species, ocean acidification and climate change impacts, and physical alteration and destruction of marine habitats, negatively affect the delivery of important ecosystem services and therefore sustainable development. For example, disruptions to the delivery of marine ecosystem services caused by climate change and ocean acidification will seriously affect the economy of coastal communities (see paras. 67-70 below) and may impact food security and livelihoods and result in increased poverty.[18]

13. The outcome of several conferences on sustainable development have acknowledged that healthy, productive and resilient oceans and coasts are critical for, inter alia, poverty eradication, access to sufficient, safe and nutritious food, livelihoods, economic development and essential ecosystem services (see paras. 22-27 below). The essential role of a healthy marine environment in supporting the objectives of the United Nations Convention on the Law of the Sea and achieving sustainable development is taken into account in Part XII of the Convention, which provides a framework for the protection and preservation of the marine environment, including the general obligation of States to protect and preserve the marine environment. While States have the sovereign right to exploit their natural resources, they must do so pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment.

### 2. Social dimension

14. Oceans make important social contributions through the provision of food security and livelihoods, and also through their significance in the heritage and culture of many States, especially coastal and small island States.[19] The marine environment is also a basis for the development of products, such as pharmaceuticals (see para. 63 below), as well as recreation and tourism (see paras. 56-60). It has been estimated that 350 million jobs worldwide are linked to oceans.[20] Over 1.5 million people, the vast majority from developing countries, work as seafarers.[21] For example, Filipino seafarers, who represent around 20 per cent of the seafarers around the world,[22] contribute to the economic and social development of their country through their remittances, which can reach up to $1 billion.

15. The fisheries and aquaculture sectors are estimated to employ 55 million people and support the livelihoods of between 660 and 820 million people

[16] UNEP and others, *Green Economy in a Blue World* (see footnote 11 above).
[17] Secretariat of the Convention on Biological Diversity, *Biodiversity, Development and Poverty Alleviation: Recognizing the Role of Biodiversity for Human Well-being* (Montreal, 2009).
[18] Contribution of IAEA.
[19] Contribution of the Department of Economic and Social Affairs of the Secretariat.
[20] Contribution of the European Union.
[21] IMO, "World Maritime Day: a concept of a sustainable maritime transportation system" (2013).
[22] ILO, "Decent work for seafarers" (2014).

globally.[23] Recently, the increasing and beneficial role of women in the maritime industry, including the fisheries sector, and the need to strengthen their capacity to engage in a productive manner in that sector has been recognized.[24] Women accounted for more than 15 per cent of all people directly engaged in the fisheries primary sector in 2012, the proportion of women rising to 90 per cent in secondary activities (e.g., processing).[25]

16. Unsustainable fishing practices, including overexploitation, can have negative social impacts. In addition, conditions such as forced labour, trafficking, abandonment, highly dangerous working conditions and the use of child labour undermine the lives of people working at sea as well as the marine environment and the economic efficiency of maritime sectors.[26] Ensuring decent working conditions for seafarers, fishers and other maritime workers is thus essential to ensuring the economic viability of maritime sectors. It is also essential that seafarers and fishers be appropriately trained, inter alia, in the measures necessary to avoid damage to the marine environment.[27]

17. Many societies regard nature, including the oceans, as an extension of human society, making the culture-sensitive stewardship of oceans crucial to sustainable development.[28] In many parts of the world, indigenous peoples have long been the custodians of the marine and coastal environment, and have sustainably used resources in these areas in accordance with their cultural traditions.[29] Natural areas held sacred by peoples are found all around the world, including in coastal and marine areas.[30] In some parts of the world, fish and fishing are important components of many cultural, ceremonial and social events, for communal sharing, and as tools for teaching and practicing traditional ways. For many indigenous peoples, cultural values are attached to migratory species, such as cetaceans (whales, dolphins and porpoises), sharks and seabirds.[30] While culture was not originally included in the Millennium Development Goals, subsequent conferences, such as the 2005 World Summit and the United Nations Conference on Sustainable Development, began to recognize its importance.[30]

18. The economic and social advancement of all peoples of the world is one of the main objectives of the United Nations Convention on the Law of the Sea. As explained in paragraph 20 below, the Convention gives effect to the common heritage of mankind principle. Furthermore, it also specifically addresses seafarers and coastal communities through a number of its provisions. For example, measures to ensure safety of ships at sea include those relating to the manning of ships, labour conditions and the training of crews. In addition, the provisions of the Convention

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[23] Rockefeller Foundation, "Securing the livelihoods and nutritional needs of fish-dependent communities" (2013).

[24] See A/69/71/Add.1.

[25] FAO, *The State of World Fisheries and Aquaculture 2014* (Rome, 2014).

[26] Contribution of ILO.

[27] IMO has adopted instruments to address the issue of minimum standards of competence for seafarers and guidelines to improve the safety of international shipping and to reduce pollution from ships by altering the way ships are managed and operated (see www.imo.org/OurWork/HumanElement/Pages/Default.aspx).

[28] UNESCO, "Culture in the post-2015 sustainable development agenda: why culture is key to sustainable development", background note. Available from www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/images/Post2015SustainableDevelopmentAgendaENG.pdf.

[29] UNEP, document UNEP/CBD/SBSTTA/16/INF/10.

[30] See General Assembly resolutions 60/1 and 66/288.

related to the conservation and management of marine living resources require taking into account the economic needs of coastal fishing communities, as well as nutritional needs. The Convention also provides a basis for modern communications by setting out a regime related to the laying of submarine cables (see paras. 53-55 below).

### 3. Economic dimension

19. Oceans provide a source of employment, trade and economic well-being for millions of people around the world.[31] A number of economic activities are ocean-based or rely on the use of ocean space and its resources, including the fishing, marine aquaculture, shipping, shipbuilding, tourism, oil, gas, mining, transportation and international communications industries, as well as emerging sectors such as offshore renewable energy. With more than 90 per cent of global trade being carried by shipping, maritime transport constitutes the backbone of international trade. It has been estimated that the market value of marine and coastal resources and industries is around 3 trillion dollars annually (about 5 per cent of global gross domestic product (GDP)).[32] Other ocean-based activities, such as hydrographic and meteorological activities, also indirectly bring about economic benefits.[33] The manifold employment opportunities, as well as ecosystem and cultural services, provided by the oceans create the conditions for a global ocean-based economy, which is estimated at 3 to 6 trillion dollars per year.[13]

20. Economic aspects, including through the objectives of promoting the economic advancement of all peoples of the world and contributing to the realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked, are central to the United Nations Convention on the Law of the Sea. The Convention creates an enabling legal environment for a number of economic activities relying on the use of ocean space or marine resources. For example, Convention facilitates navigation and promotes the safety of navigation, which underpins cost-effective maritime transport and international trade. The Convention and the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (the Part XI Agreement) put into effect the concept of common heritage of mankind as applied to the development of the resources of the Area, which include polymetallic or manganese nodules and polymetallic sulphides, which contain metals and rare earth elements increasingly required by high-technology industries, including electronics, and clean technologies, such as hybrid cars and wind turbines. Activities in the Area must be carried out in such a manner as to foster healthy development of the world economy and balanced growth of international trade, and to promote international cooperation for the overall development of all countries, especially developing States (see paras. 45 and 48 below). In addition, the United Nations Convention on the Law of the Sea and the 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 (the Fish Stocks Agreement) provide a comprehensive regime for the

[31] Contribution of FAO.

[32] Contribution of the European Union.

[33] Contributions of IHO and WMO.

conservation and sustainable management of marine living resources, which are an essential basis for a prosperous fisheries sector (see paras. 34-40). The Convention also provides coastal States with sovereign rights for the purpose of exploring and exploiting their non-living resources within areas under national jurisdiction and with regard to other activities for the economic exploitation and exploration of the exclusive economic zone, such as the production of energy from the water, currents and winds (see paras. 50-52). The Convention also facilitates the laying of submarine cables and pipelines (see paras. 53-55), thereby supporting international communication and trade in oil and gas (see paras. 41-49).

## B. Integration in the outcomes of sustainable development meetings

21. Although the economic, social and environmental aspects of ocean issues are closely interrelated and need to be considered as a whole, integrating these aspects has proven to be a challenge, in spite of the repeated calls made at various conferences and summits on sustainable development.

22. The United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, from 3 to 14 June 1992, was convened to address the environmental implications of economic development, recognizing that sustainable development depended upon a balance of environmental, social and economic approaches. Agenda 21,[34] the comprehensive plan of action adopted at the Conference, in its chapter 17 entitled "Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources", acknowledged, inter alia, that integrated approaches to marine and coastal area management and development had to be taken at all levels.

23. In 1997, the General Assembly adopted the Programme for the Further Implementation of Agenda 21, in which it recognized that "economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development".[35] With regard to oceans, the Programme stressed the need for approaches that are, inter alia, integrated in content and set out the commitment of States to integrated management and sustainable development of coastal areas and the marine environment.

24. The Johannesburg Plan of Implementation,[5] the outcome document of the World Summit on Sustainable Development, held in Johannesburg, South Africa, from 26 August to 4 September 2002, established new commitments and priorities for action on sustainable development in an integrated manner, and outlined actions that could be taken at the global and regional levels towards ensuring the sustainable development of the oceans, seas, islands and coastal areas, while promoting an integrated, multidisciplinary and multisectoral approach to policymaking at the national, regional and local levels.

25. The World Summit Outcome (General Assembly resolution 60/1) indicated the resolve of States to improve cooperation and coordination at all levels in order to

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[34] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

[35] General Assembly resolution S-19/2, annex, para. 23.

address issues related to oceans and seas in an integrated manner and promote integrated management and sustainable development of the oceans and seas.

26. An earlier report of the Secretary-General on oceans and the law of the sea (A/66/70/Add.1) provided more detailed information on the manner in which various conferences and summits related to sustainable development had addressed oceans issues up to that point. Subsequently, the outcome document of the United Nations Conference on Sustainable Development, entitled "The future we want" (General Assembly resolution 66/288, annex), provided an extensive assessment of the progress and gaps in the implementation of the sustainable development agenda. It devoted a specific section to oceans and seas. and emphasized the importance of the conservation and sustainable use of the oceans and seas and of their resources for sustainable development.

27. However, in "The future we want", States also acknowledged that, since 1992, there had been areas of insufficient progress and setbacks in the integration of the three dimensions of sustainable development. In that regard, they acknowledged the need to further mainstream and integrate the three pillars of sustainable development at all levels. The United Nations Conference on Sustainable Development launched a process to develop a set of sustainable development goals based on identified priority areas. The Open Working Group of the General Assembly on Sustainable Development Goals proposed an integrated, indivisible set of global priorities for sustainable development in the form of 17 goals (see A/68/970 and Corr.1). Goal 14 aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development" and includes seven substantive targets and three targets related to means of implementation.

28. In its resolution 68/309, the General Assembly decided that the proposal of the Open Working Group of the General Assembly on Sustainable Development Goals would be the main basis for integrating sustainable development goals into the post-2015 development agenda, while recognizing that other inputs would also be considered.[36] Therefore, identifying the linkages between the sustainable development of oceans and seas and the goals put forth by the Open Working Group could contribute to understanding the role of oceans in the sustainable development agenda and the need for enhanced integration of the environmental, social and economic dimensions in relation to oceans.

# III. Opportunities for, and challenges to, the enhanced integration of the three dimensions of sustainable development in relation to oceans

29. The interconnectedness of the environmental, social and economic dimensions of sustainable development in relation to oceans is, by and large, well-studied, as shown in the present section. However, enhancing integration of these dimensions and developing and implementing policies and actions that ensure balanced and integrated development of each dimension has been challenging for a number of reasons.[1] This section aims to provide a brief overview of the main challenges to, and opportunities for, enhanced integration of the three dimensions of sustainable

[36] General Assembly resolution 68/309.

development in relation to oceans, with a focus on some of the main sectors and ocean uses.

## A. Integration of the three dimensions in selected areas of ocean affairs

### 1. Shipping

30. World trade and shipping, upon which it depends, are fundamental to sustaining economic growth and promoting prosperity, thereby fulfilling a critical social and economic function.[37] Maritime shipping contributes to all three dimensions of sustainable development, including by facilitating global commerce and the transportation of goods, by directly and indirectly supporting economies and the livelihoods of people around the world and by providing a comparatively more environmentally friendly means of transportation.[38] Several socioeconomic benefits result from maritime shipping, including worldwide access to goods and services that can contribute, inter alia, to poverty eradication, reducing inequality, increasing employment opportunities and promoting sustainable growth. Shipping, ports and related auxiliary services can thus play a crucial role in supporting wealth-creating and poverty-alleviating activities in both developed and developing countries. In this context, shipping has a strategic role in international trade and supply chains.[39]

31. There is a need, however, for further efforts to integrate the environmental dimension and specific aspects of the social dimension, such as the working conditions of people at sea, in the shipping sector. Two thirds of all active seafarers are being recruited from developing countries. ILO has adopted standards aimed at workers in specific economic sectors, such as seafarers and fishers. Effective implementation of international instruments, such as the Maritime Labour Convention, 2006, of ILO, is one means to improve the working and living conditions of seafarers worldwide.[40] That Convention, along with the amendments to it adopted by the International Labour Conference in 2014, is an important instrument to protect seafarers against exploitation and safety hazards and to achieve decent work for seafarers while securing economic interests in fair competition for shipowners.[41] Capacity-building to facilitate implementation of the Maritime Labour Convention by States is crucial to the safety and security of maritime trade.

32. However, it is also important to strengthen action to suppress criminal acts at sea which endanger the welfare of seafarers (e.g., through hostage-taking) and the security of navigation and commerce. For example, between 2008 and 2012, piracy off the coast of Somalia caused serious and significant disruption to international navigation and trade, as well as loss of life, revenues and income, declines in

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[37] Contribution of IMO.

[38] See also Anna Natova, “Shipping and the three dimensions of sustainable development”, alumni contribution. Available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[39] Contributions of IMO and UNCTAD.

[40] International Chamber of Shipping, *Annual Review 2013* (London, 2013). Women make up only an estimated 2 per cent of the world’s maritime workforce (see www.itfseafarers.org/ITI-women-seafarers.cfm).

[41] See www.ilo.org/global/standards/maritime-labour-convention/WCMS_246823/lang--en/index.htm; see also A/69/71/Add.1.

seafarer recruitment and considerable additional expenses on the part of naval patrols, shipowners and protection and indemnity clubs.[42] The decline in successful attacks off the coast of Somalia, which was assisted by, inter alia, naval patrols, industry best practices, capacity-building and the development of sustainable alternative livelihoods, has had a positive impact on international shipping and trade. It has also meant a decline in threats to the lives and livelihoods of seafarers.[43]

33. The international community has continued its efforts to integrate the environmental dimension through the development of the maritime transportation sector in a safe, efficient and environmentally sound manner, having regard to the need to ensure the protection of coastal and marine resources.[44] This includes, for example, developing, implementing and enforcing energy-efficiency standards for ships, thereby reducing emissions of air pollutants and greenhouse gases from ships. (see A/69/71/Add.1). Regional organizations are also working to integrate aspects of international shipping with the need to ensure protection of the marine environment.[45]

## 2. Exploitation of marine living resources

34. The contribution of sustainable fisheries to all three dimensions of sustainable development has been repeatedly highlighted.[46] Moreover, in fisheries, the linkages between the economic dimension of resource exploitation, the environmental dimension of resource and ecosystem conservation and the social dimension of the impacts on fish workers, coastal communities and others are well-documented. Thus, the integration of all three dimensions of sustainable development in the fisheries sector is considered crucial to the achievement of sustainable fisheries. Such fisheries also contribute tangibly to food security, nutrition, health, poverty alleviation, livelihoods and gender equality and the empowerment of women.

35. The value of the marine capture seafood production at the point of harvest is approximately 20 per cent of the global food fish market, valued at $400 billion (see A/69/71, para. 41). Capture fisheries and aquaculture provide about 4.3 billion people with about 15 per cent of their average per capita intake of animal protein.[47] In addition, the social dimension, including cultural aspects, of sustainable development features prominently in the context of fisheries, in particular small-

[42] See Security Council resolution 2184 (2014). See also Jens Vestergaard Madsen and others, *The State of Maritime Piracy 2013* (Oceans Beyond Piracy, 2014).

[43] See Oceans Beyond Piracy, “Seafarers — forgotten victims of piracy”. Available from www.oceansbeyondpiracy.org/publications/seafarers-forgotten-victims-maritime-piracy.

[44] See www.imo.org/MediaCentre/HotTopics/SMD/Pages/default.aspx; see also the contributions of IHO, WMO, the Commission for the Protection of the Marine Environment of the North-East Atlantic and the secretariat of the Helsinki Commission.

[45] Contributions of the Commission for the Protection of the Marine Environment of the North-East Atlantic and the secretariat of the Helsinki Commission.

[46] See, for example, A/60/63, A/69/71 and also General Assembly resolution 69/109.

[47] Contribution of FAO.

scale fisheries.[48] For small island developing States, in particular, sustainable fisheries and aquaculture are among the main building blocks of a sustainable ocean-based economy.[49] For example, tuna resources are critical to the livelihood, economies and culture of many Pacific islanders.[50]

36. Capture fisheries and aquaculture contribute, either directly or indirectly, to over 200 million jobs globally.[51] FAO estimates that, overall, fisheries and aquaculture assure the livelihoods of 10 to 12 per cent of the world's population.[52] Moreover, Africa and Asia have shown sustained growth in the number of people engaged in capture fishing and even higher rates of increase in those engaged in fish farming.[25] Women accounted for more than 15 per cent of all people directly engaged in the fisheries primary sector in 2012, the proportion of women rising to 90 per cent in secondary activities (e.g., processing).[25]

37. However, the fisheries sector suffers around 24,000 human losses annually, underlining the urgent need to provide decent working conditions for fishers. Efforts are ongoing to address the issue.[53] Apart from the social impact, the improvement of working conditions is also important for ensuring the economic viability of this sector and protecting the marine environment.[54]

38. The crucial role fisheries can play in maintaining healthy marine ecosystems is attested to by the direct and indirect detrimental ecosystem effects of a wide range of unsustainable practices.[55] Overfishing, illegal, unreported and unregulated fishing and destructive fishing practices pose challenges to the health of marine ecosystems and the sustainability of resource exploitation (see A/69/71, sect. III.A). They can also have negative economic and social consequences, in particular on coastal communities and small-scale fisheries.[56] The contribution of fisheries to sustainable development can be improved by appropriately balancing economic, environmental and social considerations in fisheries management.[57] For example, it is estimated that rebuilding overfished stocks could increase fishery production by 16.5 million tons and annual revenue by $32 billion, which would certainly increase

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[48] Christophe Béné, *Small-Scale Fisheries: Assessing their Contribution to Rural Livelihoods in Developing Countries*, FAO Fisheries Circular No. 1008 (Rome, FAO, 2006); see also Matthew Ansy, "Small-scale fisheries (SSF) in India", and Amnaj Siripetch and Sampan Panjarat, "Improved access to fisheries resources by small-scale fishers in the Andaman Sea by construction of artificial reefs", alumni contributions, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[49] General Assembly resolution 69/15, annex.

[50] Contribution of the Forum Fisheries Agency.

[51] Contribution of FAO.

[52] FAO, *The State of World Fisheries and Aquaculture 2012* (Rome, 2012).

[53] See contribution of ILO. See also A/69/71/Add.1. At the regional level, good practices for the protection of migrant fishers were discussed at the ILO Regional Meeting on Work in Fishing, held in Makassar, Indonesia, on 12 and 13 September 2013.

[54] Contribution of ILO.

[55] Contribution of FAO.

[56] Organization for Economic Cooperation and Development (OECD), *Why Fish Piracy Persists: The Economics of Illegal, Unreported and Unregulated Fishing* (Paris, OECD Publishing, 2005); FAO, *The State of World Fisheries and Aquaculture 2014* (see footnote 25 above); International Criminal Police Organization (INTERPOL), *Study on Fisheries Crime in the West African Coastal Region* (2014).

[57] Contribution of FAO.

the contribution of marine fisheries to the food security, economies and well-being of coastal communities.[25]

39. Several challenges remain in fully realizing the benefits of sustainable development and balancing the three dimensions of sustainable development in the context of fisheries. First and foremost, efforts should be made to ensure the full and effective implementation of the United Nations Convention on the Law of the Sea, the Fish Stocks Agreement and other relevant instruments.[58] Another challenge is the lack of capacity to develop and manage fisheries in a sustainable manner.[59] In addition, different States or stakeholders may have different objectives for a fishery on the basis of their perceptions of economic or social context and values.[59] Modernization also poses challenges since, in some cases, traditional knowledge and community-based resource management practices, which may provide the most appropriate and unique opportunities for achieving sustainable use of coastal and oceanic resources, may be abandoned or lost.[60]

40. At the global, regional and national levels, various ongoing fisheries-related initiatives are aimed at furthering the goal of achieving sustainable development by integrating its three dimensions, often explicitly considering socioeconomic aspects, including the dependency of coastal communities on such resources.[61] Issues covered in such initiatives include enhanced cooperation, including in enforcement activities,[62] cross-sectoral cooperation,[63] capacity-building[64] and the application of ecosystem and precautionary approaches.[65]

### 3. Exploitation of non-living resources

41. The sustainable exploitation of non-living resources can have direct economic and social benefits and the potential to contribute to other areas recognized as important for sustainable development, including energy and sustainable consumption and production patterns. For example, with regard to oil extraction, it is estimated that, for 2015, the total offshore oil production will be 26.7 million barrels per day,[66] constituting almost a third of the total oil production for the year.[67] Offshore deposits will continue to be an important source of oil and gas for years to come, given that, of the estimated 565 billion barrels of undiscovered conventional crude oil resources, almost two thirds are estimated to lie offshore, and almost three quarters of the estimated 167 billion barrels of undiscovered natural

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[58] A/69/71/Add.1; FAO, *The State of World Fisheries and Aquaculture 2014* (see footnote 25 above). It has been noted that, in some regional fisheries management organizations, the maximum sustainable yield is insufficiently qualified by relevant environmental and economic factors as required in article 61, paragraph 3, of the United Nations Convention on the Law of the Sea (contribution of the Forum Fisheries Agency).

[59] Contribution of the Secretariat of the Pacific Community.

[60] Contribution of the secretariat of the Pacific Regional Environment Programme.

[61] See contributions of FAO, the secretariat of the Convention on Biological Diversity, UNDP, the North Atlantic Salmon Conservation Organization and the European Union.

[62] Contribution of the North Pacific Anadromous Fish Commission.

[63] Contribution of the Northwest Atlantic Fisheries Organization.

[64] Contributions of the South East Atlantic Fisheries Organisation, the Forum Fisheries Agency and the United Nations University Fisheries Training Programme.

[65] Contributions of FAO, the Northwest Atlantic Fisheries Organization and the South East Atlantic Fisheries Organization.

[66] See www.rystadenergy.com/.

[67] International Energy Agency, *Medium-term Oil Market Report 2015* (Paris, 2015).

gas liquids are offshore.[68] The potential of seabed mining is more difficult to estimate, as exploration is still under way. However, it is estimated that polymetallic nodules in the Clarion-Clipperton Zone alone potentially contain 17,500 million tons of manganese, 761 million tons of nickel, 669 million tons of copper and 134 million tons of cobalt.[69]

42. While the potential collateral environmental damage of unsustainable extraction, including through oil spills and habitat destruction, have attracted most of the attention, it is important to consider the social aspects as well.

43. Efforts have been taken to integrate environmental and social aspects into the operations of extractive industries.

44. Mining and oil and gas industry associations have placed great emphasis on the development and use of international standards to increase safety and reduce the environmental impact of operations.[70] This is a direct consequence of the growing impetus from various stakeholders, including Governments,[71] to integrate environmental, economic and social aspects through all phases of work in the extractive industries.

45. With regard to deep-sea mining, the work of the International Seabed Authority towards the development of a mining code to regulate prospecting, exploration and exploitation of marine minerals in the Area places emphasis on finding the optimum fiscal balance to provide sufficient profitability, while identifying the threshold standards for environmental and mining safety. The development of a code will also help determine whether exploitation can provide sufficient returns to benefit mankind as a whole, and respond to the real and perceived environmental concerns, before full-scale mining can commence.[72] Most notably, an environmental management plan for the Clarion-Clipperton Zone was issued by the Legal and Technical Commission of the Authority in 2011.[73] Also, studies are under way to investigate the potential environmental impacts of different mining technologies.[74]

46. Environmental concerns are also present in the regulation of offshore oil and gas installations. A number of provisions of international instruments concerning

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[68] International Energy Agency, *World Energy Outlook 2014* (Paris, 2014).

[69] Charles Morgan, "A geological model of polymetallic nodule deposits in the Clarion-Clipperton Fracture Zone", Briefing Paper 01/12 (Kingston, International Seabed Authority, 2012).

[70] See, for example, International Association of Oil and Gas Producers, Regulators' Use of Standards, at www.ogp.org.uk/pubs/426.pdf); International Council on Mining and Metals, Sustainable Development Framework (www.icmm.com/our-work/sustainable-development-framework); International Association of Drilling Contractors, Health, Safety and Environment Case Guidelines for offshore drilling rigs, at www.iadc.org/iadc-hse-case-guidelines).

[71] See, for example, Government of Australia, Leading Practice Sustainable Development Program for the Mining Industry (www.industry.gov.au/resource/Programs/LPSD/Pages/default.aspx).

[72] See International Seabed Authority, *Towards the Development of a Regulatory Framework for Polymetallic Nodule Exploitation in the Area*, Technical Study No. 11 (Kingston, 2013) (executive summary also available as ISBA/19/C/5).

[73] See ISBA/17/LTC/7.

[74] See www.jpi-oceans.eu/news-events/news/deep-sea-mining-what-are-risks-kick-meeting-pilot-action-impact-assessment.

dumping, pollution from ships and pollution from ballast water also apply to fixed and floating drilling rigs and other platforms.[75]

47. From a socioeconomic perspective, the oil and gas sector has the potential to create local value by providing employment and developing local value chains as a consequence of its operations. That potential is often harnessed thanks to local-content requirements, which obligate foreign oil and gas companies to source part of their work force, services and/or materials in the countries where they operate.[67]

48. In the context of deep seabed mining, the Convention and the Part XI Agreement put into effect the common heritage of mankind as applied to the Area and its resources. This includes promoting cooperation in marine scientific research and transfer of technology and scientific knowledge to developing countries.[76]

49. The Deep Sea Minerals Project of the Secretariat of the Pacific Community and the European Union provides an example of the integration of the three dimensions of sustainable development.[77] The project aims at strengthening national efforts in favour of increased economic growth for the Pacific region while promoting national regulatory frameworks requiring environmental management and public participation and securing reasonable and equitable arrangements. The project, which has a strong focus on a multi-stakeholder approach and capacity-building, has led to the development of comprehensive national offshore policies and legislation for an integrated approach to the sustainable development of deep sea mineral resources.

### 4. Marine renewable energy

50. Marine renewable energy remains an untapped source of energy,[78] which as of 2010 represented less than 0.01 per cent of global energy consumption.[79] However, the potential of marine renewable energy is significant, with estimates of technically exploitable energy exceeding current and projected energy usage.[80] Just as renewable energy has the capacity to deliver multiple economic, environmental and social benefits,[1] marine renewables have a similar potential and have been considered, in detail, in the context of sustainable development.[81]

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[75] For example, the International Convention for the Prevention of Pollution From Ships, 1973, as modified by the Protocol of 1978 relating thereto: the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004; and the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972.

[76] Contribution of the International Seabed Authority.

[77] Contribution of the Secretariat of the Pacific Community; for further information see www.sopac.org/dsm/.

[78] See A/67/120 and A/67/79.

[79] S. G. Banerjee and others, *Global Tracking Framework*, vol. 3, *Sustainable Energy for All* (Washington, D.C., World Bank, 2013).

[80] See A/67/79, para. 18.

[81] The thirteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea addressed marine renewable energy as its topic of focus in 2012, including opportunities and challenges in the context of sustainable development (see A/67/120).

51. Access to energy is a fundamental factor of economic growth and human development, which are preconditions for poverty alleviation and the improvement of health, education, gender equality and environmental safety.[82] It is recognized, however, that the marine renewables sector is nascent and the potential of marine renewables is largely unproven pending further research and development.[83] Offshore wind generation, which is the most advanced of marine renewables,[83] typically has higher costs than fossil fuel-based power generation and other renewables such as land-based wind power generation.[84] However, costs vary depending upon site-specific factors, including availability of existing infrastructure, grid connection costs and local labour rates.[84] It is expected that offshore wind will be an increasing part of the energy mix as costs decrease.[84] The unbalanced state of utilization of marine renewables between developed and developing States has been noted and, in order to ensure access to marine renewables for all peoples, calls have been made for capacity-building and technology transfer (see A/67/120).

52. Marine renewable energy can, if proven, contribute to the supply of affordable, reliable, sustainable and modern energy in the future. It can also yield socioeconomic benefits, including poverty eradication, sustainable growth, reduced inequality, and increased employment opportunities. It also contributes to mitigation efforts in relation to climate change by offering low- and no-carbon footprint alternatives to fossil fuels.

### 5. Laying of submarine cables

53. Submarine cables are critical communications infrastructure, being used for more than 98 per cent of international Internet, data and telephone traffic, with only a few States being without fibre connectivity, and many of these having cable projects currently under way.[85] Submarine cables are recognized as vitally important to the global economy[86] and hence to economic growth. By underpinning international communications, their role in providing access to data and information for all peoples is evident.

54. The environmental dimension of submarine cables is, however, less apparent. Submarine cables themselves are considered to have a low-carbon footprint and a small relative impact on the environment, with the maintenance of submarine cables causing the highest impacts as a result of the operation of the cable ships themselves.[87] Submarine cables have the potential to be contribute actively to disaster warning and addressing climate change, with work under way to examine the potential for monitoring purposes.[88]

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[82] O. Edenhofer and others, *Renewable Energy Sources and Climate Change Mitigation: Special Report of the Intergovernmental Panel on Climate Change* (Cambridge, Cambridge University Press, 2012).

[83] See A/67/120 and A/67/79.

[84] International Renewable Energy Agency, *Renewable Power Generation Costs in 2014* (2015).

[85] D. Burnett, D. Freestone and T. Davenport, "Submarine cables in the Sargasso Sea: legal and environmental issues in areas beyond national jurisdiction", report of a workshop held in Washington, D.C., on 23 October 2014 (2015).

[86] See General Assembly resolution 69/245.

[87] C. Donovan, "Twenty thousand leagues under the sea: a life cycle assessment of fibre optic submarine cable systems" (Stockholm, 2009).

[88] See A/67/79/Add.1 and A/69/71/Add.1. See also www.itu.int/en/ITU-T/climatechange/task-force-sc/Pages/default.aspx.

55. Functioning as the backbone of the international telecommunications system, submarine cables are a fundamental component of the critical global infrastructure and play a direct role in sustainable industrialization; indirectly they contribute to all other areas recognized as important for sustainable development.

### 6. Tourism

56. Over the last 50 years, tourism has become one of the largest economic sectors in the world, accounting for an estimated 9 per cent of world GDP.[89] Cultural tourism is one of the largest and fastest-growing global tourism markets, encouraging tourist locations to actively develop their cultural assets.[89] The growth in tourism has been especially significant in developing and least developed countries, where it is one of the principal sources of foreign exchange and often the most viable and sustainable economic development option.[89] For example, tourism was a main factor in the recent advancement of Botswana, Cabo Verde and Maldives from their status as least developed countries.[89]

57. It is recognized that well designed and managed tourism can make a significant contribution to the three dimensions of sustainable development.[90] Sustainable tourism, can, in particular, contribute to eradicating extreme poverty and hunger (see A/68/278). It may also have beneficial effects on livelihoods and infrastructure development.

58. Sustainable tourism is based on visitors seeking to experience intact and clean environments and attractive natural areas.[91] This provides incentives for host countries to protect and preserve their environments. The past few decades have seen a substantial growth in coastal ecotourism,[91] which encourages increased protection of coastal ecological attractions, such as coral reefs and marine wildlife, including through marine parks and pollution control measures.

59. Despite its positive potential, tourism can also have a number of negative impacts. For example, it is a significant and growing contributor to carbon dioxide emissions, a growing cause of pollution of land and sea and a major user of non-renewable resources.[91] In addition, the economic benefits of the sector do not necessarily accrue to local populations, as illustrated by cruise tourism, one of the fastest growing segments of tourism. The foreign cruise ship companies enjoy most of the economic benefits, while many of the costs are borne by the port cities and their local populations.[92] On the social front, tourism can also lead to socioeconomic stratification, strained public services and infrastructure and resource conflicts, among others.[93]

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[89] World Tourism Organization, *Sustainable Tourism for Development Guidebook* (Madrid, 2013) (available from www.unwto.org/ebook/sustainable-tourism-for-development/).

[90] See General Assembly resolution 66/288, annex.

[91] John Davenport and Julia L. Davenport, "The impact of tourism and personal leisure transport on coastal environments: a review", *Estuarine, Coastal and Shelf Science*, vol. 67, Nos. 1-2 (2006).

[92] Juan Gabriel Brida and Sandra Zapata, "Cruise tourism: economic, socio-cultural and environmental impacts", *International Journal of Leisure and Tourism Marketing*, vol. 1, No. 3 (2010).

[93] Bruce Epler, "Tourism, the economy, population growth, and conservation in Galapagos" (2007).

60. In order for tourism to make a positive contribution to sustainable development, it is crucial that it be sustainable itself and take full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.[94]

### 7. Natural and cultural heritage

61. The preservation of natural and cultural heritage sites can promote balance among the economic, social and environmental aspects of development, if all three aspects are integrated. Such sites can contribute to the conservation and sustainable management of ecosystems and protection of historical or archaeological sites and their integrity, thereby sustaining societies that depend on them and their economic activities.

62. However, if measures solely protect the environment from disturbance by people, some local groups may be losing their traditional fishing grounds, natural habitat and cultural identity.[95] The protection of natural or cultural sites must occur in parallel with the safekeeping of societal traditions and practices and the preservation of the sites' role as a source of economic revenue, in order to ensure sustainable development. For example, small-scale fisheries or traditional practices can be an integral part of the community lifestyle, incorporating skills, knowledge and values that have roots in the natural environment and coastal societies.[96] Successful examples of the environmental, social and economic benefits of the preservation of underwater cultural heritage include the "Gaiola" and "Baia" underwater parks in Italy, which include Roman structures of great archaeological interest.[97]

### 8. Conservation and sustainable use of marine biodiversity

63. In addition to its intrinsic value, biodiversity is the basis for many of the ecosystem services provided by the oceans, including supporting, provisioning, regulating and cultural services, which are critical foundations for sustainable development and human well-being (see paras. 9-13 above).[98] The importance of the conservation and sustainable use of marine biodiversity, both within and beyond national jurisdiction, for sustainable development has been repeatedly recognized.[99] In particular, the significant economic, social and environmental contributions of coral

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[94] UNEP and World Tourism Organization, *Making Tourism More Sustainable: A Guide for Policy Makers* (2005).

[95] See "The Wadden Sea fishing community, a tangible and intangible heritage?", available from www.slowfood.com/slowfish/pagine/eng/news/dettaglio_news.lasso?-idn=126.

[96] A. Rim-Rukeh, G. Irerhievwie and I. E. Agbozu, "Traditional beliefs and conservation of natural resources: evidences from selected communities in Delta State, Nigeria", *International Journal of Biodiversity and Conservation*, vol. 5, No. 7 (2013).

[97] Gonzalo Rodríguez Prado, "Underwater cultural heritage: public-private partnership example", alumni contribution. Available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[98] See, for example, General Assembly resolution 66/288, annex; see also Gangwon Declaration on Biodiversity for Sustainable Development, adopted at the high-level segment of the twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity on 16 October 2014, available from www.cbd.int/cop12/hls.shtml.

[99] See General Assembly resolution 66/288, annex.

reefs, especially to islands and other coastal States, have been highlighted,[100] as has the value of marine genetic resources.[101] Biodiversity and the related traditional knowledge are particularly important for the sustainable livelihoods of indigenous and local communities as well as vulnerable groups (see paras. 79-83 below).[102]

64. The production and consumption patterns for food, energy and shelter resulting from an increasing global population, as well as unsustainable resource extraction, pollution, the impacts of climate change and ocean acidification, invasive alien species and habitat destruction are among the several causes and drivers of marine biodiversity loss. At the same time, marine biodiversity loss undermines sustainable economic growth and social development as well as poverty eradication by affecting the continued provision of many ecosystem services provided by the oceans.[103]

65. A number of initiatives at global and regional levels have been undertaken to promote, inter alia, mainstreaming of the consideration of the socioeconomic impacts and benefits of the conservation and sustainable use of biodiversity and its components into relevant programmes and policies;[104] integrated planning and management (see paras. 89-101 below), in particular with regard to coral reefs; and community-based measures.[105] In light of the role that economic valuation may have in raising awareness of the economic benefits of biodiversity and ecosystem services and consequently fostering conservation and sustainable use, work is also being carried out in that regard.[106] The role of access to genetic resources, and of sharing the benefits derived from their use, in the conservation and sustainable use of biodiversity, poverty eradication and environmental sustainability has also been recognized and measures taken to promote it.[107]

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[100] See General Assembly resolutions 66/194 and 66/288, annex. The Micronesia Challenge, the Eastern Tropical Pacific Seascape project, the Caribbean Challenge and the Coral Triangle Initiative (see resolution 69/245, para. 230) recognize the significant economic, social and environmental contributions of coral reefs, in particular to the development of islands States and other coastal States.

[101] See General Assembly resolution 69/245 and A/62/66. An OECD report noted that marine biotechnology might help to address the global challenges of food, energy security and health and contribute to green growth and sustainable industries. It also indicated that the global market for marine biotechnology products and processes was believed to offer a significant and growing economic opportunity, with an estimated global market for marine biotechnology of €2.8 billion (2010 estimate), with a compound annual growth rate of 4 to 5 per cent (or 10 to 12 per cent under less conservative assumptions) (OECD, *Marine Biotechnology: Enabling Solutions for Ocean Productivity and Sustainability* (Paris, OECD Publishing, 2013))

[102] See Gangwon Declaration on Biodiversity for Sustainable Development (available from www.cbd.int/cop12/hls.shtml) and General Assembly resolution 66/288, annex.

[103] See General Assembly resolution 66/288, annex, and the Chennai guidance for the integration of biodiversity and poverty eradication (UNEP/CBD/COP/12/29, decision XII/5, annex); see also Paul L. Lucas and others, "Integrating biodiversity and ecosystem services in the post-2015 development agenda: goal structure, target areas and means of implementation", *Sustainability*, vol. 6, No. 1 (2014).

[104] See Chennai guidance for the integration of biodiversity and poverty eradication (UNEP/CBD/COP/12/29, decision XII/5, annex); see also information material available from www.cbd.int/development/default.shtml.

[105] See contributions of the secretariat of the Convention on Biological Diversity, the Commission for the Conservation of Antarctic Marine Living Resources, the International Coral Reef Initiative and UNEP.

[106] Contribution of the International Coral Reef Initiative.

[107] See Gangwon Declaration on Biodiversity for Sustainable Development (available from www.cbd.int/cop12/hls.shtml); see also contribution of the secretariat of the Convention on Biological Diversity.

66. Effective integration is still hampered by a number of challenges. In particular, there is a need to strengthen efforts towards the effective implementation of relevant international instruments, as well as cooperation in capacity-building and transfer of technology. A better understanding of the causes and drivers of biodiversity loss that exacerbate poverty is also critical.[108] In addition, existing knowledge, including traditional knowledge, appears to be underused in decision-making at all levels.[109] Significant investments are required for scaling up successful approaches.[109] Greater emphasis on the links between biodiversity loss and consumption choices may also be beneficial in bringing about sustainable consumption patterns.[109] While approaches linked to economic benefits, such as environmentally friendly and culturally responsible tourism (see paras. 56-60 above) or payments for ecosystem services, may help in meeting the costs of conservation[109] and also benefit local communities and women (see paras. 79-84 below),[110] challenges remain. For example, it is thought that, in order to bring about a change in behaviour, economic valuation must be accompanied by supporting public policies that either reward positive individual actions or disincentivize harm.[111] In addition, any economic assessment should include a thorough accounting of market and non-market values. Given the difficulty of valuing less tangible or quantifiable non-market values, there is a need for additional socioeconomic and environmental indicators.[112] The existence of an appropriate institutional and governance framework for designing and implementing payments, together with the associated monitoring and regulation, are critical to the success of such initiatives.[109]

## 9. Oceans and climate change and ocean acidification

67. Climate change, including its impacts on oceans, and ocean acidification affect all States and undermine their ability, in particular that of developing countries, to achieve sustainable development and threaten the viability and survival of nations.[113] Sea level rise, loss of polar ice, extreme weather events, ocean warming and acidification are causing, inter alia, destruction of property and loss of lives, changing coastlines, coral bleaching, displacement of fish stocks and ecosystem degradation, all of which affect the food security, livelihood and development of communities in both developing and developed States. The opening of new navigational routes, for example in the Arctic region, as a result of climate change may have a positive impact on international trade. However, the environmental and social impacts also need to be considered.[114]

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[108] See UNEP document, UNEP/CBD/COP/12/29, decisions XII/4 and XII/5, annex.

[109] Michael R. W. Rands and others, “Biodiversity conservation: challenges beyond 2010”, *Science*, vol. 329, No. 5997 (2010).

[110] See Laely Nurhidayah, “Conservation and sustainable use of marine biodiversity”, alumni contribution, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm; see also the case studies on marine and coastal biodiversity provided on the website of the secretariat of the Convention on Biological Diversity (www.cbd.int/case-studies/default.shtml).

[111] Michael R. W. Rands et al.

[112] OECD, *Marine Biotechnology* (see footnote 112 above).

[113] General Assembly resolution 66/288, annex. See also A/69/71 and Add.1.

[114] See also Intergovernmental Panel on Climate Change, *Climate Change 2014: Impacts, Adaptation, and Vulnerability — Part A: Global and Sectoral Aspects* (Cambridge, Cambridge University Press, 2014), chap. 6.

68. Actions targeting the causes of climate change and ocean acidification, in particular cuts in greenhouse gas emissions, are essential to addressing the above challenges. At the same time, the importance of maintaining healthy marine and coastal ecosystems to ensure their continued climate change mitigation and adaptation functions, as well as building resilience to ocean acidification, cannot be overstated, especially in view of the link to poverty eradication, food security and sustainable economic growth. Action aimed at the management of climate-related coastal and marine hazards is also of major importance in view of the critical impediment they pose to social and economic development and poverty eradication.[115] Also crucial is the strengthening of capacity, particularly in small island developing States, for the collection of climate data and information for early warning and disaster risk reduction.[116]

69. In addition, the development of marine renewable energies (see paras. 50-52 above) could foster increased energy security, generate employment and play a role in mitigating the impacts of climate change (see A/67/120).

70. Coastal wetlands (salt marshes, mangroves and sea-grass beds) provide a good example of ecosystems which support coastal development and function as important carbon sinks, absorbing and holding large quantities of carbon dioxide.[117] It is estimated that, annually, these ecosystems sequester carbon at a rate two to four times greater than mature tropical forests and store three to five times more carbon per equivalent area than tropical forests.[118] These coastal habitats also provide rich fishing grounds for coastal communities, support nutrient recycling and shoreline stabilization and provide storm protection and flood attenuation, hence providing essential ecosystem services for food security, sustainable livelihoods, disaster reduction and adaptation to climate change. These ecosystems are under increasing pressure from coastal development projects, to the extent that globally about 35 per cent of mangroves have disappeared since 1980. With their destruction, ecosystem services are lost and large quantities of stored carbon dioxide are emitted as a result of the oxidization of organic sediments and biomass. Better protecting the world's fast-disappearing coastal wetlands could have economic, social and environmental benefits, while at the same time providing quantifiable mitigation outcomes, which may also generate capital through climate finance mechanisms.[119]

## B. Addressing vulnerabilities

71. Owing to their particular vulnerabilities, certain States and groups are particularly challenged in their efforts to achieve sustained and inclusive economic growth, social development and environmental protection. In "The future we want" (General Assembly resolution 66/288, annex), States recognized that each country

[115] Contribution of WMO.

[116] Contribution of the Economic Commission for Africa.

[117] T. Hiraishi and others, eds., *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (Geneva, Intergovernmental Panel on Climate Change, 2014).

[118] B. C. Murray and others, "Green payments for blue carbon: economic incentives for protecting threatened coastal habitats", Nicholas Institute for Environmental Policy Solutions report, NI-R-11-04 (Durham, North Carolina, Duke University, 2011).

[119] UNEP and the Center for International Forestry Research, "Guiding principles for delivering coastal wetland carbon projects" (Nairobi and Bogor, Indonesia, 2014).

faced specific challenges to achieve sustainable development and underscored the special challenges facing the most vulnerable countries, in particular, African countries, least developed countries, landlocked developing countries, and small island developing States. It was further recognized that countries in situations of conflict needed special attention.

72. Despite the growing understanding of the importance of disaster risk reduction and increased disaster response capacities,[120] the vulnerabilities of all States to various shocks and disasters, and the need for mitigating, preparing for and building resilience against such risks, remain a global concern. Such shocks and disasters include environmental risks, such as extreme weather events, sea level rise and major biodiversity loss; economic risks, such as energy price shocks, fiscal and/or financial crisis and high structural unemployment; and social risks, such as conflicts, civil unrest, food crises and rapid and massive spread of infectious diseases.[121]

73. Global risks are interconnected. The occurrence of any major shock or disaster in any area has the potential to cause other shocks, as well as long-term consequences for affected States and individuals and the world economy. The manifestations of global risks are often regional, national or local. Hence, tailored approaches at each of those levels are often necessary to account for variations in transnational, national and local vulnerabilities in building mitigation strategies.[122]

74. In the context of oceans, it is of paramount importance to work towards mitigation of and preparation for risks associated with extreme weather events, such as hurricanes and tsunamis, as well as those associated with climate change and sea level rise.[123] Of particular concern in that regard are the unique and particular vulnerabilities of small island developing States. Adaptation to the effects of climate change represents an immediate and urgent global priority for all States given the challenges it poses to sustainable development.[124]

75. *African States*. The 2050 Africa's Integrated Maritime Strategy notes that Africa's oceans and seas are under pressure from various threats such as crimes at sea, degradation of the marine environment, loss of biodiversity and aggravated effects of climate change.[125] The decision of the Assembly of the African Union at its twenty-second ordinary session, held in Addis Ababa on 30 and 31 January 2014, to adopt the 2050 Africa's Integrated Maritime Strategy and to retain 2015 to 2025 as the "Decade of African Seas and Oceans" represents an opportunity for integrated sustainable development of the oceans by African States at both the regional and national levels.[126] The recently adopted Africa Agenda 2063 recognizes the important role of the 2050 Africa's Integrated Maritime Strategy in facilitating sustainable development

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[120] See, for example, the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, as well as the Sendai Framework for Disaster Risk Reduction 2015-2030 (A/CONF.224/L.2).

[121] For a comprehensive list of global risks see World Economic Forum, *Global Risks 2015*, 10th ed. (Geneva, 2015).

[122] UNDP, *Human Development Report 2014: Sustaining Human Progress — Reducing Vulnerabilities and Building Resilience* (New York, 2014); Intergovernmental Panel on Climate Change, Climate Change 2014: (see footnote 115 above).

[123] General Assembly resolution 66/288, annex.

[124] General Assembly resolution 69/15, annex.

[125] See http://pages.au.int/maritime/documents/2050-aim-strategy-0.

[126] See http://au.int/en/content/addis-ababa-30-31-january-2014-%E2%80%93-assembly-african-union-twenty-second-ordinary-session.

on the continent and expresses the aspiration for Africa to be a continent with the sustainable use, equitable sharing of benefits and conservation of its vast natural and marine resources, including the "blue economy". It includes a chapter to guide the continent's pursuit of a blue economy development model for African small island developing States.[127]

76. *Least developed countries*. Maritime traffic constitutes the main transport mode through which most least developed countries conduct international trade.[128] However, container dwell times in the ports of some African least developed countries range from 12 to 15 days, above the international practice of seven days. Highway networks have been developed or are being developed to facilitate transport, including for least developed countries. The Programme of Action for the Least Developed Countries for the Decade 2011-2020 (Istanbul Programme of Action) recognizes the importance of marine and coastal resources and of access to the sea for the economic growth of least developed countries; it also refers to the utilization of tidal energy to increase the capacity for energy generation in least developed countries.[129]

77. *Landlocked developing countries*. The average distance to a seaport for landlocked developing countries is 1,370 km.[130] Despite an overall trend in reduced export delays, it takes an average of 43 days to export from landlocked developing countries. This is reportedly more than twice the time required to export from coastal developing countries and 20 days more than the time required to export from transit countries.[131] In 2011, landlocked developing countries' exports accounted for 1.2 per cent of world exports and their total share in global trade was 1.17 per cent, showing continued marginalization of the group of countries in the world economy.[130] In recognition of the special situation of landlocked developing countries and geographically disadvantaged States, the United Nations Convention on the Law of the Sea devotes an entire section to their needs. The Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024,[132] adopted during the second United Nations Conference on Landlocked Developing Countries, held in Vienna from 3 to 5 November 2014, highlighted the key role that freedom of transit and transit facilities play in the overall development of landlocked developing countries through full integration into the global trading system.[133] A number of transit cooperation agreements including transport corridors have been concluded, such as in Asia and Africa.[133] The General Assembly, in its resolution 69/245, noted the need for cooperation to address the development needs and challenges faced by landlocked developing countries associated with, inter alia, their lack of direct

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[127] Contribution of the Economic Commission for Africa.

[128] Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, *State of the Least Developed Countries 2014: Follow-up of the Implementation of the Istanbul Programme of Action for the Least Developed Countries* (2014).

[129] See http://unohrlls.org/about-ldcs/istanbul-programme-of-action/.

[130] Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, "Landlocked developing countries (LLDCs)", Factsheet (2013).

[131] Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, *The Development Economics of Landlockedness: Understanding the Development Costs of Being Landlocked* (2013).

[132] General Assembly resolution 69/137, annex II.

[133] Ibid. See also contribution of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

territorial access to the sea, remoteness and isolation from world markets, in line with the objectives of the Vienna Programme of Action.

78. *Small island developing States*. Sustainable fisheries and aquaculture, coastal tourism, the possible use of seabed resources and potential sources of renewable energy are among the main building blocks of a sustainable ocean-based economy in small island developing States.[134] Challenges include limited economic capacity and knowledge, resource management, climate change and sea level rise and growing populations.[135] Particular challenges also remain for Pacific small island developing States in the integration of the three dimensions of sustainable development, which stem in part from geographic remoteness from main trade partners, limited volumes of trade, heavy reliance on imports and low volumes of exports highly concentrated in a few products.[136] The effective participation of small island developing States in global trade requires addressing both port facilities and trade logistics in order to develop a sustainable transport system,[136] as well as increased capacity-building and improved transfer of technologies. In the SIDS Accelerated Modalities of Action (SAMOA) Pathway (Samoa Pathway), States reaffirmed the status of small island developing States as a special case for sustainable development in view of their unique and particular vulnerabilities. They recognized the significant challenges that small island developing States face in the attainment of sustainable development goals and highlighted the crucial importance of international cooperation and partnerships to that end.[137] A number of activities have been undertaken by Pacific small island developing States related to maritime boundaries, oceanic fisheries, coastal fisheries and deep sea mining aimed at strengthening policies, legal frameworks, institutions and management measures at the national level,[138] including fostering the use of traditional knowledge and community-based resource management practices, ecosystem-based management and adaptation of ocean and island natural resources (ridge-to-reef, integrated island management).[139]

79. *Vulnerable groups*. Vulnerable groups include, but are not limited to, the poor, migrants, refugees, displaced persons, women, children and indigenous groups, and others who experience "exposure to contingencies and stress, and difficulty in coping with them".[140] The deterioration of coastal and marine ecosystems and habitats is negatively affecting human well-being worldwide, with more severe and immediate impacts on the poor and vulnerable, women, children and indigenous peoples owing, inter alia, to their oftentimes high dependency on natural resources.

80. Impoverished people are more likely to take dangerous jobs at sea. Small-scale fishers, in particular in small island developing States, are particularly vulnerable to environmental impacts and high occupational risk, with few alternative livelihoods.[141]

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[134] Contribution of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

[135] Contribution of the secretariat of the Pacific Regional Environment Programme.

[136] *Review of Maritime Transport 2014* (United Nations publication, Sales No. E.14.II.D.5). See also contribution of ECA.

[137] General Assembly resolution 69/15, annex.

[138] Contribution of the Secretariat of the Pacific Community.

[139] Contribution of the secretariat of the Pacific Regional Environment Programme.

[140] Christophe Béné, *Small-Scale Fisheries: Assessing their Contribution to Rural Livelihoods in Developing Countries* (see footnote 48 above).

[141] Contribution of FAO.

They are also exposed to natural disasters[142] and violence, among others.[140] Integrated management of social, economic and environmental systems underpinning small-scale fisheries can mitigate these risks (see paras. 34-40 above).[143]

81. Indigenous peoples may sometimes not be involved in decision-making about development policies.[144] The international community is increasingly attentive to the need to recognize the cultural relationships of indigenous peoples to the oceans and their resources (see paras. 17 and 61-62 above) and the need to obtain their consent for commercially exploitative activities that might affect them.[145]

82. Persisting gender gaps relative to women's economic positions, their dominant role in the care economy and their increased likelihood of participating in the informal economy may cause women's contributions to sustainable development to be undervalued.[146] Yet, evidence suggests that investing in food enterprises owned by women could narrow the resource gap and improve food security, and that women's participation in trade and services has contributed not only to their own economic empowerment, but also to national competitiveness.[147] For example, women constitute the majority of those engaged in secondary activities related to marine fisheries and marine aquaculture, such as fish processing and marketing (see also para. 36 above).

83. As indicated in paragraph 14 above, migrants can contribute to economic growth and social development. However, they are also vulnerable. Migrants, refugees and asylum seekers travelling by sea in an irregular situation are especially at risk of human rights abuses by traffickers and smugglers.[148] Work is ongoing to promote better coordination and cooperation in combatting transnational crime, including trafficking and smuggling.[149]

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[142] Contribution of ECA.

[143] Matthew Ansy, "Small scale fisheries (SSF) in India", alumni contribution, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[144] Permanent Forum on Indigenous Issues, "Indigenous peoples' participation in decisions impacting community, land, culture critical to their human rights, speakers tell Permanent Forum", 22 May 2013, available from www.un.org/press/en/2013/hr5134.doc.htm; see also Yetunde E. Agbeja, "Sustaining livelihood through community managed fishing license banks: the case of First Nations of British Columbia", alumni contribution, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[145] See "Pacific Declaration of the Preparatory Meeting for Pacific Indigenous Peoples on the 2014 World Conference on Indigenous Peoples", held in Sydney, Australia, from 19 to 21 March 2013. Available from www.un.org/esa/socdev/unpfii/documents/WCIP-Pacific-Statement-Outcome-Document.pdf.

[146] Willemijn de Jong, "The female face of sustainable development", paper prepared for the library briefing at the European Parliament on 8 April 2013. Available from www.europarl.europa.eu/eplibrary/The-female-face-of-sustainable-development.pdf.

[147] United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women), "The future women want: a vision of sustainable development for all" (2012).

[148] Office of the United Nations High Commissioner for Human Rights, "Human rights at international borders: exploring gaps in policy and practice", background paper prepared for the expert consultation held on 22 and 23 March 2012. Available from www.ohchr.org/Documents/Issues/Migration/Events/HumanRightsatInternationalBorders_backgroundpaper2012.pdf.

[149] Contribution of UNODC. The UNODC Maritime Crime Programme has developed an Indian Ocean Forum on Maritime Crime to share information and strategies, and collaborate in investigating and prosecuting, maritime crimes, including trafficking and smuggling of persons. See also A/69/71/Add.1.

84. Activities to benefit vulnerable people have, for example, focused on youth and women,[150] migrants[149] and the empowerment of fishing communities as a non-conventional measure to address armed robbery against ships.[151]

## C. Enabling framework for enhanced integration of the three dimensions in relation to oceans

85. While the challenges are many, opportunities exist to enhance integration of the three dimensions of sustainable development with a view to achieving "triple wins" (see para. 2 above). Continuing efforts to address the global drivers of change which have negative effects on national and local economies, on social systems and on the marine environment and exacerbate vulnerabilities are critical. At the same time, developing the elements that constitute the basic enabling framework for integration, some of which are outlined below, is essential.

### 1. Legal framework

86. The development and implementation of a supporting legal framework at the national level, in conformity with the United Nations Convention on the Law of the Sea, can play a critical role in achieving successful integration. The Convention is recognized as the legal framework within which all activities in the oceans and seas must be carried out. As noted in paragraph 5 above, the Convention reflects the interrelatedness of the environmental, social and economic aspects of the oceans. The role of the Convention with regard to the integration of those three dimensions is even greater by virtue of the fact that it is a framework instrument. As such, its provisions are complemented by its two implementing agreements (see para. 20 above) as well as by other instruments in various sectors. This normative integration finds explicit recognition in the provisions of the Convention itself.[152] The effective implementation of the Convention and its implementing agreements would, therefore, advance the achievement of sustained and inclusive economic growth, social development and environmental protection and further the goal of integration. This is also recognized in goal 14 in the proposal of the Open Working Group of the General Assembly on Sustainable Development Goals (A/68/970 and Corr.1), which puts emphasis on ensuring "the full implementation of international law, as reflected in the United Nations Convention on the Law of the Sea for States parties thereto, including, where applicable, existing regional and international regimes for the conservation and sustainable use of oceans and their resources by their parties". The General Assembly has also consistently emphasized that capacity-building is essential to ensure that States, especially developing countries, in particular the least developed countries and small island developing States, as well as coastal African States, are able to fully implement the Convention, benefit from the sustainable development of the oceans and seas and participate fully in global and regional forums on ocean affairs and the law of the sea[153] (see also para. 75 above).

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[150] Contribution of the Secretariat of the Pacific Community.

[151] Senia Febrica, "Empowerment of coastal communities as a non-conventional measure to address armed robbery against ships, Indonesia", alumni contribution. Available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[152] See, for example, articles 197 and 282.

[153] See, for example, General Assembly resolution 69/245.

87. In that regard, it is important to bear in mind that the Convention also indirectly contributes to the three dimensions and their integration by providing the tools that promote, inter alia, the legal certainty stemming from precise jurisdictional entitlements, the peaceful settlement of disputes, the suppression of criminal activities at sea and the transfer of technology (see paras. 106-110 below).

88. For example, clearly defined and publicized limits of maritime zones under national jurisdiction are an essential basis for peace and security and the sustainable management of activities and resources, as they provide certainty with regard to the extent of the sovereignty or sovereign rights and jurisdiction of coastal States. Such certainty has an impact on the effectiveness of an integrated approach to oceans. However, a significant number of maritime boundaries have not been settled, thereby preventing some States from fully and effectively deriving benefits from the oceans. In response, in some cases, States have negotiated temporary provisional arrangements for joint exploration/exploitation of resources pending more permanent solutions.[154]

### 2. Integration at the policy, planning and management levels

89. The General Assembly has consistently acknowledged that the problems of ocean space are closely interrelated and need to be considered as a whole through an integrated, interdisciplinary and intersectoral approach, and reaffirmed the need to improve cooperation and coordination at the national, regional and global levels, in accordance with the Convention, to support and supplement the efforts of each State in promoting the implementation and observance of the Convention and the integrated management and sustainable development of the oceans and seas.[153]

90. Cross-sectoral cooperation and coordination among different Government ministries and agencies in relation to ocean issues can foster more integrated consideration and decision-making, reflecting a broad range of interests and viewpoints.

91. Efforts to integrate the three dimensions of sustainable development have been demonstrated in the adoption and implementation of integrated national ocean policies in several countries, including those aimed at developing sustainable ocean-based economies or "blue growth".[155] In some countries, integration has included establishing an inter-agency coordination body overseeing the implementation of an

[154] *Handbook on the Delimitation of Maritime Boundaries* (United Nations publication, Sales No. E.01.V.2).

[155] See www.ioc-unesco.org/index.php?option=com_content&view=article&id=362&Itemid=100036. See also case study by Laely Nurhidayah, "Conservation and sustainable use of marine biodiversity", alumni contribution, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

ocean policy.[156] At the regional level, the European Union and the African Union (see para. 75 above), among others, have adopted integrated maritime policies.[157]

92. Institutional mechanisms are needed to harness socioeconomic and environmental knowledge for decision-making and to ensure the administration, implementation and monitoring of integrated policies. Fragmentation and lack of cooperation and coordination represent one of the main challenges to institutional effectiveness at all levels.[158] Cross-sectoral cooperation and coordination and sustainable development of oceans and seas are therefore intertwined. Opportunities remain in terms of capacity development and institutional strengthening to ensure cooperation and collaboration between different government institutions in implementation of national strategies and plans,[159] including the development and implementation of national ocean policies and mechanisms for integrated coastal management.

93. *Participatory approaches*. Participatory approaches play a key role in the integration of the three dimensions of sustainable development in oceans law and policy by ensuring that a broad range of interests are represented and economic, environmental and social considerations are taken into account at all levels of decision-making and governance. Sustainable development must, therefore, be inclusive and people-centred, benefiting and involving all relevant stakeholders.[160]

94. Effective participation by the broadest possible range of States in decision-making that affects them is very important. In this regard, international legal instruments, such as the United Nations Convention on the Law of the Sea and the Fish Stocks Agreement, recognize the need for participation by all States, including developing States, in the management of oceans and their resources and highlight the importance of capacity-building and transfer of technology to support such participation.

95. Poor stakeholder participation is one of the critical factors exacerbating ineffective fisheries governance and management, which is at the heart of decline in fisheries resources.[161] A number of international instruments call for participatory approaches, including the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication, which propose

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[156] See, for example, the United Kingdom of Great Britain and the Northern Ireland Marine and Coastal Access Act 2009 (establishing the Marine Management Organisation); the Basic Act on Ocean Policy of Japan (establishing the Headquarters for Ocean Policy); and the United States of America Executive Order of 19 July 2010 on Stewardship of the Ocean, Our Coasts and the Great Lakes (establishing the National Ocean Council).

[157] See the integrated maritime policy of the European Union, including directive 2008/56/EC of the European Parliament and the Council of the European Union establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive); and the 2050 Africa's Integrated Maritime Strategy and Plan of Action adopted by the African Union. See also case study by Nicole Parris, "The Caribbean Sea Commission (CSC): working toward the sustainable development of the Caribbean Sea", alumni contribution, available from http://www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[158] See OECD, *Sustainable Development: Critical Issues* (Paris, 2001).

[159] Department of Economic and Social Affairs of the Secretariat and UNDP, "Synthesis of national reports for Rio+20" (2012).

[160] General Assembly resolution 66/288, annex.

[161] Contribution of FAO.

guidance for the enhancement of sustainable small-scale fisheries governance and development.[162]

96. Moreover, participatory approaches are already incorporated in various forums and processes for the development of ocean law and policy at the global, regional and national levels. At the global level, civil society, including non-governmental organizations, industry groups and media, play an important role through their participation in ocean- and sustainable development-related meetings, such as the Informal Consultative Process and the high-level political forum on sustainable development. The International Labour Organization's tripartite structure and approach presents a unique example, bringing together Governments, employers and workers to set labour standards, develop policies and devise programmes.[163] The Conference of the Parties of the Convention on Biological Diversity encouraged the use of the traditional, scientific, technical and technological knowledge of indigenous and local communities at the national level, with their full and effective participation, and requested the Executive Secretary to facilitate participation of such groups, including fisheries communities, in regional or subregional workshops on ecologically or biologically significant marine areas.[164]

97. At the national level, the participation of various stakeholders in decision-making processes has been key to considering different interests and perspectives.[165] At the local level, participation of coastal communities and small-scale and artisanal fishers in decision-making about resource management and land and maritime area usage may help achieve a balance of economic, social and environmental considerations.

98. Another key aspect of participatory approaches is the sharing of benefits derived from the oceans and their resources. The importance of benefit-sharing in the maritime context has been recognized through, for example, the principle of the common heritage of mankind, the recognition of the special requirements of developing States,[166] the provisions of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity and the recognition of participatory rights in regional fisheries management organizations and

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[162] Ibid. See also Yetunde E. Agbeja, "Sustaining livelihood through community managed fishing license banks: the case of First Nations of British Columbia"; Amnaj Siripetch and Sampan Panjarat, "Improved access to fisheries resources by small-scale fishers in the Andaman Sea by construction of artificial reefs"; and L. Ylenia Randrianarisoa, "Towards participatory approach for local and traditional system legalization applied on fisheries resources management: the social convention drafting and implementation for sustainable development (the South-West of Madagascar case)", alumni contributions, available fromwww.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[163] Contribution of ILO.

[164] Contribution of the secretariat of the Convention on Biological Diversity.

[165] See, for example, Belgium, Royal Decree of 20 March 2014 (www.health.belgium.be/filestore/19094275/Summary%20Marine%20Spatial%20Plan.pdf); and the integrated management plans adopted by Norway for the Lofoten-Barents Sea, Norwegian Sea, and the North Sea and Skagerrak area (www.fisheries.no/resource_management/Area_management/Integrated_management_plans/#.VPTTQS6eom8).

[166] 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 (the Fish Stocks Agreement), art. 24.

arrangements.[167] In the outcome document of the United Nations Conference on Sustainable Development, entitled "The future we want", States committed themselves "to observe the need to ensure access to fisheries and the importance of access to markets, by subsistence, small-scale and artisanal fisherfolk and women fish workers, as well as indigenous peoples and their communities, particularly in developing countries, especially small island developing States".[168]

99. *Management tools*. Progress continues to be made in the development and application of various integrated tools to manage the impacts of human activities on marine ecosystems. Integrated approaches to the management of human activities in the oceans and seas include ecosystem approaches, integrated coastal zone management and marine spatial planning. A previous meeting of the Informal Consultative Process focused on ecosystem approaches (see A/61/156), which have been applied in single sectors (e.g., fisheries management)[169] as well as in a cross-sectoral manner.[170] Integrated coastal zone management is a continuous and dynamic process, which, among others, aims to achieve intersectoral, intergovernmental and spatial integration as well as the integration of science and management.[171]

100. Marine spatial planning aims at enabling informed planning of the uses of ocean space and resources through the application of a number of management tools such as ecosystem assessments, strategic environmental assessment, area-based management tools, such as marine protected areas,[171] and ecosystem service valuation in trade-off analysis. It promotes broad and transparent stakeholder engagement.[172] While still in the early stages of implementation, marine spatial planning offers opportunities for coordination between sea and land planning, resolution of user conflicts, increased focus on performance monitoring and evaluation and stakeholders' participation. Based on experience at the national level, marine spatial planning is increasingly being promoted as a useful integrated approach at the regional and global levels.[172]

101. Environmental impact assessments and strategic environmental assessments that assess cumulative impacts can also support the implementation of integrated approaches.[173] As yet, models of how to assess cumulative impacts and their interactions with the ecosystem are in their infancy and vary from country to country and region to region. This remains a major challenge to an integrated approach to

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[167] Ibid., art. 11.

[168] General Assembly resolution 66/288, annex, para. 175.

[169] See, for example, www.fao.org/fishery/topic/16034/en and www.fao.org/fishery/topic/16035/en (FAO ecosystem approach to fisheries and aquaculture); UNEP document UNEP/CBD/COP/11/35, annex I, decision XI/18; and the contributions of FAO and the secretariat of the Convention on Biological Diversity.

[170] See, for example, European Union, Marine Strategy Framework Directive (footnote 157 above); Commission for the Protection of the Marine Environment of the North-East Atlantic, North-East Atlantic Environment Strategy (http://www.ospar.org/html_documents/ospar/html/10-03e_nea_environment_strategy.pdf); the Baltic Sea Action Plan of the Helsinki Commission (http://helcom.fi/baltic-sea-action-plan); the UNDP Sustainable Ocean Management Programme; and the projects and programmes of the secretariat of the Pacific Regional Environment Programme concerning, among others, ecosystem-based management and adaptation of ocean and island natural resources.

[171] See A/57/57 and A/57/80.

[172] Contributions of UNEP, IOC, the secretariat of the Convention on Biological Diversity, the European Union and the Helsinki Commission.

[173] See, for example, A/66/119, A/67/95, A/69/82 and A/69/177.

managing human activities in the marine environment.[174] In this regard, ongoing marine science initiatives (see paras. 104 and 105 below), particularly the first global integrated assessment of the state of the marine environment, including socioeconomic aspects (see para. 105 below), would contribute to the enhancement of the understanding of cumulative impacts and their interactions with the ecosystem.

### 3. Marine science

102. Understanding the economic and social benefits and costs of human activity in the marine environment is essential, as is an understanding of the linkage between human activities and pressures and the associated impacts on the ecosystem in interaction with natural environmental change.[174] In that regard, sound data, information and knowledge are critical for informed decision-making and for monitoring progress in meeting internationally agreed commitments (see para. 131 below).

103. The data obtained from marine scientific research and its supporting technologies can improve knowledge of various drivers of change. Marine science can, therefore, make a major contribution to eliminating poverty, ensuring food security, supporting sustainable management of activities at sea, protecting the marine environment and predicting, mitigating and responding to the impacts of natural events and disasters. In order to do so effectively, marine science needs to be mainstreamed into decision-making and be interdisciplinary and intersectoral, including through an increased appreciation of the ocean/atmosphere interface and the connection between land and ocean.[175]

104. Numerous organizations, agencies and collaborative endeavours collect information and data for their particular sectoral use.[176] However, the effective application of marine scientific knowledge and technology in an integrated manner requires the development of the appropriate national and regional approaches and mechanisms to overcome current challenges relating to, inter alia, lack of cohesion among particular scientific disciplines, and to produce aggregated, integrated and coherent datasets supporting statistics and indicators for oceans and seas (see paras. 129 and 130 below).[177] Such efforts could contribute to increasing integration of information on the variables that affect ocean health, human well-being and economic growth, and consequently ensure that decisions drawing on marine science take, where applicable, full account of environmental and socioeconomic factors, including traditional knowledge.[178]

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[174] Contribution of the Commission for the Protection of the Marine Environment of the North-East Atlantic.

[175] A/56/121. See also General Assembly resolution 69/245.

[176] See for example, the International Oceanographic Data and Information Exchange (http://www.iode.org/), which facilitates the exchange of oceanographic data and information, in particular through its Ocean Data and Information Networks and Ocean Biogeographic Information System; FAO statistical information on fisheries; and IMO statistical information on shipping.

[177] Additional challenges are set out in A/69/71/Add.1.

[178] An example of the multidimensional aspect of marine science to that end is found in the Global Ocean Observing System (www.ioc-goos.org/), which is considered necessary for rapid detection of changes in the ecosystems, accurate and timely predictions of natural hazards, safe and efficient maritime operations and more effective human use of the marine environment. See contribution of IOC.

105. Strengthening the science-policy interface is also essential. In that regard, the first global integrated marine assessment under the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, which is underpinned by marine science, provides an important example of the integration of the three dimensions of sustainable development. It aims to respond to the need for a new form of integrated assessment that is global in scope and comprehensive in the issues it covers, and that centres on the socioeconomic causes and consequences of the degradation of the marine environment. The assessment can provide a scientific basis and rationale for policy, integrated management planning and the sustainable development of coastal and marine areas.

### 4. Infrastructure, including technology and technology transfer

106. Adequate infrastructure and technology are also critical in supporting sustainable development. For example, secure port facilities contribute to socioeconomic development by facilitating maritime transport and commerce. In addition, control measures within ports provide an effective tool for the enforcement of environmental, security, social and economic laws and regulations, thus supporting the sustainability of activities. Monitoring, control and surveillance to combat illegal activities, which undermine the benefits that a coastal State may gain from sustainable activities under its jurisdiction, also enhance the sustainability of related activities.[179]

107. Technological innovation and change, which also underpins infrastructure development, is pervasive in the world today, including in the ocean environment. New technologies, such as those associated with marine renewable energy (see paras. 50-52 above), are unlocking possibilities for sustainable development.[180] Technological advancement can improve existing technologies, making them more environmentally sound, more economic and able to achieve outcomes for people more efficiently and effectively. For example, with regard to marine data acquisition, one of the key drivers of the use of autonomous technology has been the increased cost of ship-borne research coupled with the growing demand for continuous, high-resolution, long-term ocean observations for both research and societal needs.[181]

108. Improvements to technologies are often cited as being directly sought-after within various areas such as shipping,[182] marine renewable energies[183] and submarine cables to assist those areas in being better able to integrate the three dimensions of sustainable development.

109. Technological advancements are, however, unevenly spread within and between countries, with many developing countries locked out and the poor in other countries also being priced out.[184] This is of particular concern for developing countries, where protection of the marine environment is dependent upon the

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[179] Contribution of FAO.

[180] See A/69/700.

[181] *Marine Scientific Research: A Revised Guide to the Implementation of the Relevant Provisions of the United Nations Convention on the Law of the Sea* (United Nations publication, Sales No. E.10.V.12).

[182] See A/65/69/Add.2 and A/63/63 and Add.1.

[183] See A/67/79.

[184] See A/69/700.

technological and financial capacities of individual countries and technology transfer and financial resources are required.[185]

110. The Convention, inter alia, requires States to establish programmes of technical cooperation for the effective transfer of marine technology. To this end, guidelines have been developed for the transfer of marine technology.[186] Capacity-building activities to promote such transfer are being carried out.[187]

### 5. Capacity-building and resource mobilization

111. The effective implementation of States' obligations under the United Nations Convention on the Law of the Sea and related agreements, as well as other commitments related to oceans, provides significant opportunities for sustainable development in all of its social, environmental and economic dimensions. It will also significantly contribute to, inter alia, poverty eradication, sustained economic growth and food security.[188] The capacity to fully participate in the elaboration and implementation of the legal regime for the oceans and seas also fosters peace and security, a necessary precondition to sustainable development. However, human, institutional and systemic capacities, as well as financing, continue to be the primary limiting factors for States in this regard, particularly with respect to least developed countries and small island developing States.

112. A previous report (A/65/69) presented an overview of the capacity-building needs of States and reviewed capacity-building activities and initiatives. It also addressed the challenges in implementing capacity-building activities and initiatives, and identified opportunities for ways to move forward. The contents of this report remain relevant today, and the magnitude of the need for capacity-building interventions is becoming increasingly clear as States continue to call for strengthened cooperation for capacity-building at all levels and across all sectors. The need for integrated approaches is clearly present in capacity requirements as States increasingly seek to harness ocean-based economies in a sustainable manner. These capacity-building requirements are particularly high for small island developing States.

113. More recently, the key importance of capacity-building was reiterated in the post-2015 development process, including through the work of the Open Working Group of the General Assembly on Sustainable Development Goals and in the Samoa Pathway. Despite this recognition, significant lacunae remain in terms of integrated approaches to the building of capacity and even larger ones with respect to sustained funding for capacity-development in oceans.

114. In order to be effective, human, institutional and systemic capacity must be reinforced so that States, civil society and the private sector are able to address the closely interrelated problems of oceans as a whole (see A/65/69). Therefore, in

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[185] See Agenda 21 (footnote 4 above).

[186] Criteria and Guidelines on the Transfer of Marine Technology adopted by the Assembly of the Intergovernmental Oceanographic Commission of UNESCO at its twenty-second session, in 2003.

[187] See contributions of IOC, the International Seabed Authority and FAO; see also IMO document MEPC 65/22, annex 4, resolution MEPC.229(65), on the promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships; and activities of IHO (iho.int/mtg_docs/CB/IHO_CB_Strategy_EN.pdf).

[188] General Assembly resolution 69/245; see also resolution 66/288, annex.

addition to the necessary sectoral capacity-building programmes,[189] capacity-building initiatives across sectors, disciplines and geographic scales must be fostered. For example, integrated human capacity-building interventions are essential in support of sustainable development. With a view to providing integrated human resource development, the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the Secretariat manages two fellowships: the United Nations-Nippon Foundation of Japan Fellowship Programme and the Hamilton Shirley Amerasinghe Memorial Fellowship on the Law of the Sea. The case studies kindly provided by some alumni for the benefit of this report, and referred to herein, demonstrate how individual capacity-building is an essential element in enhancing the sustainable development of oceans and their resources at national/regional levels.[190]

115. The science-policy interface must also be woven into initiatives so as to not only enable an understanding of the possibilities afforded by oceans, but also to ensure informed decisions and the proper monitoring of the resultant actions (see paras. 129-132). Capacity-building must also be accompanied by significant resource mobilization and sustained funding. In this regard, it is important to note that the United Nations Convention on the Law of the Sea lacks a funding mechanism, and the Secretariat's support to States in the implementation of the Convention and related agreements is largely dependent on voluntary trust funds with narrow mandates and modest capacity-building projects addressing specific issues. The recent focus by many States on harnessing their sustainable ocean economies could provide an opportunity to unlock potential for public-private partnerships (see paras. 125-127 below), including for funding of the necessary capacity-building initiatives. Furthermore, potential synergies across disciplines and sectors may provide opportunities for economies of scale and drive the necessary integration of all three aspects of sustainable development.[191]

116. Harnessing the oceans to pursue sustainable development in an integrated manner across its three dimensions must be accompanied by the operationalization of the reality that "capacity is development".[192]

### 6. Cooperation and coordination

117. The General Assembly has consistently recognized the need to improve cooperation and coordination at the national, regional and global levels, in accordance with the Convention, to support and supplement, inter alia, the efforts of each State in promoting the sustainable development of the oceans and seas (see, for example, resolutions 69/245 and 66/288, annex).

118. International cooperation and coordination, in its many different forms, can contribute to the integration of the three dimensions of sustainable development in

[189] See contributions of the secretariat of the Convention on Biological Diversity, FAO, ECA, WMO, IHO, UNESCO, UNCTAD and UNODC.

[190] The full text of the case studies submitted is available at www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[191] For example, climate change financing could be directed at capacity-building initiatives within the various ocean sectors that also support climate change adaptation and mitigation objectives (see para. 70 above).

[192] UNDP, "Capacity is development", report of a global event on the theme "Smart strategies and capable institutions for 2015 and beyond", held in Marrakech, Morocco, from 17 to 19 March 2010 (2010).

ocean affairs and the law of the sea, as well as sharing of experiences, best practices, resources and knowledge.

119. At the global level, since the entry into force of the United Nations Convention on the Law of the Sea, the General Assembly has undertaken an annual review of developments relating to ocean affairs and the law of the sea, as the global institution having the competence to undertake such a review. In particular, the Informal Consultative Process was established by the General Assembly in its resolution 54/33 to facilitate its annual review of developments in ocean affairs and the law of the sea, with an emphasis on identifying areas where coordination and cooperation at the intergovernmental and inter-agency levels should be enhanced. The Assembly has recognized the role of the Informal Consultative Process as a unique forum for comprehensive discussions on issues related to oceans and the law of the sea, consistent with the framework provided by the Convention and chapter 17 of Agenda 21,[4] and that the perspective of the three pillars of sustainable development should be further enhanced in the examination of the selected topics (see resolution 69/245).

120. From Agenda 21 to "The future we want", Member States have continuously highlighted the crucial need for greater coherence and coordination among the various initiatives and funding mechanisms related to sustainable development. As regards inter-agency cooperation, UN-Oceans was established as the inter-agency mechanism that seeks to enhance the coordination, coherence and effectiveness of activities related to oceans and coastal areas of competent organizations of the United Nations system. It comprises 22 members, including the International Seabed Authority. It operates under the overall supervision of the General Assembly and in accordance with the Convention, the respective competences of each of its participating organizations and the mandates and priorities approved by their respective governing bodies. Currently, UN-Oceans is developing an inventory of mandates and specific activities of its members, which will be available on the UN-Oceans website, with a view to identifying possible areas for collaboration and synergy.

121. Modalities of cooperation and coordination among States have evolved to address emerging challenges. Member States have recognized that new aid providers and novel partnership approaches have contributed to increasing the flow of resources, and that the interplay of development assistance with private investment, trade and new development actors provides opportunities for aid to leverage private resources.[193]

122. In terms of the source of the assistance, whether financial or technical, Member States have recognized that North-South cooperation remains the core type of international cooperation and that South-South cooperation is not a substitute for it, but rather a complement.[194] In this regard, the donor community, including through international financial institutions, remains a key player in providing assistance for sustainable development by ensuring steady and predictable access to adequate financing.

[193] See General Assembly resolution 66/288, annex.

[194] Ibid; see also General Assembly resolution 69/15, annex.

123. An example of inter-State cooperation, with the financial and technical assistance of the donor community, is the UNDP-Global Environment Facility Sustainable Ocean Management Programme.[195]

124. South-South and triangular cooperation, which provide effective approaches for mobilizing human and financial resources, expertise, technology and knowledge, remain important.[196]

125. In the context of the post-2015 development agenda, the Secretary-General has also noted that inclusive partnerships must be a key feature of implementation at all levels.[197]

126. The special needs of small island developing States and the increasingly important role of the private sector in achieving sustainable development have been recognized in the Samoa Pathway. In order to address that challenge, Pacific small island developing States are working towards a multi-stakeholder partnership entitled the Pacific Ocean Alliance. Among its goals, the Alliance aims to foster informed and balanced decision-making at all levels, which takes account of the economic, social, environmental and cultural benefits of the Pacific Ocean and islands, their coasts and coastal areas and associated resources.[198]

127. Partnerships of all types provide a mechanism for engagement of different actors and stakeholder in achieving sustainable development. Public-private sector partnerships represent important opportunities for the integration of the three dimensions of sustainable development.[199]

128. Many existing initiatives have not necessarily included an integrated approach since the beginning of their work, but rather developed it through adjusting mandates or methods. For example, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities includes multi-stakeholder partnerships in nutrients, wastewater management and marine litter which consider the economic and social issues in addition to the environmental aspects.[200] Similarly, ongoing work on chemicals and waste management has included cross-sectoral cooperation and outreach activities targeting stakeholders outside of chemicals and waste on various interlinkages between chemicals and wastes and thematic areas.[201]

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[195] Contribution of UNDP.

[196] For example, the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security is a multilateral partnership of six countries, which integrates the three dimensions of sustainable development.

[197] See A/69/700.

[198] See www.forumsec.org/resources/uploads/embeds/file/poa-flyer-web.pdf.

[199] See Private Sector Partnerships Forum, convened on 30 and 31 August 2014 in the context of the third International Conference on Small Island Developing States in Apia from 1 to 4 September 2014 (http://unohrlls.org/custom-content/uploads/2014/08/Co-Chairs-Summary_Private-Sector-Partnerships-Forum.pdf); see also Senia Febrica, “Public-private partnership for the safety of navigation and pollution prevention in the Straits of Malacca and Singapore”, alumni contribution, available from www.un.org/depts/los/nippon/unnff_programme_home/unnff_program_sg_report.htm.

[200] Contribution of UNEP.

[201] Contribution of the secretariat of the Basel, Rotterdam and Stockholm Conventions.

## 7. Systems for measuring progress in the integration of environmental, economic and social dimensions

129. Several summits and conferences on sustainable development have recognized the importance of indicators in assisting informed decision-making and spearheaded the development of suitable indicators.[202]

130. In the context of the post-2015 development agenda, the Statistical Commission has started the process of developing a draft set of indicative global indicators to accompany the sustainable development goals and targets, with the view of adopting the indicator framework in March 2016.[203] While taking different approaches, various civil society groups have set out to develop global monitoring indicators for sustainable development goals.[204] It is generally observed that indicators should be limited in number, simple, intuitive, and policy-relevant, as well as relevant to all countries and people; lend themselves to fine levels of disaggregation; be complemented by national indicators; track cross-cutting issues; and support integrated, systems-based approaches to implementation.

131. Various mechanisms exist in the context of ocean affairs for data gathering and monitoring. Some mechanisms aim at monitoring progress in implementing internationally agreed commitments. However, to date, such efforts remain sector-based. For example, IMO developed its voluntary Member State Audit Scheme, which will become mandatory from 1 January 2016. The Scheme aims to determine the extent to which IMO member States give full and complete effect to their obligations and responsibilities contained in a number of IMO treaty instruments.[205] The FAO Voluntary Guidelines for Flag State Performance address issues such as performance assessment criteria and a procedure for carrying out an assessment. They are expected to provide a valuable tool for strengthening compliance by flag States with their international duties and obligations regarding the flagging and

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[202] See, for example, Agenda 21(footnote 4 above); *Indicators of Sustainable Development: Guidelines and Methodologies*, 3rd ed. (United Nations publication, Sales No. E.08.II.A.2); A/56/326 and resolution 56/95; and United Nations System Task Team on the Post-2015 United Nations Development Agenda, "Statistics and indicators for the post-2015 development agenda" (July 2013), available from www.un.org/en/development/desa/policy/untaskteam_undf/UNTT_MonitoringReport_WEB.pdf.

[203] Technical report by the Bureau of the Statistical Commission on the process of the development of an indicator framework for the goals and targets of the post-2015 development agenda, working (https://sustainabledevelopment.un.org/content/documents/6754Technical%20report%20of%20the%20UNSC%20Bureau%20 (final).pdf.

[204] See, for example, "Indicators and a monitoring framework for the sustainable development goals: launching a data revolution for the SDGs", report by the Leadership Council of the Sustainable Development Solutions Network, revised working draft (version 6) (18 February 2015), available from http://unsdsn.org/wp-content/uploads/2015/01/150218-SDSN-Indicator-Report-FEB-FINAL.pdf; Global Ocean Commission, "Proposed elements of indicators for SDG goal 14 — oceans, seas and marine resources" (February 2015), available from www.globaloceancommission.org/wp-content/uploads/GOC_Post2015_Ocean-indicators_final.pdf; International Council for Science and International Social Science Council, *Review of Targets for the Sustainable Development Goals: The Science Perspective* (Paris, International Council for Science, 2015), available from www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf

[205] See www.imo.org/OurWork/MSAS/Pages/default.aspx.

control of fishing vessels.[206] In addition, several regional fisheries management organizations have undergone performance reviews.

132. Some mechanisms aim at monitoring the state of the marine environment in a cross-sectoral manner. In addition to the first global integrated marine assessment (see para. 105 above), other mechanisms include the UNEP Global Environment Outlook process, reporting on national plans of action to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, the Global Coral Reef Monitoring Network, the Global Ocean Observing System, the Ocean Biogeographic Information System, the Global Ocean Acidification Observing Network, the Transboundary Waters Assessment Programme, *Global Biodiversity Outlook* and the Biodiversity Indicators Partnership. At the regional level, regional seas conventions and action plans have produced assessments of the state of the marine environment.[207]

# IV. Conclusions

133. The role of oceans and ocean activities in achieving sustainable development is well-established, as outlined throughout this report. Not only do oceans contribute directly to the environmental, social and economic dimensions of sustainable development, they also contribute to other areas recognized as important for sustainable development. In particular, they can make a positive contribution to poverty alleviation, food security and nutrition, health, gender equality and empowerment of women, energy availability and sustainability, combatting climate change and its impacts, infrastructure development and innovation. As a result, they can also contribute to sustainable consumption and production patterns, sustained economic growth and employment, reducing inequalities within and among countries and promoting peaceful and inclusive societies. In that regard, as emphasized by the High-level Panel of Eminent Persons on the Post-2015 Development Agenda (see A/67/890), it is important that oceans and seas not be forgotten in the post-2015 development agenda.

134. Investing in the health, resilience and productivity of our oceans and the sustainability of the activities taking place in, or impacting, the oceans is essential, as this can have a multiplier effect through direct and indirect contribution to other priorities for sustainable development. As highlighted in the synthesis report of the Secretary-General on the post-2015 sustainable development agenda (A/69/700), a transformational approach and mobilizing the necessary means of implementation are essential to achieving balanced integration that promotes sustained and inclusive economic growth, social development and environmental protection and thereby benefits all. Besides the necessary financing, developing an appropriate enabling framework is critical for enhanced integration of the three dimensions of sustainable development. This includes developing a supporting policy framework; implementing the legal measures that facilitate integrated approaches; establishing the supporting institutional mechanisms for cross-sectoral cooperation and coordination; promoting technology development and transfer, as well as science to

[206] FAO document COFI/2014/4.2/Rev.1, appendix II.

[207] Contributions of the Commission for the Protection of the Marine Environment of the North-East Atlantic and the secretariat of the Helsinki Commission; see also contribution of the European Union.

support sound-decision making; developing suitable indicators to measure progress in integration; and investing in capacity-building, including with a view to adapting to vulnerabilities to various global risks.

135. It is important to highlight the contribution that effective implementation of the United Nations Convention on the Law of the Sea, which provides the basis for addressing the closely interrelated problems of ocean space as a whole, can make to integration of the three dimensions of sustainable development. The Convention sets out a legal order for the seas and oceans that facilitates international communication and promotes the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources and the study, protection and preservation of the marine environment. In doing so, it aims, inter alia, to promote the economic and social advancement of all peoples of the world. It also takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or landlocked. In that regard, stepping up efforts to develop the capacity to effectively implement the Convention, its implementing agreements and other relevant instruments will be an essential building block of successful integration.

136. Owing to the paucity of available information, assessing the status of integration of the three dimensions of sustainable development in relation to oceans and seas is challenging. While examples of good practices exist, they are often sparse and thus do not allow for a comprehensive assessment. Nonetheless, as indicated in the present report, there are a number of persistent challenges facing our oceans and the people whose livelihood depends on them, which highlight the importance of enhancing efforts to achieve effective and balanced integration of the environmental, economic and social dimensions.

137. There are different approaches, visions, models and tools that can be adopted in pursuit of integration. It is clear, however, that sustainable development is a shared responsibility. The enabling measures, of which the aforementioned are only examples, need to be further developed by each State on the basis of its national priorities and circumstances. In addition, improved integration of the three dimensions in relation to oceans and seas should be a constant and determining factor in regional and global decision-making as well as in cooperation and coordination efforts.