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Oceans and the law of the sea

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Report of the Secretary-General**

Addendum

Summary

The present report, which covers the period from 1 September 2013 to 31 August 2014, is submitted pursuant to paragraph 284 of General Assembly resolution [68/70](#), in which the Assembly requested the Secretary-General to prepare a report on developments and issues relating to ocean affairs and the law of the sea, including the implementation of resolution [68/70](#), for consideration at its sixty-ninth session. It is also being submitted to States parties to the United Nations Convention on the Law of the Sea, pursuant to article 319 of the Convention. The report should be read in conjunction with (a) the report of the Secretary-General on oceans and the law of the sea ([A/69/71](#)), which addressed the topic of focus of the fifteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea; (b) the report on the work of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects ([A/69/77](#)); (c) the report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its fifteenth meeting ([A/69/90](#)); and (d) the letters dated 5 May and 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable

* [A/69/150](#).

** Owing to the page limit, the present report contains a summary of the most important recent trends and developments and selected information from contributions by relevant agencies, programmes and bodies.



use of marine biological diversity beyond areas of national jurisdiction to the President of the General Assembly ([A/69/82](#) and [A/69/177](#)); as well as other relevant documents such as the report of the twenty-fourth Meeting of States Parties to the United Nations Convention on the Law of the Sea ([SPLOS/277](#)) and the statements by the Chair of the Commission on the Limits of the Continental Shelf on progress of work in the Commission ([CLCS/81](#) and 83).

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I. Introduction

1. On 16 November 2014, the international community will commemorate the twentieth anniversary of the entry into force of the United Nations Convention on the Law of the Sea. For the past 20 years, the Convention, which was complemented in 1994 by 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) and in 1995 by 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 United Nations Fish Stocks Agreement), has seen steady progress towards the goal of universality. It provides the legal framework within which all activities in the oceans and seas must be carried out and has remained critical for the maintenance and the strengthening of peace, security, cooperation and friendly relations among States, as well as for the achievement of sustainable development. The need for full implementation of the Convention has been recognized, most recently at, and in the context of the follow-up to, the 2012 United Nations Conference on Sustainable Development.

2. The past year has seen increased attention by Governments, intergovernmental organizations and civil society to oceans and seas. In particular, there is growing awareness of the contribution that increased reliance on oceans and their resources can make to the realization of development goals, as the oceans are of vital importance to the global economy and people, including through transportation, food security and livelihood. At the same time, there is growing concern that the health and productivity of marine ecosystems is under pressure from unsustainable activities and the effects of increasing CO₂ emissions.

3. Held on the theme “Together let’s ensure oceans can sustain us into the future”,¹ World Oceans Day 2014 provided an opportunity to reflect on the common responsibility of all stakeholders to ensure that the vital role of the oceans in sustainable development is safeguarded for present and future generations.

4. The present report provides an overview of the main trends and developments in ocean affairs and the law of the sea.

5. The Secretary-General is grateful to the United Nations specialized agencies, programmes and bodies, as well as other intergovernmental organizations, which contributed information to the present report.²

¹ See www.un.org/depts/los/wod/index.html.

² The full text of their contributions is available on the website of the Division for Ocean Affairs and the Law of the Sea at http://www.un.org/depts/los/general_assembly/general_assembly_reports.htm.

II. United Nations Convention on the Law of the Sea and its implementing agreements and bodies established thereunder

A. Status of the Convention and its implementing agreements

6. During the reporting period (1 September 2013-31 August 2014, the number of parties to the Convention stood at 166, those to the Part XI Agreement stood at 145, and those to the United Nations Fish Stocks Agreement rose from 80 to 81.³

7. In spite of the repeated calls of the General Assembly for States to ensure that any declarations or statements that they have made or make when signing, ratifying or acceding to the Convention do not purport to exclude or modify the legal effect of the provisions of the Convention and to withdraw any such declarations or statements, no withdrawal of such declarations or statements⁴ has occurred yet.⁵

B. Work of the bodies established under the Convention

8. The bodies established under the Convention have continued to facilitate its implementation. Besides the work of the International Tribunal for the Law of the Sea referred to below, the States Parties to the Convention held their twenty-fourth meeting in June 2014.⁶ The Assembly of the International Seabed Authority held its twentieth session in July 2014 (see paras. 54, 55, 74 and 92 below).⁷

9. The Commission on the Limits of the Continental Shelf held its thirty-third and thirty-fourth sessions in 2013 and 2014,⁸ during which it adopted two sets of recommendations, bringing the total number of recommendations to 20. However, so far, there have only been four instances where a deposit of information and data permanently describing the outer limits of the continental shelf on the basis of the recommendations of the Commission has been made by the submitting States pursuant to article 76, paragraph 9, of the Convention.⁹

10. The workload of the Commission has continued to increase. As at 31 July 2014, eight new submissions had been made, bringing the total number of submissions to 74, including revised submissions. It is expected that the total number of submissions will continue to grow in the coming years.

11. Consequently, the backlog of the Commission¹⁰ has continued to increase. The time period between the receipt of a submission and the establishment of a subcommission to consider it has reached almost five years, and will only further

³ The European Union is party to all three treaties. For further status information, see treaties.un.org.

⁴ See [A/59/62](#), sect. A.2.

⁵ See <https://treaties.un.org>.

⁶ [SPLOS/277](#).

⁷ See [ISBA/20/A/11](#).

⁸ See [CLCS/81](#) and [CLCS/83](#).

⁹ Mexico in respect of the western polygon in the Gulf of Mexico (2009), Ireland in the area abutting the Porcupine Abyssal Plain (2009), the Philippines in the Benham Rise Region (2012) and Australia (2012).

¹⁰ As at 31 July 2014, the number of submissions not yet under active consideration by the Commission stood at 45.

increase. This poses practical challenges for submitting States, which have to maintain the data, software and required expertise.

12. The growing workload of the Commission and the increasing demands on its members, as well as the technical support required for the efficient discharge of its functions, continued to be of major concern for the Commission and States Parties, both of which have continued to deliberate on how to address the issue.¹¹ The twenty-fourth Meeting of States Parties adopted a decision regarding the conditions of service of the members of the Commission ([SPLOS/276](#)), in which, inter alia, it reaffirmed the obligation of States under the Convention to defray the expenses of the experts they nominated to the Commission, including the provision of medical coverage. The Meeting also urged the General Assembly to take any necessary measures with a view to providing medical insurance coverage to Commission members from developing States and decided to continue the consideration of other conditions of service of the members of the Commission.¹²

C. Trends in State practice in relation to maritime spaces

13. Clearly defined and duly publicized limits of maritime zones are an essential basis for States to derive benefits from the oceans and their resources. These limits provide certainty with regard to the extent of the sovereignty or sovereign rights and jurisdiction of coastal States, thereby creating a fundamental pre-condition to attracting investments for exploration and exploitation activities.

14. The Convention establishes detailed deposit and due publicity obligations for its parties.¹³ However, many coastal States have yet to deposit charts or lists of geographical coordinates with the Secretary-General. On the other hand, a few coastal States deposited lines of delimitation prior to the delimitation being effected by the means referred to in articles 74 and 83 of the Convention.

15. The Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the Secretariat (the Division) has continued to make the information on State practice available on its website¹⁴ and publish information on the deposit of charts and geographical coordinates and other developments, including in the most recent *Law of the Sea Bulletins* Nos. 83-85. It has also, as mandated by the General Assembly in resolution [59/24](#), continued to contribute, in collaboration with the International Hydrographic Organization (IHO), to the development of the technical standard, IHO Product Specification S-121,¹⁵ for the collection, storage and dissemination of the information deposited, in order to ensure compatibility among the geographic information system, electronic nautical charts and other systems developed by various organizations. Once the standards are approved, the Division will use them for structuring its geographic information system, with a view to deploying the Division's geographic information online¹⁶ and to assisting States

¹¹ See, for example, [SPLOS/157](#), [SPLOS/208](#), [CLCS/76](#) and [CLCS/80](#), as well as [SPLOS/140](#), [SPLOS/144](#), [SPLOS/162](#), [SPLOS/183](#), [SPLOS/195](#), [SPLOS/216](#), [SPLOS/229](#) and [SPLOS/276](#).

¹² The report of the twenty-third Meeting of States Parties is contained in document [SPLOS/263](#).

¹³ Articles 16 (2), 47 (9), 75 (2) and 84 (2) of the Convention. See also articles 21 (3) and 42 (3).

¹⁴ See www.un.org/Depts/los/LEGISLATIONANDTREATIES/index.htm.

¹⁵ See www.iho.int/mtg_docs/com_wg/HSSC/HSSC5/HSSC5-05.1I_S-10x_Maritime_Boundary_Exchange_Product_Specification.pdf.

¹⁶ A briefing on the database and online tool was held on 13 June 2014. See www.un.org/depts/los/meeting_states_parties/documents/201406_doaos_GIS_MSP.pdf.

Parties in preparing their data to fulfil their deposit obligations under the Convention.¹⁷

D. Trends in dispute settlement

16. The Convention promotes the maintenance of international peace and security — a key precondition for the sustainable development of oceans — as it provides for universally agreed limits of maritime zones and for peaceful means of solving situations of overlapping maritime claims. Among such means is the settlement of disputes by courts or tribunals.

17. During the reporting period, the International Court of Justice, the International Tribunal for the Law of the Sea and arbitral tribunals established under annex VII to the Convention had a number of law of the sea cases on their dockets. The Court¹⁸ and the Tribunal¹⁹ rendered judgments in two cases each, and two arbitral tribunals established under annex VII to the Convention rendered their awards.²⁰

III. Ensuring safety and security at sea

18. Preserving and enhancing maritime security and safety at sea, while taking into account the critical role of the human element (see paras. 38-40 below), continues to be of paramount concern to the international community.

A. International shipping

19. Considered the most environmentally sound mode of mass transport, maritime transport is indispensable in a sustainable global economy.²¹ Approximately 80 per cent of the global merchandise trade is being handled by international shipping and ports worldwide. In 2012, global seaborne trade increased by 4.3 per cent, driven by growing demand in China and increased intra-Asian and South-South trade, with the total exceeding 9 billion tons for the first time ever.²² The year 2012 also marked the end of the largest shipbuilding cycle in history, with a decrease in new ship deliveries for the first time since 2001. While world tonnage continued to grow, reaching 1.63 billion deadweight tons in January 2013, new orders for all major vessel types decreased dramatically. The last 10 years also witnessed a decrease in competition in most shipping markets, with ships becoming bigger and the number of companies decreasing.²³

¹⁷ The relevant articles of the Convention are listed in footnote 13 above.

¹⁸ See www.icj-cij.org/docket/index.php?p1=3&p2=2.

¹⁹ See www.itlos.org/index.php?id=35.

²⁰ See www.pca-cpa.org/showpage.asp?pag_id=1029.

²¹ The International Maritime Organization (IMO) has developed the concept of a sustainable maritime transportation system (see www.imo.org/MediaCentre/HotTopics/SMD/Pages/default.aspx).

²² United Nations Conference on Trade and Development (UNCTAD), *Review of Maritime Transport 2013* (United Nations publication, Sales No. E.13.II.D.9).

²³ Ibid.

20. Seaborne trade remains dependent on, and vulnerable to, fluctuations in the status of the world economy and is affected by a range of challenges, in particular the interconnected issues of energy security and costs, climate change (see paras. 105 and 106 below) and environmental sustainability.²⁴

21. In light of these challenges, ensuring the safety of ships and navigation, in particular through participation in and effective implementation and enforcement of relevant international conventions, is important.²⁵ In this regard, the United Nations Convention on the Law of the Sea sets out the rights of navigation and provides for the adoption of rules and standards on the safety of navigation by the “competent international organization” with the global mandate in these matters, namely the International Maritime Organization (IMO). The Convention also sets out the basic obligations relating to the exercise of flag State jurisdiction and provides the framework for the enforcement of rules and standards, including by other States.²⁶

22. IMO has adopted a wide range of international shipping rules and standards in matters concerning maritime safety, including construction, equipment, seaworthiness and manning of ships, signals, communications, prevention of collisions, ship routing and ship reporting. Increasing attention is now being paid to the entry into force of IMO instruments and to the effective and consistent implementation of the rules and standards adopted under its auspices.²⁷

23. To focus efforts on this important issue, the theme for the IMO World Maritime Day in 2014 is “IMO conventions: effective implementation”. In particular, IMO member States have been encouraged to report any barriers to implementation to its Legal Committee for advice and guidance.²⁸ To assist in this regard, IMO has also undertaken a number of technical assistance activities (see para. 128 below).

24. The IMO Voluntary Audit Scheme has been a key tool for assessing the performance of IMO member States in implementing their obligations as flag, port and coastal States under the relevant IMO instruments and offering the necessary assistance, where required, for them to fully and effectively meet their obligations. In 2013, the IMO Assembly adopted key resolutions and amendments relating to the scheme to provide for its mandatory application by 2016. In addition to the IMO Instruments Implementation Code, which provides a global standard to enable States to meet their obligations,²⁹ IMO adopted draft amendments to a number of its instruments to provide the basis for the mandatory audit scheme (see also para. 88 below).³⁰

25. In 2014, IMO also agreed on a long-term action plan on passenger ship safety³¹ in light of the latest information regarding the *Costa Concordia* incident.³²

²⁴ Ibid.

²⁵ General Assembly resolution 68/70.

²⁶ IMO document LEG/MISC.8.

²⁷ For example, the Nairobi International Convention on the Removal of Wrecks, 2007, will enter into force on 14 April 2015.

²⁸ IMO documents LEG 101/8/1 and LEG 101/12.

²⁹ IMO document A 28/Res.1070.

³⁰ IMO contribution.

³¹ IMO documents MSC 93/22 and MSC 93/WP.6.

³² IMO document MSC 93/22. See also A/68/71/Add.1.

26. With regard to hydrographic surveying and nautical charting, there are growing concerns that shipping activities are now being carried out with larger vessels and to a wider variety of destinations, which are not adequately supported by existing surveys and charts, including in polar regions where there is a lack of hydrographic data and information.³³ IHO continued to encourage and assist IHO member States to achieve an adequate global coverage of electronic navigational charts.³⁴

27. As more countries are focusing on opportunities for commercial navigation in Arctic waters,³⁵ the completion of a mandatory international code for ships operating in polar waters, covering the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships, becomes increasingly important.³⁶

B. Maritime security

28. Threats to maritime security take various forms and include crimes at sea such as piracy and armed robbery at sea, illicit traffic in narcotic drugs and psychotropic substances, terrorist acts against shipping and other maritime interests and the smuggling of migrants. Such activities threaten the security and safety of seafarers, international maritime transport and local and global economies. As oceans and seas are extensively used by organized criminal groups, continuous and effective international cooperation at all levels is critical in addressing these challenges.³⁷ The duty for States to cooperate in the prevention and repression of crimes at sea is firmly established in the Convention and a number of other legal instruments.

29. International cooperation to enhance maritime security has continued to intensify, particularly at the regional level. Cooperative initiatives are increasingly taking a more integrated approach to addressing the various threats to maritime security, recognizing the potential for synergies in doing so. States are also taking more steps to criminalize and prosecute the perpetrators of crimes committed at sea. This has contributed to a reduction in the incidence of such crimes in certain regions, as noted below.

30. For example, the 2050 African Integrated Maritime Strategy addresses a range of criminal activities at sea and encourages African Union member States to develop legal frameworks for coordinated State intervention at sea and for the prosecution of perpetrators engaged in these crimes.³⁸ Similarly, the European Union Maritime Security Strategy, adopted on 24 June 2014, provides a framework for coherent development of policies and a common response to maritime threats and risks.³⁹

³³ IHO contribution.

³⁴ Ibid.

³⁵ There were 71 transits through the northern sea route in 2013, representing a substantial increase from 46 in 2012 (see www.arctic-liaison.com/nsr_transits).

³⁶ IMO contribution.

³⁷ For example, the Commission on Narcotic Drugs highlighted the importance of international cooperation to tackle cross-border trafficking, citing the increasing rates of maritime trafficking using shipping containers (see [E/2014/28](#)).

³⁸ See pages.au.int/maritime/documents/2050-aim-strategy-0.

³⁹ See ec.europa.eu/maritimeaffairs/policy/maritime-security/index_en.htm.

31. In addition, in March 2014, IMO adopted a strategy for implementing sustainable maritime security measures in West and Central Africa, which is being implemented in cooperation with other partners such as the Counter-Terrorism Committee Executive Directorate.⁴⁰ IMO also adopted, in 2013, resolution A.1069(28) on the prevention and suppression of piracy, armed robbery against ships and illicit maritime activity in the Gulf of Guinea.

32. *Piracy and armed robbery at sea.* The overall number of reported acts, or attempted acts, of piracy⁴¹ and armed robbery against ships decreased by approximately 12 per cent in 2013, with 298 cases reported, primarily owing to a reduction of attacks by Somali pirates.⁴² There was also a reduction in the number of crew members killed, with one crew member reported to have been killed in 2013, as compared to five casualties in 2012. Similarly, there has been a marked decrease in reported cases of kidnapping and hostage-taking of crew, with 137 cases in 2013 as compared to 313 in 2012. Worldwide, occurrences of hijacking have also significantly decreased, with 11 incidents reported in 2013 as compared to 26 in 2012.⁴³ The majority of the attacks worldwide in 2013 were reported to have occurred or to have been attempted in port areas.

33. The declining trend was most evident off the coast of Somalia, where no merchant ship was reported hijacked in the high risk area in 2013.⁴⁴ However, Somali pirates still hold approximately 50 seafarers captive ashore — most of them from released ships.⁴⁵ The number of reported acts of piracy and armed robbery in the Gulf of Guinea also decreased to 54, compared with 64 in 2012. However, nine ships were reported hijacked (and subsequently released) in that region.⁴⁶ In light of the continuing high number of incidents in the Gulf of Guinea, the General Assembly and the Security Council have remained seized of the situation in the region.⁴⁷

34. The number of reported acts of piracy and armed robbery in South America and the Caribbean has fallen to 17 incidents, compared with 21 in 2012. Eight incidents were reported for the Mediterranean Sea, most of them taking place near the entrance to the Suez Canal. One incident occurred in the North Atlantic Ocean.⁴⁸ However, in 2013, a significant increase in the number of reported attacks occurred in the South China Sea, where 142 incidents were reported, as compared with 90 in 2012.⁴⁹

35. In light of the recent decrease in piracy incidents off the coast of Somalia, efforts to combat piracy have aimed at developing national and regional capacity to prevent and repress acts of piracy over the long term and ownership of counter-

⁴⁰ See www.imo.org/OurWork/Security/WestAfrica/Pages/WestAfrica.aspx. See also the contribution of the Counter-Terrorism Committee Executive Directorate.

⁴¹ Piracy is defined in article 101 of the Convention. Armed robbery against ships is defined in IMO Assembly resolution A.1025(26).

⁴² IMO document MSC.4/Circ.208.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Communiqué of the sixteenth plenary session of the Contact Group on Piracy off the Coast of Somalia.

⁴⁶ IMO document MSC.4/Circ.208.

⁴⁷ [A/RES/68/70](#) and [S/PRST/2013/13](#).

⁴⁸ IMO document MSC.4/Circ.208.

⁴⁹ Ibid.

piracy initiatives. In this regard, the Contact Group on Piracy off the coast of Somalia decided, in May 2014, to place more emphasis on capacity development of States in the region (see also para. 128 below).⁵⁰ Also, ministers from States participating in the Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden (the Djibouti Code of Conduct) agreed to work towards the establishment of a structure for regional implementation of the Code of Conduct.⁵¹ The General Assembly and the Security Council have remained seized of developments in the region.⁵²

36. More than 20 States are involved in prosecuting, or have prosecuted, over 1,200 persons suspected of piracy. IMO, the United Nations Office on Drugs and Crime and others continue to provide capacity-building to States in the region in that regard.⁵³ Efforts are still under way, including through the Hostage Support Programme, to secure the release and repatriation of the approximately 50 seafarers who are still held hostage in Somalia. In this regard, IMO decided, in May 2014, to forward draft interim guidelines on measures relating to the welfare of seafarers and their families affected by piracy off the coast of Somalia to the International Labour Organization (ILO).⁵⁴

IV. People at sea

37. Oceans and seas not only provide livelihoods for millions of people around the world. They are also used by many people to escape from conflict, human rights violations, economic deprivation and depletion of natural resources. One of the objectives of the Convention is the economic and social advancement of all peoples of the world. Improving the situation of people at sea has been an increasing focus of the international community. Through relevant instruments dealing with workers in the maritime sector and international migrants by sea, including stowaways, efforts have concentrated on developing rules and standards for the better treatment of people at sea.

38. *Maritime workers.* Recently, attention has focused on the increasing and beneficial role of women in the traditionally male-dominated maritime industry, including the fisheries sector, and the need to strengthen their capacity to engage in a productive manner in that sector.⁵⁵ Following the declaration of intent adopted at the IMO Regional Conference on the Development of a towards the development of a Global Strategy for Women Seafarers, held in Busan, Republic of Korea from 16 to 19 April 2013,⁵⁶ the declaration of the second international “Maritime Women: Global Leadership” conference recognized, inter alia, the leadership role that

⁵⁰ Communiqué of the sixteenth plenary session of the Contact Group on Piracy off the Coast of Somalia.

⁵¹ See www.imo.org/MediaCentre/PressBriefings/Pages/18-DCOCmeeting.aspx.

⁵² See General Assembly resolution 68/70 and Security Council resolution 2125 (2013).

⁵³ Communiqué of the sixteenth plenary session of the Contact Group on Piracy off the Coast of Somalia.

⁵⁴ IMO contribution.

⁵⁵ See IMO document TC 63/8 (www.imo.org/MediaCentre/HotTopics/women/Documents/8.pdf) and A/69/90, para. 14.

⁵⁶ See www.imo.org/MediaCentre/HotTopics/women/Pages/default.aspx.

women play in the sustainable development of the maritime sector, and called upon stakeholders to undertake a range of actions to promote their participation.⁵⁷

39. The 2014 celebration of the Day of the Seafarer reflects growing support and recognition of the service of, and difficulties faced by, the world's more than 1.5 million seafarers.⁵⁸ An important part of the efforts to improve the working conditions of seafarers relates to promoting the ratification and implementation of the instruments relating to their role, welfare and rights. In addition, the 2014 amendments to the Maritime Labour Convention, 2006, require shipowners to have financial security to cover abandonment as well as death or long-term disability of seafarers owing to occupational injury and hazard.⁵⁹ In 2013, IMO endorsed "Interim Guidelines for Owners, Operators and Masters for protection against piracy in the Gulf of Guinea region" previously adopted by the shipping industry (Circular letter No. 3394).

40. As regards the fisheries sector, which reportedly suffers around 24,000 human losses annually, IMO continued to promote the implementation of the Fishing Vessel Safety Code and Voluntary Guidelines, which contain recommendations to protect the lives of fishers.⁶⁰ At the regional level, the good practices for the protection of migrant fishers were discussed at the Regional Meeting on Work in Fishing organized by the Association of Southeast Asian Nations in September 2013.⁶¹

41. *International migrants by sea.* Movements of refugees, asylum-seekers, stateless persons and migrants by sea increased in 2013 compared to 2012.⁶² The incidences of violence, exploitation, abduction and trafficking en route or on arrival also rose.⁶³ The high number of loss of life at sea in 2013 and thus far in 2014 has brought this long-standing phenomenon into sharper focus.⁶⁴ They have also underscored the importance of the duty to render assistance to any person(s) found in distress at sea and to promote effective and adequate search and rescue services as provided for in the Convention and other instruments.

42. While the Office of the United Nations High Commissioner for Refugees (UNHCR) has noted the positive efforts made by States to limit loss of life, it has

⁵⁷ See <http://wmu.se/events/maritime-women-global-leadership-2nd-international-conference> and http://wmu.se/sites/default/files/documents/files/Declaration_Maritime%20Women%20Global%20Leadership%20Conference.pdf.

⁵⁸ See www.imo.org/About/Events/dayoftheseafarer/Pages/Day-of-the-Seafarer-2014.aspx.

⁵⁹ IMO contribution. See also www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_246189.pdf and www.ilo.org/global/standards/maritime-labour-convention/WCMS_246823/lang--en/index.htm.

⁶⁰ See www.imo.org/OurWork/Safety/Regulations/FishingVessels/Pages/Default.aspx.

⁶¹ ILO contribution.

⁶² UNHCR contribution.

⁶³ There is also growing concern about the increasing numbers of women and children travelling irregularly by sea. UNHCR contribution.

⁶⁴ UNHCR estimated that at least 700 people died at sea trying to reach Italy in 2013. At least 1,880 deaths in the Mediterranean and Aegean seas had been recorded in 2014 as at mid-August. In South-East Asia, UNHCR estimates that 87,000 irregular maritime departures have taken place from the Bangladesh-Myanmar border area in the Bay of Bengal since June 2012. This includes 53,000 departures in the 12 months ending June 2014, a 61 per cent increase from the previous 12 months. It is estimated that 200 persons died at sea in this area in 2014 alone, in addition to 600 deaths during risky boat journeys in the Asia-Pacific region in 2013. In the Gulf of Aden, over 130 persons have died in the first half of 2014 making the sea journey to Yemen. UNHCR contribution. See also www.unhcr.org/53f1c5fc9.html.

also noted examples of practices that recall the need to ensure that responses to irregular sea movements do not take a form that jeopardizes access to protection by those who need it.⁶⁵ The Global Initiative on Protection at Sea⁶⁶ developed by UNHCR aims at assisting States in reducing loss of life at sea, as well addressing as exploitation, abuse and violence experienced by people travelling irregularly by sea, and establishing protection-sensitive responses. The annual High Commissioner's Dialogue on Protection Challenges, to be held in December 2014, will focus on the theme "Protection at sea", fostering an exchange of views on issues such as rescue and disembarkation, the drivers of irregular movements by sea and international cooperation, and will feed into the Global Initiative.

43. Issues relating to stowaways are addressed in the Convention on Facilitation of Maritime Traffic. While the number of incidents reported to IMO decreased in 2013 — 70 stowaway incidents involving 166 stowaways as compared to 90 incidents involving 203 stowaways⁶⁷ in 2012⁶⁸ — it has been noted that the statistics underreported the scale of the problem,⁶⁹ which not only poses a danger to the lives of stowaways but also to maritime safety. The need for port facilities to further strengthen their capacities for surveillance and access control to reduce the incidence of stowaways has been underlined.⁷⁰

V. Developing a sustainable ocean-based economy

44. States are increasingly looking to the oceans and seas and their resources as a source of economic growth and social advancement. In that regard, growing attention is being paid to developing "blue growth" or a "blue economy".⁷¹ Marine ecosystems underpin a wide range of ecosystem goods and services, ranging, for example, from food (see paras. 61-69), non-living resources (see paras. 48-60), to energy, transport (see paras. 19-27), livelihoods (see paras. 38-40), biotechnology (see para. 79), coastal protection, climate regulation (see paras. 101-111) and recreation.⁷²

45. Oceans and seas can, therefore, play a critical role in the achievement of the Millennium Development Goals and in the post-2015 development agenda.

⁶⁵ UNHCR contribution.

⁶⁶ See also the Central Mediterranean Sea Initiative of UNHCR.

⁶⁷ IMO document FAL.2/Circ.128. Of the 203 stowaways, 89 embarked in Africa, 3 in America, 6 in Asia, 39 in Europe and 62 in unknown places.

⁶⁸ IMO document FAL.2/Circ.126.

⁶⁹ See www.imo.org/MediaCentre/MeetingSummaries/FAL/Pages/FAL-38th-session-.aspx.

⁷⁰ Most recently at a regional seminar on stowaways in West and Central Africa. See www.imo.org/MediaCentre/PressBriefings/Pages/09-stowaways.aspx.

⁷¹ See, for example, Blue Economy Summit, 19 and 20 January 2014, Abu Dhabi, United Arab Emirates, at www.sids2014.org/index.php?page=view&type=13&nr=59&menu=1515; Global Oceans Action Summit for Food Security and Blue Growth, 22-25 April 2014, The Hague, Netherlands, at www.globaloceansactionsummit.com/ezsummit/assets/File/Chairs%20Summary%20report-6%20May%202014-nn.pdf; and the FAO Blue Growth Initiative (FAO document COFI/2014/4.1).

⁷² For example, it is estimated that high seas ecosystems are responsible for nearly half of the biological productivity in the oceans. See A. D. Rogers and others, *The High Seas and Us: Understanding the Value of High-Seas Ecosystems* (Oxford, United Kingdom, Global Ocean Commission, 2014).

However, realizing the full development potential of the oceans and seas depends on carrying out ocean-based activities in a sustainable manner.

46. The Convention provides the legal framework for the sustainable development of oceans and seas and their resources. It establishes a delicate balance between the need for economic and social development through the use of the oceans and their resources and the need to protect and preserve the marine environment and conserve and manage its resources. In addition, the Convention provides for scientific and technical assistance to developing countries and the development and transfer of marine technology. Full implementation of the Convention could provide all States with the opportunity to develop and benefit from a sustainable ocean-based economy.

47. While efforts have continued to address various pressures on oceans and seas, recent studies have shown that the current state of marine ecosystems falls short of their potential to provide for human needs in terms of oxygen, food, employment, energy and an optimal climate.⁷³ Most areas in the oceans are negatively affected by unsustainable activities both at sea and on land.⁷⁴ The continued expansion of global population also exerts increasing pressures on marine resources and ecosystems.⁷⁵ In addition, new uses of the oceans and their resources have emerged, such as the search for alternative energy sources as well as ocean fertilization as a climate change mitigation measure, which may, if uncontrolled, also add their footprint to the deteriorating state of the marine environment. The continued loss in marine biodiversity and marine ecosystems productivity will hamper efforts to meet development goals, in particular those related to poverty eradication, food security and health. The 2013 *Millennium Development Goals Report* recognized that accelerated progress and bolder action were needed in many areas, including environmental sustainability. In response to their commitments in “The future we want” (General Assembly resolution 66/288, annex), Member States, in the context of the post-2015 development agenda process, in particular the Open Working Group on Sustainable Development Goals, have included oceans and seas as one of the topics of focus of their discussions, including in the form of a stand-alone goal on oceans with associated targets.⁷⁶

A. Sustainable exploitation of non-living resources

48. Advances in technology (see para. 125 below) are enabling an increasing number of States, in particular developing countries, to fully benefit from the exploitation of non-living resources, both within and beyond national jurisdiction. While there are still technical limitations to the exploitation of both renewable and non-renewable resources in the oceans, commercial viability and concerns over energy security are driving innovations in extraction and production. The

⁷³ UNEP/CBD/SBSTTA/18/INF/2.

⁷⁴ For example, in June 2014, the “Our Oceans” Conference addressed the pressing issues of sustainable fisheries, marine pollution and ocean acidification. See www.state.gov/e/oes/ocns/opa/2014conf/index.htm.

⁷⁵ A. D. Rogers and D. Laffoley, “The global state of the ocean: interactions between stresses, impacts and some potential solutions; Synthesis papers from the International Programme on the State of the Ocean 2011 and 2012 workshops”, *Marine Pollution Bulletin*, vol. 74, No. 2 (30 September 2013).

⁷⁶ See <http://sustainabledevelopment.un.org/focussdgs.html>.

sustainable harvesting of non-living resources, in accordance with the Convention, has the potential to contribute to the development of an ocean-based economy.

49. Against the backdrop of a decline in production from conventional sources of energy and the decline in investment for discovery and infrastructure in that sector,⁷⁷ the role that non-conventional sources (onshore shale and light tight oil) have played in the last decade for the oil and gas industry has been highlighted.⁷⁸ As the output from non-conventional sources grows and offsets the decline in conventional sources,⁷⁹ it has been suggested that future investment in the deep-water and ultra-deep-water offshore sectors may suffer as other parts of the world shift their attention to the shale sector.⁸⁰

50. The decommissioning of offshore oil and gas structures continues to be a growing concern from technical, financial and environmental perspectives.⁸¹ Attention has focused, recently, on the management of wells from a full-cycle approach, with clear end-of-life strategies, as well as on possible alternatives to the complete removal of structures as decommissioning strategies.⁸² There is growing research showing that structures such as platforms provide a terrain for the development of diverse marine biological communities.⁸³ In this regard, regulations have been adopted in some regions allowing for the conversion of platforms to permanent artificial reefs, in some cases as exceptions to full removal.⁸⁴

51. Another growing trend has been the conclusion of international agreements for cooperation in the development of transboundary deposits, or for their joint

⁷⁷ International Energy Agency, *World Energy Investment Outlook: Special Report* (Paris, June 2014).

⁷⁸ International Energy Agency, *Medium-Term Oil Market Report 2014* (Paris, 2014), executive summary.

⁷⁹ R. Mason, "Deepwater versus unconventional in the energy mix", *Deepwater International*, vol. 16, No. 10 (May 2014).

⁸⁰ "Shale oil boom a threat to deepwater investment", *Deepwater International*, vol. 15, No. 17 (September 2013).

⁸¹ Bureau of Safety and Environmental Enforcement, United States Department of the Interior, "Statistics for Decommissioned Platforms on the OCS"; J. Harpin, "Measuring the impact of aging infrastructure in the UK North Sea", *Offshore Magazine*, vol. 71, No. 8 (January 2011); and "Report predicts North Sea oil and gas decommissioning costs could exceed £ 47.5 billion", *Pipeline and Gas Journal*, vol. 239, No. 1 (January 2012).

⁸² See www.gov.uk/government/news/tax-certainty-for-oil-and-gas-decommissioning-will-lead-to-extra-13-billion-north-sea-investment; A. M. Fowler and others, "A multi-criteria decision approach to decommissioning of offshore oil and gas infrastructure", *Ocean and Coastal Management*, vol. 87 (January 2014); C. Gorges and others, "Comparative assessment of environmental impacts associated with the decommissioning of fixed offshore platforms", *Australian Journal of Basic and Applied Sciences*, vol. 8, No. 5 (April 2014).

⁸³ P. I. Macreadie and others, "Rigs-to-reefs: will the deep sea benefit from artificial habitat?", *Frontiers in Ecology and the Environment*, vol. 9 (2011); D. Jørgensen, "OSPAR's exclusion of rigs-to-reefs in the North Sea", *Ocean and Coastal Management*, vol. 58 (March 2012); P. W. Sammarco and others, "Coral communities on artificial reefs in the Gulf of Mexico: standing vs. toppled oil platforms", *ICES Journal of Marine Science*, vol. 71, No. 2 (January/February 2014).

⁸⁴ See Bureau of Safety and Environmental Enforcement, United States Department of the Interior, "Decommissioning and Rigs to Reefs in the Gulf of Mexico FAQ"; Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission), decision 98/3 on the disposal of disused offshore installations and "2013 Update of the inventory of Oil and Gas Offshore Installations in the OSPAR Maritime Area" (available from ospar.org).

development.⁸⁵ Such a trend may endure as a number of submissions to the Commission (see paras. 9-12 above) have been made jointly by States.⁸⁶

52. Seabed mining continues to be of particular interest in the context of the development of an ocean-based economy. Besides technical feasibility, the driving force of offshore mining remains commercial viability.⁸⁷ In some cases, it is anticipated that the rising costs of land-based production may increase the share of offshore production in the future.⁸⁸

53. Currently several contractors are conducting exploration and research activities within national jurisdiction in the Asia-Pacific region and the Red Sea.⁸⁹ States in the Pacific have been cooperating through the South Pacific Commission-European Union Pacific Deep Sea Minerals Project in order to develop national policy, law and fiscal regimes for their engagement both within and beyond national jurisdiction.⁹⁰

54. With regard to activities in the Area, the International Seabed Authority is working towards the development of an exploitation code, further evidence of the advance towards the extraction and commercialization of seabed minerals. To date, 26 contracts for exploration in the Area have been granted by the Authority. It is noteworthy that applications for exploration have been made by States spanning all levels of economic development.

55. Following the Advisory Opinion of the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea regarding the responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Case No. 17), as at 30 May 2014, 19 States and an intergovernmental organization on behalf of several States had provided information on or texts of relevant national legislation and measures aimed at ensuring that contractors comply with their obligations.⁹¹

56. While technological advances in ultra-deep production of hydrocarbons and seabed mining have not yet been used for production on the continental shelf beyond 200 nautical miles, issues related to the implementation of article 82 of the Convention will require attention.

⁸⁵ See, for example, 2012 Agreement between the United States of America and Mexico Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico; 2012 Treaty concerning the joint exercise of sovereign rights over the continental shelf in the Mascarene Plateau region between the Government of the Republic of Seychelles and the Government of the Republic of Mauritius; and 2012 Treaty concerning the joint management of the continental shelf in the Mascarene Plateau region between the Government of the Republic of Seychelles and the Government of the Republic of Mauritius.

⁸⁶ See www.un.org/Depts/los/clcs_new/commission_submissions.htm.

⁸⁷ "Tin market prices face sustained strength; supply still tight", *Platt's Metal Week*, vol. 75, No. 23 (June 2004); Economist Intelligence Unit, "World: Commodities — EIU's monthly tin outlook", *EIU ViewsWire*, 1 March 2014.

⁸⁸ "PT Timah modifies offshore tin dredge", *The ASIA Miner*, vol. 13 (March 2013); see also Business Monitor International, Indonesia mining report, third quarter 2014, May 2013.

⁸⁹ These are Nautilus Minerals, Neptune Minerals, Bluewater Metals and the Korea Ocean Research and Development Institute.

⁹⁰ Contribution of the South Pacific Applied Geoscience Commission. See also www.sopac.org/dsm/index.php/regional-meetings-and-trainings.

⁹¹ See www.isa.org.jm/en/mcode/NatLeg.

57. Increased attention is being directed to marine renewable energies — a nascent but growing field — including in light of the environmental concerns associated with conventional energy sources (see also paras. 101-111 below).⁹² Ocean energy, which includes ocean thermal energy conversion, salinity gradient energy, tidal energy and wave energy, can potentially satisfy up to three quarters of global energy demand, but is the least deployed of any renewable energy source, with only about 500 megawatts of installed capacity.⁹³ The different ocean energy technologies remain at different levels of commercial and technological readiness to deliver on their potential.⁹⁴

58. Aside from tidal range, which constitutes more than 90 per cent of currently produced energy from ocean energy technologies, many other technologies are technically at a developing stage.⁹⁵ Despite growing commercial interest and numerous demonstration projects and feasibility studies for larger-scale deployment of ocean energy technologies, these technologies do not yet prominently feature in State energy plans.⁹⁶

59. Offshore wind is a more developed, but still emerging, field with about six gigawatts of capacity installed at the end of 2012. It is expected to progress towards lower costs through continued development, and to increase from about 6 gigawatts to about 230 gigawatts by 2030.⁹⁷ It is also envisioned that larger wind farms with larger turbines will be deployed further offshore, and in deeper waters.⁹⁸

60. Globally, by 2030, of the 37,000 terawatt-hours per year of global power generation, offshore wind could account for two per cent, while ocean energy technologies could account for 0.1 per cent.⁹⁹ However, in order to reach these targets, the average annual investment would need to total US\$ 26 billion for offshore wind and US\$ 1 billion for ocean energy technologies.¹⁰⁰

B. Conservation and management of marine living resources

61. The international community has paid increasing attention to the significant contribution of marine living resources to global food security, including as a critical source of nutrition, revenue and livelihoods, in particular for women in developing countries. For example, fish provide approximately 3 billion people with almost 20 per cent of their average animal protein. It is the sole source of critical proteins and the single most traded food product in some developing countries.¹⁰¹ The importance of this issue has been reflected in a number of meetings, such as the

⁹² [A/67/79](#).

⁹³ International Renewable Energy Agency, *REmap 2030: A Renewable Energy Roadmap* (Abu Dhabi, June 2014).

⁹⁴ See www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=431.

⁹⁵ International Renewable Energy Agency, *REmap 2030* (see footnote 93 above).

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*

⁹⁸ European Wind Energy Association, *The European Offshore Wind Industry — Key Trends And Statistics 2013* (2014).

⁹⁹ International Renewable Energy Agency, *REmap 2030* (see footnote 93 above).

¹⁰⁰ *Ibid.*

¹⁰¹ [A/69/90](#) and FAO, *The State of World Fisheries and Aquaculture 2014* (Rome, 2014).

Informal Consultative Process (see para. 141 below).¹⁰² Also noteworthy is the adoption of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication by the FAO Committee on Fisheries in 2014.¹⁰³

62. Despite these developments, traditional pressures continue to threaten the contribution of marine living resources to global food security, such as overexploitation and other unsustainable practices, as well as stressors on the marine environment that affect the health, productivity and resilience of marine ecosystems. It is estimated that almost one third of global fish stocks are overexploited or fished at biologically unsustainable levels,¹⁰⁴ notwithstanding recent commitments to improve the sustainability of fish stocks.¹⁰⁵ The steady increase in global fish production and consumption over the past five decades has, therefore, been met in large part by the growth of aquaculture.

63. Addressing these pressures remains of critical importance to achieving global food security. Foremost among the priorities is the need to ensure the full implementation of relevant international instruments, beginning with the Convention, which sets out the overarching legal regime for the conservation and management of marine living resources, including the rights and obligations of flag States and coastal States in the maritime zones.

64. Recent efforts in this regard have focused on improving flag State performance, particularly in combating illegal, unreported and unregulated fishing. The Voluntary Guidelines for Flag State Performance recently endorsed by FAO are an additional key tool to prevent, deter and eliminate illegal, unreported and unregulated fishing.¹⁰⁶ FAO and IMO have also continued to develop the phased implementation of a Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, including global unique vessel identifiers. In 2013, the IMO Assembly agreed to extend the IMO ship identification numbering scheme to fishing vessels of 100 gross tonnage and above on a voluntary basis. It will provide a single number for the entire life of a vessel regardless of changes of flag, ownership or name.¹⁰⁷

65. In addition, FAO has continued to encourage the entry into force and implementation of the 2009 Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, including through regional workshops to assist developing countries in strengthening and harmonizing port

¹⁰² [A/69/90](#) and [A/69/71](#). See also the report of the High Level Panel of Experts on Food Security and Nutrition of the Commission on World Food Security, "Sustainable fisheries and aquaculture for food security and nutrition", and the outcome of the Global Oceans Action Summit for Food Security and Blue Growth (April 2014).

¹⁰³ FAO contribution.

¹⁰⁴ FAO has estimated that 28.8 per cent of fish stocks were fished at biologically unsustainable levels, or overexploited, in 2011, while only 9.9 per cent of stocks were reported as under-fished. (FAO, *The State of World Fisheries and Aquaculture 2014* (Rome, 2014)).

¹⁰⁵ See, for example, General Assembly resolution [66/288](#), in which States committed themselves to intensifying their efforts to meet the 2015 target as agreed to in the Johannesburg Plan of Implementation to maintain or restore stocks to levels that can produce maximum sustainable yield on an urgent basis.

¹⁰⁶ FAO document COFI/2014/4.2/Rev.1, appendix II.

¹⁰⁷ FAO contribution. Also see IMO document A 28/Res.1078.

State measures.¹⁰⁸ To facilitate implementation of the Agreement, the North-East Atlantic Fisheries Commission (NEAFC) developed an electronic system of port State control and is sharing its experience in this regard.¹⁰⁹

66. Apart from the need for full implementation of the Convention, renewed efforts are also needed to ensure the wider participation in, and full implementation of, the United Nations Fish Stocks Agreement. The tenth round of Informal Consultations of States Parties to the Agreement, held in April 2014, considered regional, subregional and global implementation of the Agreement and initial preparatory steps for the resumption of the Review Conference in 2016. It was agreed that an eleventh round of Informal Consultations of States Parties would be held in 2015, primarily as a preparatory meeting for the resumed Review Conference.¹¹⁰

67. Efforts have also continued to improve the conservation and management of fisheries through the adoption and implementation of ecosystem (see paras. 93-96 below) and precautionary approaches, as well as area-based management tools (see paras. 97-99 below). For example, FAO launched the “Blue Growth Initiative” for the sustainable, integrated and socioeconomically sensitive management of fisheries resources.¹¹¹ Efforts have also been undertaken by other organizations to minimize by-catch and discards.¹¹²

68. A wide range of actions also continue to be taken to address the impacts of bottom fishing on vulnerable marine ecosystems and the long-term sustainability of deep-sea fish stocks, in line with relevant General Assembly resolutions and the 2008 FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas.¹¹³ FAO continued to develop its programme on deep-sea fisheries in areas beyond national jurisdiction, including through the convening of workshops on vulnerable marine ecosystems and the creation of a database on vulnerable marine ecosystems, as well as the initiation of capacity development and improved knowledge on the use and application of impact and risk assessments.¹¹⁴

69. At the regional level, the Northwest Atlantic Fisheries Organization will review in 2014 the 19 areas it has closed to bottom fishing, as well as other potential areas. It also developed a comprehensive list of vulnerable marine ecosystem indicator species and established a framework to continue to support research on vulnerable marine ecosystems.¹¹⁵ Following a review of the NEAFC bottom fishing regulation in 2012, a revised recommendation on the protection of vulnerable

¹⁰⁸ FAO contribution.

¹⁰⁹ NEAFC contribution.

¹¹⁰ ICSP10/UNFSA/INF.3 at www.un.org/Depts/los/convention_agreements/fish_stocks_agreement_states_parties.htm.

¹¹¹ FAO contribution.

¹¹² Contributions of the Commission for the Conservation of Antarctic Marine Living Resources, the Northwest Atlantic Fisheries Organization and NEAFC.

¹¹³ A further review of the measures taken by States and regional fisheries management organization pursuant to relevant General Assembly resolutions will be undertaken by the General Assembly in 2015 (see resolution 66/68).

¹¹⁴ FAO contribution.

¹¹⁵ Contribution of the Northwest Atlantic Fisheries Organization.

marine ecosystems in the NEAFC Regulatory Area was adopted, the effectiveness of which will be reviewed every five years.¹¹⁶

C. Conservation and sustainable use of marine biodiversity

70. Under the Convention, States have the obligation to protect and preserve the marine environment, including by taking measures to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life. In accordance with that obligation, States have the sovereign right to exploit their natural resources pursuant to their environmental policies.

71. As indicated above, marine biodiversity and ecosystems underpin a variety of ecosystem goods and services. Enhancing benefits from biodiversity and ecosystem services will, inter alia, depend on actions to address the underlying causes of biodiversity loss and ecosystem degradation.¹¹⁷

72. In spite of an increase in responses to address biodiversity loss, it is predicted that pressures on biodiversity, including marine biodiversity, will continue to increase at least until 2020, the target year for achievement of most of the Aichi Biodiversity Targets, and that biodiversity will continue to decline. While such continued loss may result from the time that it takes for management measures to have their expected effects,¹¹⁸ the effectiveness of measures is also hampered by a lack of scientific, economic and social data that provide a clear understanding of how human activities affect marine ecosystems, in particular in areas beyond national jurisdiction, and how ecosystem changes, in turn, affect human well-being (see paras. 119 and 120 below).¹¹⁹

73. In the last decade, the work of the General Assembly on the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction, through its Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, which met from 1 to 4 April and 16 to 19 June 2014,¹²⁰ has sparked the growth of scientific and technical work to support the consideration by the General Assembly of these issues, with a spillover effect on issues related to marine biodiversity in general. This has also generated greater cross-sectoral cooperation between various international organizations.¹²¹

¹¹⁶ NEAFC contribution. Also see www.neafc.org/news/10732.

¹¹⁷ UNEP/CBD/SBSTTA/18/2.

¹¹⁸ Ibid.

¹¹⁹ A. D. Rogers and others, *The High Seas and Us* (see footnote 72 above).

¹²⁰ [A/69/82](#) and [A/69/177](#).

¹²¹ For example, the Secretariat of the Convention on Biological Diversity reported that the ecologically or biologically significant marine area process had facilitated the sharing of scientific information and networking of experts across disciplines. FAO reported that the Global Environment Facility-funded programme on global sustainable fisheries management and biodiversity conservation in areas beyond national jurisdiction, initiated in 2014, brought together FAO, UNEP and the World Bank, as well as other partners.

74. Work has intensified, in particular, in relation to the description of ecological and biological significant areas. The process ongoing in the context of the Convention on Biological Diversity to that end,¹²² which has covered approximately 70 per cent of the oceans to date and described 207 such areas, 57 of which are wholly or partly beyond national jurisdiction,¹²³ is now nearing completion. Similarly, in furtherance of its work related to the protection and preservation of the marine environment from activities in the Area, the International Seabed Authority is planning additional workshops in 2014 and 2015 aimed at improving understanding of, and identifying baseline data for, the biological communities associated with various mineral resources in the Area.¹²⁴ It is also integrating the environmental data provided by the contractors with a view to developing an ecosystem-based database for the Area.¹²⁵

75. Global guidance to address specific threats to marine biodiversity, such as climate change, underwater noise, marine debris and illegal trade in wildlife,¹²⁶ as well as implement a number of management tools in support of the fulfilment by States of their commitments and obligations stemming from various marine biodiversity-related instruments is increasingly being developed in different forums (see paras. 84-85, 90, 91-100 and 101-111 below).

76. Measures also continue to be adopted for specific ecosystems and species, in particular coral reefs¹²⁷ and marine migratory species, including cetaceans.¹²⁸ This has included listing of culturally and ecologically important species and sites, such as marine and coastal areas, on the Ramsar List of Wetlands of International Importance¹²⁹ and the World Heritage List.¹³⁰

77. Activities in some regions have also focused on marine biodiversity beyond areas of national jurisdiction,¹³¹ as well as how to address specific threats, including

¹²² Convention on Biological Diversity decisions X/29 and XI/17.

¹²³ UNEP/CBD/SBSTTA/18/4.

¹²⁴ [ISBA/20/A/2](#).

¹²⁵ Ibid.

¹²⁶ Decision [UNEP/EA.1/L.16](#).

¹²⁷ UNEP/CBD/SBSTTA/18/4 and UNEP/CBD/SBSTTA/18/L.5. See also the development by UNEP of a global coral reef partnership at http://icriforum.org/sites/default/files/ICRIGM28-Meeting_paper-UNEP_RS_coral_partnership.pdf.

¹²⁸ See documents for the eleventh meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals at www.cms.int/en/cop11/documents. See also International Whaling Commission workshop on mitigation and management of the threats posed by marine debris to cetaceans at <https://events.iwc.int/index.php/workshops/index/schedConfs/archive>, and documents for the sixty-fifth session of the International Whaling Commission at <http://iwc.int/iwc65docs>.

¹²⁹ See www.ramsar.org.

¹³⁰ See <http://whc.unesco.org/en/newproperties/>.

¹³¹ Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea, 11 March 2014, at www.sargassoalliance.org/hamilton-declaration. See also decision CP 11/10 of the eleventh meeting of Contracting Parties to the Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention) (UNEP (DEPI)/WACAF/COP.11/9/Rev1, available from <http://cop11.abidjanconvention.org/>).

through research, mitigation options and the issuance of guidance (see paras. 141 and 142 below).¹³²

78. Through a growing number of capacity-building initiatives, such as the Sustainable Ocean Initiative of the Convention on Biological Diversity, States are being assisted to implement their relevant commitments (see para. 128 below).

79. *Marine genetic resources.* In light of the high potential of marine genetic resources for biotechnological applications in a number of sectors from bioremediation to food processing and pharmaceuticals, the maintenance of genetic diversity is also essential. Marine biotechnology is increasing in importance as a research priority in both developed and developing countries. Biofuels and marine bioactives seem to be the main focus in many States.¹³³ Molecular aquaculture is also a research priority in several States.¹³⁴

80. Despite the increasing interest in marine biotechnology, very few States have developed specific national marine biotechnology research and development programmes, strategies, plans or policies. Instead, many States have developed general biotechnology strategies or marine development plans that contain some elements relevant to marine biotechnology.¹³⁵ Similarly, few States have adopted laws or regulations related specifically to access to and benefit-sharing from the utilization of marine genetic resources of areas within national jurisdiction, such resources being encompassed, in most States, in broader laws and regulations on access and benefit-sharing.¹³⁶ Regarding infrastructures and supporting capacities, many States seem to rely on regional initiatives and transregional cooperation activities.¹³⁷

81. At the global policy level, besides discussions on marine genetic resources of areas beyond national jurisdiction by the General Assembly Ad Hoc Informal Working Group, work has been ongoing to promote the entry into force and implementation of international instruments addressing a number of issues related, generally, to genetic resources. For example, 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 will enter into force on 12 October 2014.¹³⁸ Discussions are also ongoing with regard to the development of an international instrument addressing the intellectual property rights aspects of genetic resources. The World Intellectual Property Organization General Assembly will consider a draft document in that regard in September 2014.¹³⁹

¹³² See, for example, the work of the working groups of the Agreement on the Conservation of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas at www.ascobans.org/en/working-groups. See also "Report of the ACCOBAMS expert workshop on the impact of climate change on cetaceans of the Mediterranean and Black seas", at <http://accobams.org/>. See also Helsinki Commission and OSPAR Commission contributions; and decisions of the eleventh meeting of Contracting Parties to the Abidjan Convention (document UNEP (DEPI)/WACAF/COP.11/9/Rev1, available from <http://cop11.abidjanconvention.org/>).

¹³³ See www.marinebiotech.eu/wiki/Marine_Biotechnology_international_summary.

¹³⁴ Ibid.

¹³⁵ Ibid.

¹³⁶ See www.cbd.int/abs/measures/default.shtml.

¹³⁷ Ibid. See also http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/.

¹³⁸ See www.cbd.int/abs/nagoya-protocol/signatories/default.shtml.

¹³⁹ See www.wipo.int/export/sites/www/about-wipo/en/assemblies/pdf/synthesis_2013.pdf.

D. Pressures on the marine environment

82. The health of marine ecosystems is negatively affected by marine pollution from a number of sources. For example, nitrogen and phosphorous pollution poses a significant threat to biodiversity and ecosystem services globally. Plastics in the marine environment are of continuing concern. While damage from marine oil spills seems to have declined overall, including due to better ship design and improved navigation (see paras. 19-27 above), pollution from pipelines, mainly land-based, has increased due to ageing infrastructure (see para. 50 above).¹⁴⁰

83. In line with the obligations of States under the Convention to take measures to prevent, reduce and control pollution of the marine environment from any source, various measures are being taken at the global and regional levels to address marine pollution from different sources, including with a view to strengthening implementation of existing instruments through the development of guidance, multi-stakeholder cooperation and capacity-building.

84. With regard to land-based activities, with a view to furthering the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, the Second Global Conference on Land-Ocean Connections, held in 2013, considered, inter alia, global multi-stakeholder partnerships to address three priority pollution source categories, namely nutrients, marine debris (marine litter) and wastewater.¹⁴¹

85. Increasing attention is being focused on the impact of plastics and microplastics on humans and marine life.¹⁴² Most recently, the impacts of plastics on search and rescue operations at sea were also brought to the fore with the tragedy of Malaysia Airlines flight MH370, with search efforts being misled by garbage spotted by radar, ships and airplanes.¹⁴³ Measures to address marine debris are being developed at the global level in the context of the Convention on Biological Diversity, FAO, IMO and the United Nations Environment Programme (UNEP) (see also para. 142 below).¹⁴⁴

86. Hazardous chemicals and pesticides, persistent organic pollutants and the bioaccumulation of mercury also pose a threat to human and marine life thus underscoring the need for full implementation of the relevant legal instruments. In this regard, programmes were undertaken to assist States in preparing for the entry into force of the Minamata Convention on Mercury.¹⁴⁵ A special programme to support institutional strengthening at the national level for implementation 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, the Stockholm Convention on Persistent Organic Pollutants and the Minamata

¹⁴⁰ UNEP/CBD/SBSTTA/18/INF/2.

¹⁴¹ See www.gpa.unep.org/index.php/gloc-2.

¹⁴² UNEP Year Book 2014 emerging issues update at www.unep.org/yearbook/2014/PDF/chapt8.pdf. See also draft assessment report by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection at www.imo.org/MediaCentre/PressBriefings/Pages/36-microplastics-gesamp.aspx#.U8k49vldWNA.

¹⁴³ See www.dw.de/ioc-garbage-having-a-severe-impact-on-marine-life/a-17678432.

¹⁴⁴ Contributions of the Secretariat of the Convention on Biological Diversity, FAO and IMO.

¹⁴⁵ See www.mercuryconvention.org. See also IAEA contribution.

Convention was also adopted at the United Nations Environment Assembly, in June 2014.¹⁴⁶ Activities are also being carried out to generate monitoring data on persistent organic pollutant concentrations in humans, ambient air and surface water for water-soluble persistent organic pollutants.¹⁴⁷

87. The environmental impacts of seabed activities have also received increased attention. Following the 2010 Deepwater Horizon oil spill in the Gulf of Mexico, a number of changes in the regulation of the offshore oil and gas industry have occurred, including administrative changes to decouple the authorities issuing permits and those in charge of monitoring compliance with environmental regulations,¹⁴⁸ and the establishment of buffer zones around marine protected areas.¹⁴⁹ As the non-conventional sector is projecting technical and economic viability offshore and potentially in the Arctic (see paras. 48-60 above),¹⁵⁰ pressures to enact appropriate regulation have grown and measures are being considered in a number of regions.¹⁵¹ Concerns have also been expressed regarding the potential environmental impacts of mining activities in the seabed.¹⁵² The International Seabed Authority is working to address such concerns with regard to mining in the Area (see [A/68/71/Add.1](#) and paras. 74 and 92 of the present report).¹⁵³

88. Efforts to address pressures on the marine environment from shipping and related activities have focused on effective implementation of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL) and the promotion of the entry into force of the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships and of the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments (see also paras. 19-27 and 105-107 of the present report). IMO has also continued to consider issues related to liability and compensation for transboundary pollution damage resulting from offshore oil exploration and exploitation activities.¹⁵⁴

¹⁴⁶ [UNEP/EA.1/L.17](#).

¹⁴⁷ Contribution of the Secretariat of the Basel, Stockholm and Rotterdam Conventions.

¹⁴⁸ See, for example, United States Secretary of the Interior, Order No. 3299, 19 May 2010.

¹⁴⁹ See, for example, Italy's Legislative Decree 1280 of 29 June 2010 on "Amendments to the legislative decree 152 of 3 April 2006, laying down rules on the environment, in accordance with Article 12 of the Law 69 of 18 June 2009".

¹⁵⁰ See www.conocophillips.ca/our-operations/canadian-arctic/Pages/exploration-and-development.aspx.

¹⁵¹ See, for example, European Commission recommendation of 22 January 2014 on minimum principles for the exploration and production of hydrocarbons (such as shale gas) using high-volume hydraulic fracturing. While the recommendation addresses onshore activities, it recognizes the need for future updates due to technical advances, with specific references to high-volume hydraulic fracturing in offshore operations.

¹⁵² R. E. Boschena and others, "Mining of deep-sea seafloor massive sulfides: A review of the deposits, their benthic communities, impacts from mining, regulatory frameworks and management strategies", *Ocean and Coastal Management*, vol. 84 (November 2013); New Zealand Environmental Protection Authority, "Decision released on Trans-Tasman Resources Ltd marine consent application" at www.epa.govt.nz/news/epa-media-releases/Pages/Decision-released-on-TTR-Ltd.aspx.

¹⁵³ [ISBA/18/C/22](#); [ISBA/17/LTC/7](#); [ISBA/19/LTC/8](#); [ISBA/20/C/L.10](#).

¹⁵⁴ IMO document LEG 101/11.

89. Efforts to improve waste management and regulate dumping at sea are also ongoing, including in relation to marine geoengineering (see paras. 108 and 109).¹⁵⁵ In the context of the Basel Convention, the parties adopted decisions to facilitate the entry into force of the Ban Amendment, to adopt a framework for the environmentally sound management of wastes, and to provide legal clarity with respect to the interpretation of certain terminology used in the Basel Convention. A number of technical guidelines for the environmentally sound management of the wastes, such as persistent organic pollutant wastes, electronic equipment wastes and mercury wastes, are under development or being updated. An assessment of how far the current Basel Convention technical guidelines cover MARPOL wastes is also being undertaken in consultation with IMO.¹⁵⁶

90. With regard to the impacts of underwater noise, while a large amount of research has been carried out, significant questions require further study, including characteristics of major sound sources, trends in the prevalence and magnitude, as well as the intensity and spatial distribution, of underwater noise and the potential impacts of underwater noise on ecosystems and animal populations.¹⁵⁷ A number of forums are working to address the impacts of underwater noise, including by adopting noise-mitigation measures such as the IMO-approved guidelines for the reduction of underwater noise from commercial shipping.¹⁵⁸ Similarly, practical guidance and toolkits to minimize and mitigate the significant adverse impacts of anthropogenic underwater noise on marine and coastal biodiversity are being considered under the Convention on Biological Diversity.¹⁵⁹ Cross-sectoral coordination on the issue continues to take place.¹⁶⁰

E. Management tools

91. The Convention recognizes that the problems of ocean space are closely interrelated and need to be considered as a whole. Increasingly, consideration is being given to integrating various sector-based management tools (see paras. 82-90 above) in broader management planning which take into account human reliance on, and interactions with, marine ecosystems, with a view to achieving sustainable development. This trend is likely to foster greater cross-sectoral cooperation and coordination.

92. *Environmental impact assessments and strategic environmental assessments.* By providing policymakers with the necessary scientific information, environmental impact assessments and strategic environmental assessments play an important role in balancing the need for economic development with the protection and preservation of the marine environment. In that regard, the Convention requires States, when they have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, to assess the potential effects of such activities on the marine environment as far as practicable. Guidance to promote

¹⁵⁵ IMO contribution.

¹⁵⁶ Contribution of the Secretariat of the Basel, Stockholm and Rotterdam Conventions.

¹⁵⁷ UNEP/CBD/SBSTTA/18/L.7.

¹⁵⁸ IMO document MEPC.1/Circ.833.

¹⁵⁹ UNEP/CBD/SBSTTA/18/L.7. See also UNEP/CBD/MCB/EM/2014/1/2.

¹⁶⁰ AC20/Doc.3.2.1.b (S).

the undertaking of environmental impact assessments in respect of various activities in the marine environment is increasingly being provided through technical studies¹⁶¹ and regulatory measures.¹⁶² In the context of its work on the preparation of draft regulations for exploitation in the Area, the International Seabed Authority is also expected to continue considering the issue.¹⁶³

93. *Integrated and ecosystem approaches.* Integrated and ecosystem approaches to the management of oceans and seas can take different forms, such as integrated coastal zone management and marine spatial planning initiatives. The latter are also expanding¹⁶⁴ and are increasingly seen as a means to maintain wider ecosystem services and achieve sustainable blue growth (see paras. 44-47 and 67 above).¹⁶⁵ However, in light of the difficulties in translating marine spatial planning principles into practice,¹⁶⁶ an increasing number of activities have focused on the compilation of experience in the application of marine spatial planning and the development of guidance and toolkits for its implementation.¹⁶⁷ For example, an expert workshop under the Convention on Biological Diversity, to be held in September 2014, is expected to consider practical guidance and a toolkit for marine spatial planning.¹⁶⁸

94. Ecosystem-based management has been incorporated into the 66 large marine ecosystems, where both ecosystem productivity and negative human impacts are high (see paras. 47, 62 and 82 above).¹⁶⁹ The effects of climate change on large marine ecosystem productivity, resilience and governance will be addressed at the Third Global Conference on Large Marine Ecosystems, in October 2014.¹⁷⁰ The Transboundary Waters Assessment Programme of the Global Environment Facility, in cooperation with the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), is conducting a global comparative baseline assessment of environmental conditions within large marine ecosystems (see paras. 118 and 122 below), which is expected to be completed by the end of 2014.¹⁷¹ Taking a basin-wide approach where

¹⁶¹ Contribution of the South Pacific Applied Geoscience Commission.

¹⁶² Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

¹⁶³ [ISBA/20/C/L.10](#) and [ISBA/20/C/13](#).

¹⁶⁴ UNEP/CBD/SBSTTA/18/INF/23.

¹⁶⁵ FAO indicated in its contribution that, by supporting an integrated approach and ecosystem approaches, Blue Growth could foster and sustain the contribution of oceans, seas and coasts to food security, nutrition and decent employment for future generations.

¹⁶⁶ UNEP/CBD/SBSTTA/18/INF/23.

¹⁶⁷ See, for example, UNEP (DEPI) RS.15/WP.5.RS (available from www.unep.org/regionalseas/) and UNEP/CMS/StC41/8 (available from www.cms.int/dugong/). See also Marine Spatial Planning in Practice Technical Meeting, 6-8 May 2014, at <http://bluesolutions.info/marine-spatial-planning-practice-technical-meeting/>.

¹⁶⁸ Contribution of the Secretariat of the Convention on Biological Diversity. See www.cbd.int/doc/?meeting=MCBEM-2014-04. See also UNEP/CBD/SBSTTA/18/L.7.

¹⁶⁹ IOC/BRO/2013/3 rev.

¹⁷⁰ See www.benguelacc.org/index.php/en/component/rseventspro/event/1-global-lme-conference. See also K. Sherman, "Toward ecosystem-based management (EBM) of the world's large marine ecosystems during climate change", *Environmental Development* (2014).

¹⁷¹ Appendix 18 to the Transboundary Waters Assessment Programme Full-sized Project.

management of the large marine ecosystem is linked to the large river systems is gaining prominence.¹⁷²

95. Work is also continuing to support the practical implementation of the ecosystem approach to fisheries, including the development of a toolbox for its practical implementation,¹⁷³ and support for the development of national and regional management plans.¹⁷⁴

96. In recognition of the useful role biosphere reserves can play in facilitating integrated management, the application of ecosystem approaches and achieving sustainable development, recent efforts have focused on providing for greater integration of development issues into a number of existing marine biosphere reserves.¹⁷⁵

97. *Area-based management tools.* Marine protected areas, ranging from areas with full protection to areas where activities are allowed and regulated, continue to be established in various regions, currently representing approximately 2.8 per cent of the world's oceans.¹⁷⁶

98. While the designation of marine protected areas is accelerating, extrapolations suggest that, at the current rate of growth, the Aichi Target of conserving at least 10 per cent of coastal and marine areas by 2020 will not be reached.¹⁷⁷ In addition, studies indicate that inadequate management of marine protected areas remains widespread.¹⁷⁸ However, where well-enforced and combined with threat-specific management measures, such as those addressing land-based pollution, marine protected areas have been effective in rebuilding reef-fish stocks and helping corals to recover after bleaching.¹⁷⁹ Strengthening the management effectiveness of existing marine protected areas and simultaneously addressing the underlying causes of marine environment degradation are therefore considered crucial.¹⁸⁰ In order to ensure the effectiveness of such tools with regard to migratory species, the habitats of which are becoming increasingly fragmented, protection throughout the migratory pathways, including through transboundary protected area systems, is being considered in the context of the Convention on the Conservation of Migratory Species of Wild Animals.¹⁸¹

99. At the regional level, consideration has also been given to area-based management tools,¹⁸² including in the context of the Commission for the

¹⁷² Global Environment Facility, *International Waters — Delivering Results* (2012).

¹⁷³ See www.fao.org/fishery/eaf-net/topic/166272/en.

¹⁷⁴ FAO contribution. See also contributions of the Northwest Atlantic Fisheries Organization and NEAFC.

¹⁷⁵ International Coordinating Council of the Man and the Biosphere (MAB) Programme, twenty-sixth session, final report, SC-14/CONF.226/15.

¹⁷⁶ See www.protectplanetocan.org/official_mpa_map.

¹⁷⁷ UNEP/CBD/SBSTTA/18/2.

¹⁷⁸ Ibid.

¹⁷⁹ UNEP/CBD/SBSTTA/18/INF/2.

¹⁸⁰ Management effectiveness was one of the issues discussed by the Third International Marine Protected Area Congress held in October 2013. See www.impact3.org/en/. See also footnote 117 above.

¹⁸¹ UNEP/CMS/ScC18/Doc.10.3/Rev.3/Annex.

¹⁸² For information on IMO regional meetings relating to particularly sensitive sea areas and other IMO tools for area-specific management, see, for example, MEPC 66/INF.2 and IMO news, 15 July 2014.

Conservation of Antarctic Marine Living Resources¹⁸³ and the Northwest Atlantic Fisheries Organization.¹⁸⁴ NEAFC and the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission) formally adopted the collective arrangement on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North-East Atlantic.¹⁸⁵

100. *Market-based approaches.* There is growing support for using market-based measures to induce people to take account of the environmental costs of their behaviour. Among such tools, “payments for ecosystem services” provide a mechanism through which the beneficiaries of an ecosystem service compensate the providers. Given that payments for ecosystem services are increasingly being adopted, FAO intends to provide an overview of the theory and practice of payments for ecosystem services along with an analysis of their appropriateness and feasibility as part of the fisheries and aquaculture management toolbox within the ecosystem approach to fisheries and aquaculture.¹⁸⁶

VI. Addressing the impacts of climate change and ocean acidification on oceans and their resources

101. The 2013 and 2014 reports of the Intergovernmental Panel on Climate Change offer a substantial amount of information on the current scientific understanding of the effects of climate change on the oceans, the essential role of the oceans in the carbon cycle and ocean acidification, as well as an assessment of impacts, adaptation and vulnerability.

102. Noting that the atmosphere and oceans have warmed, sea level has risen, and the concentrations of greenhouse gases have increased both in the atmosphere and in the oceans, the Intergovernmental Panel on Climate Change indicates that ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90 per cent of the energy accumulated between 1971 and 2010.¹⁸⁷ As a result of ocean warming and ocean thermal expansion, the rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia. Additionally, the ocean has absorbed about 30 per cent of the emitted anthropogenic carbon dioxide, causing ocean acidification.¹⁸⁸ In this regard, the need for further coordinated, worldwide information-gathering on ocean acidification and its impacts has been widely recognized, including by the General Assembly,¹⁸⁹ and several efforts are under way to collect scientific information on the subject.¹⁹⁰

¹⁸³ Contribution of the Commission for the Conservation of Antarctic Marine Living Resources.

¹⁸⁴ Contribution of the Northwest Atlantic Fisheries Organization.

¹⁸⁵ FAO, NEAFC and OSPAR Commission contributions.

¹⁸⁶ FAO contribution.

¹⁸⁷ Intergovernmental Panel on Climate Change, “Summary for policymakers” in *Climate Change 2013: The Physical Science Basis — Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.

¹⁸⁸ Ibid.

¹⁸⁹ General Assembly resolution 68/70.

¹⁹⁰ See, for example, the work of the Ocean Acidification International Coordination Centre at www.iaea.org/ocean-acidification/page.php?page=2181. See also WMO contribution. The Secretariat of the Convention on Biological Diversity has also prepared an updated synthesis of the impacts of ocean acidification on marine biodiversity (UNEP/CBD/SBSTTA/18/INF/6).

103. The report also observes that continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Hence substantial and sustained reductions of greenhouse gas emissions will be required in order to limit climate change.¹⁹¹ It is predicted that the oceans will continue to warm during the twenty-first century and heat will penetrate from the surface to the deep ocean and affect ocean circulation.¹⁹² Global mean sea level is also expected to continue to rise and the rate of sea level rise is likely to exceed that observed during the period 1971-2010, owing to increased ocean warming and increased loss of mass from glaciers and ice sheets. While sea level rise is not anticipated to be uniform, it is considered likely that sea level will rise in more than 95 per cent of the ocean space by the end of the twenty-first century. Furthermore, the continued uptake of carbon by the oceans is projected to increase ocean acidification. Increased CO₂ emissions not only pose substantial risks to marine ecosystems, especially polar ecosystems and coral reefs, but also have potentially detrimental consequences for fisheries and livelihoods.¹⁹³ Owing to the long-time scales of heat transfer from the ocean surface to the depths, it is anticipated that ocean warming, sea level rise and ocean acidification will also continue beyond 2100.¹⁹⁴

104. Efforts to increase the scientific understanding of these impacts are ongoing in a number of organizations.¹⁹⁵ The Informal Consultative Process considered the impacts of ocean acidification on the marine environment in 2013.¹⁹⁶ Since increased levels of CO₂ in the atmosphere contribute to both climate change and ocean acidification,¹⁹⁷ current and future action to reduce CO₂ emissions would also tackle the causes of ocean acidification. In that context, and in view of the current scientific understanding of the role of oceans in the carbon cycle and as a regulator of climate, it is important to consider how the relevant policy and regulatory frameworks interlink, including with a view to informing the current discussions on the future climate change regime.¹⁹⁸ From a scientific perspective, the links are increasingly being made, as witnessed by the establishment of the Ocean and Climate Platform 2015 by IOC. The Platform is intended to inform discussions at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in November 2015, on the interaction between greenhouse gas emissions, climate change and ocean acidification.¹⁹⁹

¹⁹¹ Intergovernmental Panel on Climate Change, “Summary for policymakers” (see footnote 187 above).

¹⁹² Ibid.

¹⁹³ Intergovernmental Panel on Climate Change, *Climate Change 2014: Impacts, Adaptation, and Vulnerability; Summary for Policymakers* (http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf). See also A/69/71.

¹⁹⁴ Intergovernmental Panel on Climate Change, *Climate Change 2014* (see footnote 193 above).

¹⁹⁵ For example, the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention on Biological Diversity and the Subsidiary Body for Scientific and Technological Advice of the United Nations Framework Convention on Climate Change. See also IOC contribution.

¹⁹⁶ A/68/159.

¹⁹⁷ General Assembly resolution 68/70. See also A/68/159; E. Harrould-Kolieb and D. Herr, “Ocean acidification and climate change: synergies and challenges of addressing both under the UNFCCC”, *Climate Policy*, No. 12 (2012), pp. 378-389; and D. Herr and others, *Ocean Acidification: International Policy and Governance Options* (Gland, Switzerland, IUCN, 2014).

¹⁹⁸ Articles 192, 212 and 222 of the United Nations Convention on the Law of the Sea, as well as article 2 of the United Nations Framework Convention on Climate Change, are recalled.

¹⁹⁹ IOC contribution.

A. Mitigating the impacts of climate change

105. *Greenhouse gas emissions.* Ocean-related sectors, for example shipping and fishing, have worked for a number of years towards developing sectoral energy-efficiency measures with a view to reducing their greenhouse gas emissions.

106. International shipping emitted an estimated 870 million tons, or about 2.7 per cent of the global man-made CO₂ emissions, in 2007. A study for an updated greenhouse gas emissions estimate for international shipping is expected to be completed by IMO in October 2014.²⁰⁰ With an initial focus on data collection, IMO discussed in April 2014 a framework for the collection and reporting of data on fuel consumption of ships, and worked on technical and operational measures relating to energy-efficiency measures for ships.²⁰¹ It also adopted amendments to MARPOL annex VI, to extend the application of the energy efficiency design index to additional types of vessels, as well as guidelines on the method of calculation of the attained energy efficiency design index for new ships.²⁰²

107. With a view to understanding and reducing the fishing sector's greenhouse gas emissions, FAO developed a fuel saving manual for small-scale fishing vessels.²⁰³ Case studies on reducing greenhouse gas emissions in aquaculture include improving food conversion ratios in tilapia, carp, catfish and salmon systems.²⁰⁴

108. *Marine geo-engineering.* Methods that aim to deliberately alter natural systems to counter climate change, termed geo-engineering, have been the subject of study and policy discussions for a number of years. Marine geoengineering, including ocean fertilization,²⁰⁵ is now regulated under the 2013 amendments to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972. All ocean fertilization activities, other than those specifically referred to in the new annex 4, shall not be permitted. An ocean fertilization activity may only be considered for a permit if it is assessed as constituting legitimate scientific research taking into account any specific placement assessment framework.

109. With a view to the establishment of an international assessment mechanism for geoengineering research and applications through the United Nations system, WMO and other partners are working on the formulation of a geoengineering position based on current scientific understanding. They will propose research actions to strengthen the scientific-basis to better inform decisions, including a possible United Nations -wide framework to govern these activities.²⁰⁶

²⁰⁰ IMO contribution.

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ O. Gulbrandsen, "Fuel savings for small fishing vessels — a manual" (Rome, FAO, 2012).

²⁰⁴ FAO contribution.

²⁰⁵ Under a new annex 4 on marine geoengineering, ocean fertilization is defined as "any activity undertaken by humans with the principal intention of stimulating primary productivity in the oceans. Ocean fertilization does not include conventional aquaculture, nor mariculture, nor the creation of artificial reefs".

²⁰⁶ WMO contribution.

B. Adapting to the impacts of climate change

110. In its assessment of impacts, adaptation and vulnerability, the Intergovernmental Panel on Climate Change noted the risks of death, injury, ill-health, or disrupted livelihoods in low-lying coastal zones and small island developing States (see paras. 113 and 114 below) and other small islands, owing to submergence resulting from sea-level rise, storm surges, coastal flooding and coastal erosion. It also noted the risk of loss of marine and coastal ecosystems, biodiversity and the ecosystem goods, functions and services provided to coastal livelihoods, especially for fishing communities in the tropics and the Arctic.²⁰⁷ The population and assets projected to be exposed to such risks, as well as human pressures on coastal ecosystems, will increase significantly in the coming decades due to population growth, economic development, and urbanization.

111. Since the impacts of, and risks related to, climate change can be reduced and managed through adaptation, climate services and warning systems, a number of organizations continue to be engaged in identifying strategies and coastal adaptation measures and developing climate services and warning systems, including through cross-sectoral cooperation.²⁰⁸

VII. Supporting small island developing States and landlocked developing States

112. With two major events in 2014, the special needs and interests of small island developing States and landlocked States are a particular focus of the international community's attention, including with a view to ensuring that those States are able to benefit from the sustainable development of the oceans and seas.

Small island developing States

113. The special situation and needs of small island developing States is being recognized through the proclamation of 2014 as the International Year of Small Island Developing States.²⁰⁹ Small island developing States are considered extremely vulnerable to natural disasters, climate change and sea level rise, which is expected to result in loss of land along the coastlines of low lying islands. Small island developing States also face numerous challenges in terms of their economic development owing, inter alia, to disadvantages linked to their small size²¹⁰ and remoteness from markets. Recently, however, there has been growing recognition that while the ocean that surrounds them is the primary source for these disadvantages and inherent vulnerabilities, it also presents opportunities upon which they can develop sustainable ocean-based economies,²¹¹ provided challenges related to monitoring, control and surveillance are overcome and other capacity needs are

²⁰⁷ Intergovernmental Panel on Climate Change, *Climate Change 2014* (see footnote 193 above).

²⁰⁸ FAO, IOC and WMO contributions.

²⁰⁹ General Assembly resolution [67/206](#).

²¹⁰ The exclusive economic zones of the vast majority of small island developing States are larger than their terrestrial areas.

²¹¹ Contribution of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

addressed.²¹² The importance of oceans and seas for small island developing States is recognized in the draft outcome document of the third International Conference on Small Island Developing States, convened in Apia from 1 to 4 September 2014 (A/CONF.223/3).²¹³ A number of events focusing on the importance of oceans and seas for small island developing States were scheduled to take place during the Conference,²¹⁴ including a multi-stakeholder partnership dialogue on oceans and seas and biodiversity, at which a UN-Oceans statement would be delivered by the United Nations Legal Counsel as focal point for UN-Oceans, as well as a private sector partnerships forum featuring fisheries and marine resources as a key area of focus.²¹⁵

114. Given the particular concern arising from climate change (see paras. 101 and 111 above) for small island developing States, urgent action was called for by the Alliance of Small Island States at the international climate talks held in June 2014, including in the form of scaled-up and long-term financial support for mitigation and adaptation to the adverse effects of climate change, as well as the incorporation of loss and damage elements in the outcome document of the twentieth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, to be held in Lima in December 2014.²¹⁶

Landlocked developing countries

115. Part X of the Convention provides for the right of access by landlocked States to and from the sea, and freedom of transit. Landlocked States, and in particular landlocked developing countries, are highly dependent on transit countries for seaborne trade. In this regard, the full participation of landlocked developing countries in international trade continues to be negatively impacted by high trade transaction costs, as well as inadequate physical transport infrastructure.²¹⁷ The 2003 Almaty Programme of Action has had a positive impact in several areas to improve the ability of landlocked developing countries to participate in international trade, including through the development of transit policies. Even though relevant international, regional and subregional agreements and conventions, which are the main vehicles by which the harmonization, simplification and standardization of rules and documentation can be achieved, have been established, their ratification and effective implementation by the landlocked developing countries and neighbouring countries has been slow.²¹⁸ Bilateral agreements remain the predominant tool for road transport transit facilitation.²¹⁹ The 10-year Review Conference on the Implementation of the Almaty Programme of Action, to be held in November 2014, is expected to build a development agenda that can enable landlocked developing countries to integrate better into the global trading system

²¹² See, for example, contribution of the South Pacific Applied Geoscience Commission. See also Mauritius statement at www.sids2014.org/index.php?type=6&menu=1490&page=view&nr=33.

²¹³ See www.sids2014.org/index.php?menu=1537.

²¹⁴ See www.sids2014.org/index.php?menu=1548.

²¹⁵ See <http://unohrrls.org/private-sector-partnerships-forum-2014-sids-conference/>.

²¹⁶ See <http://aosis.org/for-immediate-release-14-june-2014-small-islands-lay-out-priorities-ahead-of-lima/>.

²¹⁷ A/68/157.

²¹⁸ Contribution of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

²¹⁹ Ibid.

and move closer to achieving the internationally agreed development goals in the coming decade.²²⁰

VIII. Developing marine science and marine technology

116. Marine science is important for eradicating poverty and contributing to food security and the sustainable development of the oceans and seas. Science and technology play a key role in improving knowledge about the oceans as well as the oceans and atmosphere interface (see paras. 101-104 above), ultimately contributing to understanding and better managing human interactions with marine ecosystems, as well as helping predict and respond to natural events. The Convention sets out a comprehensive framework for the conduct of marine scientific research and dissemination of resulting data and information (Part XIII). It also provides for the development and transfer of marine technology (Part XIV).

117. In “The future we want”, Member States recognized the importance of science-based assessments (see paras. 118 and 122 below) and committed themselves to engaging and investing, including through international cooperation, in science, innovation and technology.²²¹ Ensuing discussions on sustainable development goals have also highlighted the importance of regional and international cooperation on and access to science, technology and innovation.

118. Cooperation and coordination are prerequisites for enabling sustained and large-scale research projects, which are costly and logistically difficult to carry out. In that regard, cooperation programmes are also beneficial in terms of building the national capacity of developing countries, in particular the least developed countries and small island developing States (see paras. 113 and 114 above), in marine science. The need to build capacity in marine science and marine scientific research ranging from awareness-raising to human resource development and legal, institutional and technical infrastructure development has been consistently recognized by the international community.²²² Furthermore, with regard to marine assessments, the eight workshops in support of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-Economic Aspects,²²³ have identified the needs of States in contributing to and benefiting from the Regular Process, as well as information gaps.²²⁴

119. While a number of technical assistance activities in marine science are ongoing (see para. 129 below),²²⁵ challenges to realizing the full potential and scope of marine science and technology remain. Apart from the high financial costs of many marine science activities, there is also a lack of cohesion among particular disciplines. This has led to differences in concepts, definitions, data collection and processing practices and caused significant challenges and limitations in the

²²⁰ Ibid.

²²¹ [A/CONF.223/3](#).

²²² [A/65/164](#) and General Assembly resolution [66/288](#). See also the Johannesburg Plan of Implementation and Agenda 21 of the United Nations Conference on Environment and Development.

²²³ See www.un.org/Depts/los/global_reporting/global_reporting.htm.

²²⁴ During these workshops, the need for technical workshops on capacity-building for integrated assessments was recognized and follow-up workshops, organized by UNEP and IOC, have taken place since. See [A/69/77](#).

²²⁵ [A/65/69](#) and [A/65/164](#).

production of aggregated, integrated and coherent statistics and indicators for oceans and seas.²²⁶ In response to the need for access to more multidisciplinary and integrated datasets,²²⁷ the European Union-funded iMarine initiative aims to develop data infrastructure enabling new forms of scientific data sharing and multidisciplinary collaborative science.²²⁸ This is particularly significant as new automated data collection systems are providing an unprecedented data stream.²²⁹

120. Other challenges relate to data gaps regarding, inter alia, species diversity, ecology, abundance and seasonality, the distribution patterns of highly migratory and pelagic species and ecological connectivity between coastal areas and open-ocean and deep-sea areas and within marine ecosystems, and limited information on certain features, such as seamount clusters and hydrothermal vents.²³⁰ Limited scientific information about the provision and use of most ecosystem services in some areas of the oceans, in particular areas beyond national jurisdiction, including the quantity and nature of those services, also presents a challenge to sound decision-making.²³¹ In that regard, a number of initiatives are increasingly looking at the economic valuation of marine ecosystems services, such as The Economics of Ecosystems and Biodiversity for Oceans and Coasts.²³² In addition, while data and information appear to be shared much more widely, including through free and open access initiatives, much remains inaccessible to many States owing to lack of capacity.²³³

121. Despite ongoing challenges, the last decade has seen an increasing number of multidisciplinary cooperative projects in marine science and technology for sustainable development,²³⁴ including, for example, work towards developing a strategy and roadmap to equip new submarine cables with sensors to create a global network for continuous real-time data collection for ocean and climate monitoring and disaster warning.²³⁵ Other projects include the Second International Indian Ocean Expedition,²³⁶ the International Polar Partnership Initiative,²³⁷ the MIDAS — (Managing Impacts Of Deep-Sea Resource Exploitation) project²³⁸ and the International Ocean Discovery Program, which looks into climate and ocean change, among other phenomena.²³⁹

²²⁶ See the contribution of the Department of Economic and Social Affairs of the Secretariat regarding the application of the System of Environmental-Economic Accounting Central Framework to oceans and seas.

²²⁷ IOC, *Strategic Plan for Oceanographic Data and Information Management (2013-2016)* (Paris, UNESCO, 2013).

²²⁸ FAO contribution.

²²⁹ IOC, *Strategic Plan* (see footnote 227 above).

²³⁰ UNEP/CBD/SBSTTA/18/4.

²³¹ A.D. Rogers and others, *The High Seas and Us* (see footnote 72 above).

²³² See www.teebweb.org/areas-of-work/biome-studies/teeb-for-oceans-and-coasts/.

²³³ UNEP/CBD/SBSTTA/18/2.

²³⁴ See also Future Earth (www.futureearth.info/), which aims to be an international hub to coordinate new, interdisciplinary approaches to research. Future Earth's projects with a marine and coastal focus include "Integrated marine biogeochemistry and ecosystem research", "Land-ocean interactions in the coastal zone" and "Surface ocean-lower atmosphere study".

²³⁵ ITU-WMO-IOC Joint Task Force, 2013 annual report (available from www.itu.int/). See also WMO contribution.

²³⁶ See http://iocperth.org/IOCPerth/index.php?option=com_content&view=article&id=64&Itemid=57.

²³⁷ See www.internationalpolarinitiative.org/.

²³⁸ See www.eu-midas.net/.

²³⁹ See iodp.org/index.php.

122. Furthermore, to achieve sustainable development and to reflect the increasing awareness of the need for a stronger science and policy interface and global marine assessments, a number of initiatives have been established.²⁴⁰ These include the Regular Process, under which, despite persistent ongoing funding issues,²⁴¹ the first global integrated assessment of the state of the marine environment, including socioeconomic aspects (World Ocean Assessment) will be considered by the General Assembly in 2015. As a contribution to marine assessments, both the technology and methods for mapping the seafloor have undergone significant change²⁴² to include, for example, the release of a World Ocean Database²⁴³ and mapping outputs presenting global seafloor geomorphic features.²⁴⁴

123. With a view to mapping and evaluating the human and institutional capacity of States in terms of marine scientific research, observations and data/information management, IOC is developing a global ocean science report, which would also provide an overview of the main fields of research interest, technological developments and capacity-building needs.²⁴⁵

124. In addition, in light of the critical role of technological capacity in achieving development and benefiting from the oceans and their resources, States are increasingly calling attention to the need for transfer of technology as provided for under the Convention. For example, transfer of technology is being discussed in the Ad Hoc Informal Working Group (see paras. 73 and 81 above)²⁴⁶ and in other forums.²⁴⁷ Furthermore, following up on the IOC Criteria and Guidelines on the Transfer of Marine Technology,²⁴⁸ IOC has continued to promote the transfer of marine technology through its capacity development activities. However, the capacity of many States in ocean sciences, especially small island developing States and States in Africa, is still inadequate or nascent, resulting in a limited ability to make the best use of the transfer of marine technology.²⁴⁹ With a view to addressing this issue, IOC has conducted a survey to identify capacity-development and transfer of technology needs.²⁵⁰

125. Advances in marine technology continue to be made (see paras. 19, 27, 48 and 57-60 above), driven by several factors such as pushing the boundaries of scientific enquiry, addressing environmental and cost-efficiency imperatives and progressing with the exploration and exploitation of natural resources. For example, progress is being made towards increased autonomy of underwater vehicles so that they will eventually work underwater for months or years at a time without the need for surface vessel support.²⁵¹ The expansion of unmanned vehicles and platforms

²⁴⁰ See, for example, www.ipbes.net/images/decisions/Decision%20IPBES_2_6.pdf.

²⁴¹ See http://legal.un.org/ola/media/info_from_lc/mss/speeches/MSS_AHWGW_fifth_meeting_31-Mar-2014.pdf.

²⁴² IOC/EC-XLVII/2.

²⁴³ See www.nodc.noaa.gov/OC5/WOD/pr_wod.html.

²⁴⁴ P. T. Harris and others, "Geomorphology of the oceans", *Marine Geology*, vol. 352 (June 2014), pp. 4-24.

²⁴⁵ IOC-XXVII/2 Annex 11, IOC/EC-XLVII/2 Annex 8 and IOC/EC-XLVII/3 prov. Pt. 2.

²⁴⁶ General Assembly resolution 66/231.

²⁴⁷ See <http://sustainabledevelopment.un.org/focussdgs.html> and [A/CONF.223/3](http://www.un.org/News/Press/docs/2013/A/CONF.223/3.html).

²⁴⁸ IOC/INF-1203.

²⁴⁹ IOC/EC-XLVII/2.

²⁵⁰ IOC/INF-1313.

²⁵¹ See <http://digitalmagazines.marinelink.com/nwm/MarineTechnology/201401>.

has been made possible by new materials, power sources and advances in computing. The growth in unmanned underwater vehicles is driving development of sensors, in particular lower power sensors that operate for longer periods.²⁵² Alongside their greater usage in underwater research and exploration,²⁵³ autonomous underwater vehicles are also starting to be used in inspection, repair and maintenance missions which may allow for significant improvements in safety, operating efficiency and expenditure.²⁵⁴

IX. Building the capacity of States to implement the legal regime for the oceans and seas

126. While an increasing number of States are turning their attention to oceans as providing opportunities for development, many States, especially small island developing States and States in Africa, still have limited capacity to effectively participate in activities related to, and to benefit from, oceans and their resources. Capacity-building is also essential in order to enable States to fully implement the Convention.²⁵⁵ The magnitude of needs and necessary interventions is becoming increasingly clear. However, the requirements and priorities for capacity development vary between and within regions. It is also noteworthy that the resources available to implement capacity-building activities are limited.²⁵⁶

A. Trends in capacity-building

127. Capacity-building activities during the reporting period have included the delivery of training to support implementation of existing instruments in a number of sectors; activities related to marine science and infrastructure development; and financial assistance to participate in intergovernmental meetings, examples of which are provided below and throughout the report.

128. With regard to implementation, activities have addressed, inter alia: fisheries;²⁵⁷ protection and preservation of the marine environment from shipping;²⁵⁸ waste management and recycling of ships;²⁵⁹ biodiversity;²⁶⁰ the regulation of offshore oil and gas activity;²⁶¹ seabed mining;²⁶² maritime security²⁶³ and dispute settlement.²⁶⁴

²⁵² See www.oceanologyinternational.com/RXUK/RXUK_OceanologyInternational/documents/Press%20release/REL%20UUVS%20Jan%20FIN.pdf?v=635267040319404408.

²⁵³ See A/68/71/Add.1, A/66/70 and A/65/69/Add.2.

²⁵⁴ See <http://digitalmagazines.marinelink.com/nwm/MarineTechnology/201401>.

²⁵⁵ General Assembly resolution 68/70.

²⁵⁶ IOC/EC-XLVII/2.

²⁵⁷ FAO contribution.

²⁵⁸ IMO contribution.

²⁵⁹ Basel, Rotterdam, Stockholm Conventions contribution.

²⁶⁰ Contribution of the Secretariat of the Convention on Biological Diversity. See also www.cites.org/eng/prog/shark/projects.php.

²⁶¹ OSPAR Commission contribution.

²⁶² Contribution of the South Pacific Applied Geoscience Commission.

²⁶³ Contribution of the Counter-Terrorism Committee Executive Directorate.

²⁶⁴ The International Tribunal for the Law of the Sea organized a regional workshop in Nairobi in August 2014.

129. In the area of marine science, capacity-building included activities related to data collection and information management,²⁶⁵ as well as scholarships for scientists.²⁶⁶

130. Other capacity-building activities included assistance with infrastructure, including early warning systems and hydrographic and nautical charting standards, products and services.²⁶⁷

131. Sustained financing to support ocean-related activities, including capacity-building initiatives, in support of the full implementation of the Convention is critical. The continued allocation of funding to projects relating to oceans and marine biodiversity through the sixth Global Environment Facility replenishment in April 2014²⁶⁸ is a welcome step in that regard. However, while the implementation by developing countries of a number of multilateral agreements adopted in recent years has benefitted from financial resources allocated through a specific financial mechanism as provided in such agreements, activities aimed at supporting the implementation of the Convention have largely remained dependent on voluntary contributions from States, intergovernmental organizations and donors, as well as bilateral cooperation. The situation has negatively affected the extent, scale and sustainability of the assistance the Division for Ocean Affairs and the Law of the Sea and others can provide to developing countries in support of the implementation of the Convention.

B. Capacity-building activities of the Division for Ocean Affairs and the Law of the Sea

1. Fellowships

132. The Hamilton Shirley Amerasinghe Memorial Fellowship on the Law of the Sea has trained 26 individuals from 26 Member States since its establishment. In 2014, Mariam Rita Fawole of Sao Tome and Principe was awarded the twenty-sixth fellowship for the period April-December 2014. Given the importance of the Fellowship and limited funding, an appeal is hereby made to Member States and others in a position to do so to contribute generously to the voluntary trust fund so as to enable the Secretariat to make additional awards.

133. The year 2014 marks the tenth anniversary of the establishment of the United Nations-Nippon Foundation Fellowship Programme. In the past 10 years, the Programme has trained 100 individuals from 60 Member States. Currently, 10 individuals from Brazil, Côte d'Ivoire, Grenada, the Islamic Republic of Iran, Madagascar, Malawi, Oman, Seychelles, Thailand and Uruguay are undertaking the Programme. Ten new awards will be made in the fourth quarter of 2014 for the new fellowship cycle commencing in the first quarter of 2015.²⁶⁹ Under the alumni fellowship programme component, a meeting of alumni from the Pacific Islands States was held in Suva in October 2013, hosted by the Pacific Islands Forum

²⁶⁵ Contributions of IOC and the International Commission for the Conservation of Atlantic Tunas. See also IOC/EC-XLVII/2.

²⁶⁶ Contribution of the Commission for the Conservation of Antarctic Marine Living Resources.

²⁶⁷ FAO, IMO and IHO contributions.

²⁶⁸ GEF/R.6/26.

²⁶⁹ See www.un.org/depts/los/nippon.

Secretariat. A meeting marking the tenth anniversary of the Fellowship Programme, bringing together all 100 alumni and academic partners, will be hosted by the Nippon Foundation of Japan in November 2014 in Tokyo.

2. Briefings and technical assistance

134. In 2013, at the request of the Government of Ecuador, the Division conducted a training course in Ecuador on article 76 of the Convention. The course was also attended by nationals of neighbouring States. The Division also provided a briefing for delegates on recent developments in ocean affairs and the law of the sea in collaboration with the United Nations Institute for Training and Research. It also organized a side event on the role of the Convention and its implementing agreements in sustainable development.²⁷⁰

135. The Trust Fund to Support Initiatives of States Countering Piracy off the Coast of Somalia approved a proposal from the Division aimed at increasing the understanding of the Convention by Somali parliamentarians and government officials and undertaking a gap analysis of the Somali legislative and policy framework for oceans.²⁷¹

136. The Division, in partnership with IOC, has been developing a training programme for developing coastal States and researching States responsible for and/or involved in the implementation of the provisions of the Convention on marine scientific research. The programme comprises training courses and an Internet course portal.

137. In addition, through participation in various meetings and workshops, the Division continued to provide information, advice and assistance to States and intergovernmental organizations with a view to promoting better understanding of the Convention and the related agreements, their wider acceptance, uniform and consistent application and effective implementation.

3. Trust funds

138. The Division continues to administer several voluntary trust funds as indicated in the annex to the present report. The Assistance Fund under Part VII of the United Nations Fish Stocks Agreement is administered jointly with FAO. In recent years, the demands on the trust funds have increased, as well as the number and duration of the activities for which assistance is being sought (see annex). The increase in applications and recipients has strained trust fund resources, as the number and size of voluntary contributions to these trust funds have decreased significantly. There is thus an acute need for contributions to ensure that the trust funds can continue to function.

X. Strengthening international cooperation and coordination

139. International cooperation is a fundamental underpinning of the achievement of the objectives of the Convention. In response to the consistent call by the General Assembly to improve cooperation and coordination at the national, regional and

²⁷⁰ See www.un.org/depts/los/convention_agreements/UNCLOS_sustain_dev.htm.

²⁷¹ Ibid.

global levels in accordance with the Convention, a number of mechanisms and activities have been initiated to facilitate or strengthen such cooperation and coordination. A noticeable trend over the past few years is that of increased cooperation and coordination between and among sectors and stakeholders both at the global and regional levels as shown throughout the present report.

140. At the global level, the Informal Consultative Process continues to facilitate the annual review by the General Assembly 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. At its fifteenth meeting, held in May 2014, the Informal Consultative Process focused its discussions on the role of seafood in global food security.²⁷² Pursuant to resolution 67/78, the General Assembly will further review the effectiveness and utility of the Consultative Process at its sixty-ninth session.

141. A wide range of topics continued to be addressed through regional cooperation, including in some cases from a cross-sectoral perspective (see paras. 73, 85, 90, 99, 109, 113 and 121 above). Such topics have included marine biodiversity, the impacts of climate change and natural disasters,²⁷³ pollution, including marine litter and plastics,²⁷⁴ management of ballast water and invasive alien species,²⁷⁵ protection of endangered species²⁷⁶ and contingency planning and oil spill preparedness.²⁷⁷ Other issues being increasingly addressed at the regional level include management tools such as ecosystem approaches²⁷⁸ and marine spatial planning.²⁷⁹ Assessments of the state of the marine environment at the regional level have continued to feed into the Regular Process (see paras. 118 and 122

²⁷² A/69/90.

²⁷³ For example, in the region of the North-West Pacific Action Plan (see www.nowpap.org/) and the Caribbean (http://caricom.org/jsp/pressreleases/press_releases_2014/pres174_14.jsp?null&prnf=1).

²⁷⁴ See the Helsinki Commission and OSPAR Commission contributions. Activities also took place in the regions of the North-West Pacific Action Plan (www.nowpap.org/) and the South Asia Cooperative Environment Programme (www.sacep.org/).

²⁷⁵ See Helsinki Commission and OSPAR Commission contributions. See also jointbwmemptions.org/ballast_water_RA; North-West Pacific Action Plan Atlas of Invasive Alien Species; Caribbean Invasive Alien Species Management Strategies Workshop at www.car-spaw-rac.org/?Invasive-Alien-Species-management; and Caribbean Marine Protected Area Management Network and Forum at www.cep.unep.org/content/about-cep/spaw.

²⁷⁶ See OSPAR Commission contribution; and Conservation Measure 10-05 (2013) of the Commission for the Conservation of Antarctic Marine Living Resources at www.ccamlr.org/en/measure-10-05-2013.

²⁷⁷ See http://www.blacksea-commission.org/_oilspill.asp. See also Helsinki Commission Recommendation 34E/3.

²⁷⁸ See Helsinki Commission contribution. See also Protection of the Arctic Marine Environment, Arctic Council concept paper at <http://www.pame.is/index.php/projects/ecosystem-approach/ea-documents-and-workshop-reports>.

²⁷⁹ See, for example, Helsinki Commission contribution. See also European Union Directive for Maritime Spatial Planning at http://ec.europa.eu/maritimeaffairs/policy/maritime_spatial_planning/index_en.htm; and Coordinating Body on the Seas of East Asia Workshop on Spatial Planning in the Coastal Zone — Disaster Prevention and Sustainable Development at www.cobsea.org/.

above).²⁸⁰ In some regions, work on regional ocean governance, sustainable development and blue growth²⁸¹ has also intensified.

142. For example, in January 2014, the African Union adopted the 2050 African Maritime Integrated Strategy and Plan of Action and established 2015 to 2025 as Africa's decade for the oceans. The Strategy provides a framework for regional strategies to address oceans issues such as fisheries, biodiversity, maritime crime and protection and preservation of the marine environment.²⁸² In addition, at the recent meeting of Contracting Parties to the Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention), a declaration recognizing the need for a blue print for ocean governance in Africa was adopted and a road map towards a pan-African summit on ocean governance under the auspices of the African Union and the African Maritime Integrated Strategy was discussed.²⁸³

143. Since its establishment in 1974, the UNEP Regional Seas Programme has been the catalyst for cooperative action in many regions of the world in relation to the protection and preservation of the marine environment and thus also supported the implementation of the Convention. On the occasion of its fortieth anniversary, UNEP engaged in a multi-stakeholder reflection aimed at identifying a long-term vision for the Programme, with a focus on key priorities.²⁸⁴

144. *UN-Oceans*. With a view to strengthening inter-agency cooperation and coordination, following the approval by the General Assembly of the revised terms of reference for UN-Oceans,²⁸⁵ UN-Oceans adopted a biennial work programme for 2014-2015. A major activity thereunder is the development of an inventory of mandates and activities of the members of UN-Oceans to facilitate the identification of possible areas for collaboration and synergy.²⁸⁶ Information on the activities of UN-Oceans was provided to the Informal Consultative Process in June 2014.²⁸⁷

XI. Conclusions

145. The trends and developments outlined in the present report show heightened awareness of the critical role of oceans and seas for climate regulation, food security, livelihoods, human well-being and more generally for the global economy. In this regard, the Convention, as the constitution for the oceans and supplemented

²⁸⁰ See also Helsinki Commission contribution and Mediterranean Integrated Monitoring and Assessment Programme by 2015.

²⁸¹ See Asia Conference on Oceans, Food Security and Blue Growth, 18-21 June 2013, Bali, Indonesia, at: <http://acofb2013.kkp.go.id/>; European strategy to support sustainable growth in the marine and maritime sectors at http://ec.europa.eu/maritimeaffairs/policy/blue_growth/index_en.htm; Baltic Sea agenda for sustainable blue growth; Revised Mediterranean Strategy for Sustainable Development; and Cape Town Declaration on Blue Growth in Africa.

²⁸² See <http://pages.au.int/maritime/documents/2050-aim-strategy-0>.

²⁸³ UNEP (DEPI)/WACAF/COP.11/9/Rev1, available from <http://cop11.abidjanconvention.org/>.

²⁸⁴ See Regional Seas Visioning Workshop, Geneva, Switzerland, 3 and 4 July 2014, at www.unep.org/regionalseas/globalmeetings/Visioning_Workshop/Visioning_RS_Workshop.asp.

²⁸⁵ General Assembly resolution 68/70.

²⁸⁶ See www.unoceans.org/fileadmin/user_upload/un oceans/docs/UN-Oceans_statement_to_ICP-15_for_website.pdf.

²⁸⁷ *Ibid.*, and A/69/90.

by other legal instruments, provides the essential legal basis for the peaceful and sustainable development of the oceans and seas.

146. Encouraging progress has been made towards implementing the legal regime for oceans and seas, in particular the Convention, including by the bodies established by the Convention. In several areas, global and regional instruments, accompanied in some cases by technical guidelines for their implementation and related management tools, have been adopted which give effect to the provisions of the Convention. There has also been increased activity to produce policy-relevant science and enhance the science-policy interface. International cooperation and coordination, including of a cross-sectoral nature, as well as capacity development activities have been further promoted.

147. Despite positive and encouraging developments, challenges remain. In some regions, maritime boundary disputes continue to pose a threat to peace and security or prevent exploration and exploitation of ocean resources. Hundreds of people continue to die at sea while escaping conflict zones or seeking a better livelihood. Criminal acts at sea continue to threaten lives and disrupt safe navigation and other economic activities. While progress has been made towards greater social and environmental sustainability and responsibility in certain sectors, some land- and sea-based activities continue to take their toll on the marine environment, with significant socioeconomic impacts. In this regard, knowledge of the state of the marine environment, including socioeconomic aspects, while improving, still remains limited. Where scientific information is available, it is not always accessible to decision-makers. Sometimes, development imperatives or the prospects of short-term economic gains outweigh the longer-term needs of sustainability. A number of pressures on the marine environment, which cumulatively affect the health and productivity of marine ecosystems, are compounded by the effects of increased CO₂ emissions, in particular ocean acidification.

148. Not all States Parties have been able to translate the rights set out in the Convention into tangible benefits. Economic uses of the oceans, in particular extractive activities, continue to be undertaken mainly by those who have the required capacity and technology. Small island developing States, landlocked developing States and African States, in particular, remain reliant on the support of the international community to fully benefit, in a sustainable manner, from the development opportunities offered by oceans and their resources.

149. These challenges point to the critical need for continued concerted efforts by all stakeholders and at all levels, as well as for full implementation of the legal regime for the oceans, as reflected in the Convention and the related implementing agreements, and of other relevant instruments. That regime, which delicately balances the imperatives of economic and social development with those of the protection and preservation of the marine environment and the conservation of marine living resources, provides the essential basis upon which ocean-based economies can be developed in a sustainable manner. The Convention also continues to be the foundation for safe and secure oceans. Given the increased attention to oceans, now more than ever the Convention continues to be the source of stability and legal certainty, which are critical to the economic and social advancement of people.

150. Central to the Convention as a whole is the balance of the enjoyment of rights and benefits with the concomitant undertaking of duties and obligations. Therefore, implementation of the Convention cannot be effected in a piecemeal fashion, since the provisions of the Convention form an integral package. As a result, much greater awareness among all relevant stakeholders of the regime in the Convention is necessary. Cross-sectoral cooperation and coordination are also required to ensure that various sectors develop in a manner that is supportive of the purpose and objectives of the Convention, and that the sectors work towards an integrated approach to the management of the oceans and seas. The role of the General Assembly in developing the necessary global policy guidance to that end continues to be significant.

151. Additional capacity development interventions, tailored to regional and national needs and priorities, including through North-South and South-South cooperation, are also essential for all States to benefit fully from the oceans and their resources and also to promote enhanced compliance with relevant instruments.

152. With a view to further enhancing the ability of the United Nations system to respond to the needs of Member States, the Secretary-General has continued to focus on strengthening system-wide coherence on ocean issues taking into account, in particular, the need for greater coordination and synergies in the delivery of the mandates entrusted to the Organization by Member States.

Annex

Status of voluntary trust funds administered by the Division for Ocean Affairs and the Law of the Sea (30 June 2013-31 July 2014)

<i>Voluntary trust funds</i>	<i>Countries that benefited from the trust fund during the reporting period</i>	<i>Countries that contributed to the trust fund during the reporting period</i>	<i>Fund balance estimate as at July 2014 (United States dollars)</i>
Voluntary trust fund for the purpose of facilitating the preparation of submissions to the Commission on the Limits of the Continental Shelf for developing States, in particular the least developed countries and small island developing States, and compliance with article 76 of the United Nations Convention on the Law of the Sea	N/A	Costa Rica	1 306 275.26
Voluntary trust fund for the purpose of defraying the cost of participation of the members of the Commission on the Limits of the Continental Shelf from developing States in the meetings of the Commission	Cameroon, Ghana, Kenya, Mexico, Mozambique, Nigeria, Pakistan, Trinidad and Tobago	China, Iceland, Ireland, Japan, Korea, and Mexico	671 084.15
Voluntary trust fund for the purpose of assisting developing countries, in particular least developed countries, small island developing States and landlocked developing States, in attending meetings of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea	Barbados, Brazil, Burkina Faso, Jamaica, Laos, Lesotho, Madagascar, Malaysia, Peru, Uganda, Vanuatu	New Zealand	35 441.82
Voluntary trust fund to assist States in the settlement of disputes through the International Tribunal for the Law of the Sea	Saint Vincent and the Grenadines	Finland	120 567.65
Voluntary trust fund for the regular process for global reporting and assessment of the state of the marine environment, including socioeconomic aspects	Group of experts: Argentina, Barbados, Brazil, Chile, China, Iran (Islamic Republic of), Jamaica, Kenya, Republic of Korea, Philippines, Sierra Leone, Uganda	China, Ireland, New Zealand, the Republic of Korea, and the United Kingdom	46 707.41
Voluntary trust fund for the United Nations Programme of Assistance in the Teaching, Study, Dissemination and Wider Appreciation of International Law — Hamilton Shirley Amerasinghe Memorial Fellowship	Sao Tome and Principe	Monaco, Slovenia	68 985.00

<i>Voluntary trust funds</i>	<i>Countries that benefited from the trust fund during the reporting period</i>	<i>Countries that contributed to the trust fund during the reporting period</i>	<i>Fund balance estimate as at July 2014 (United States dollars)</i>
Assistance Fund under Part VII of the United Nations Fish Stocks Agreement — implemented jointly with FAO ^a	Cook Islands, Iran (Islamic Republic of), Kiribati, Maldives, Micronesia, Namibia, Nauru, Niue, Samoa, Senegal, South Africa, Sri Lanka, Tonga, Tuvalu, Uruguay	N/A	104 195.00

Abbreviations: N/A, not applicable.

^a Data from FAO cover the period from 1 January to 31 December 2013.