Economic & Social Affairs

14 LIFE BELOW WATER

United Nations

Analysis of the voluntary commitments registered at or around the second United Nations Ocean Conference, including their impacts

ANALYSIS OF THE VOLUNTARY COMMITMENTS REGISTERED AT OR AROUND THE SECOND UNITED NATIONS OCEAN CONFERENCE, INCLUDING THEIR IMPACTS

NOTE:

This report was prepared by Dr. Marjo Kristina Vierros, Director, Coastal Policies and Humanities Research and Consultant for the United Nations Department of Economic and Social Affairs Division for Sustainable Development Goals. The views expressed in this report are those of the author and do not necessarily reflect those of the United Nations.

Cover photo: Taryn Schulz

Printed at the United Nations, New York

Executive summary

Voluntary commitments (VCs) were some of the major outcomes of both the first and the second United Nations Ocean Conferences, which took place in June 2017 and 2022, respectively. This analysis focuses on the 741 voluntary commitments VCs registered prior to the second United Nations Ocean Conference, covering a time period from 17 December 2021 to 6 November 2023. It follows two previous analyses undertaken in 2017 and 2020. This third analysis provides an opportunity to start observing trends in how the VCs have evolved over time and what kinds of impacts they have had over time.

The number of VCs registered at and around the second United Nations Ocean Conference is lower than the number registered during the first Conference, when 1,406 VCs were registered during the conference or immediately after it. This trend may indicate a lessening enthusiasm towards commitments. It may also represent a lingering effect of a slowdown in ocean action during the COVID-19 pandemic. The reporting percentage has also declined since 2020, from an already low 24 per cent to 10 per cent, making an analysis of impacts difficult. Despite these challenges, the commitments include 225 countries and were made by 532 distinct lead organizations, providing a rich representation of ocean-related activities that cover all targets for Sustainable Development Goal 14 (SDG 14), ocean basins and entity types.

Some notable trends in the VCs include an increasing participation by the private sector, which has now registered the fourth largest number of VCs after governments, non-governmental organizations (NGOs) and intergovernmental organizations (IGOs). The participation of philanthropic organizations has also increased in terms of monetary support provided to the implementation of SDG 14, and particularly target 14.5, although the actual number of VCs registered by them is low.

The VCs associated with target 14.1 were the most numerous of all SDG 14 targets, and they have been instrumental in raising awareness about plastic pollution in the marine environment. The ongoing negotiations for an international legally binding agreement to end plastic pollution (United Nations Environment Assembly (UNEA) resolution 5/14) continues to foster further VCs in this area, and currently 70 per cent of the VCs relating to target 14.1 address plastic pollution. This figure is larger than the 52 per cent in 2017. Once a plastic pollution treaty is agreed upon, the VCs will provide considerable experience towards its implementation, particularly regarding downstream and midstream actions, such as beach clean-ups and waste management strategies.

The VCs associated with targets 14.2 and 14.5 cover a variety of actions related to marine protection, management and restoration. Activities relating to marine and coastal restoration are increasing. Much of this can be accounted to the increased number of VCs that relate to coral reef restoration, driven by declines in reef health worldwide, and supported by advances in restoration practices. Several VCs also relate to mangrove and seagrass restoration. On marine protection, new marine protected areas (MPAs) have been declared and existing ones have been expanded in several countries, by countries collectively, and under at least two regional programmes. The

VCs also include examples of successful efforts in community-based marine management in several countries. As a new trend, and with the United Nations Agreement on Biodiversity beyond National Jurisdiction (BBNJ Agreement) now adopted, four VCs relate to the establishment of MPAs in areas beyond national jurisdiction. Supporting these efforts are new national ocean policies and ecosystem-based approaches, as well as additional financial assistance to ocean protection and management.

Global scientific efforts on ocean acidification (target 14.3) continue, with monitoring networks expanding to cover new areas, and with efforts to address gap areas in scientific understanding ongoing. Local response measures and adaptation plans are also being developed. The VCs related to ocean acidification had relatively lower funding levels collectively when compared with VCs associated with sustainable fisheries, marine protection and management.

Regarding sustainable fisheries (targets 14.4, 14.6 and 14.B), the largest categories of actions include fisheries science, information, capacity, training and technology. Many VCs also focused on improved fisheries management, sustainable seafood, and reducing illegal, unreported and unregulated fishing. Social sustainability in fisheries and human rights and decent work in fisheries were a new focus area of some commitments. VCs related to target 14.4 had the largest collective funding commitments of all SDG 14 targets. VCs related to SDG 14.B on small-scale fisheries included actions focused on poverty, improved livelihoods, alternative livelihoods and food security, and garnered much less funding that target 14.4. There is still a very limited number of VCs relating to target 14.6 on fisheries subsidies.

Sustainable ocean-based economies (target 14.7) continue to be a popular strategy for implementing SDG 14. While SDG 14.7 is specifically aimed at small island developing States and least developed countries, blue economy-related VCs were registered by all countries, both developing and developed. There has also been an emergence of some new sectors in this category, including blue foods and the blue bioeconomy, which have not been particularly prominent previously. Aquaculture is emerging as a prominent sector, with VC numbers second only to those relating to fisheries. VCs relating to renewable ocean energy and low carbon shipping are also more numerous than previously. On the other hand, tourism-related commitments are fewer than previously. Development of ocean-based economic sectors, ocean innovation, and plans and strategies towards sustainable blue economy transitions are common ways for all countries to implement SDG 14.

Ocean science-related VCs (SDG 14.A) had an increasing focus on ocean observation and monitoring, as well as science related to the deep sea. These VCs collectively expand the scientific knowledge of the deep sea, its ecological role, the impacts threatening it, its potential uses, and management approaches for its protection. With new ocean observation technologies becoming available, data collection is likely to get more automated and easier, with instrumentation being able to reach deeper depths. Both the number of science-related commitments, as well as the funding included towards such commitments have increased, likely as a result of the United Nations Decade of Ocean Science for Sustainable Development. VCs related to capacity-building in marine scientific research and technology transfer were also relatively numerous.

There have been many advancements under international law as reflected in the United Nations Convention on the Law of the Sea (SDG 14.C), including the historic adoption of the BBNJ Agreement. The BBNJ Agreement covers nearly two thirds of the ocean, and once in force, its effective implementation can help further SDG 14 in areas beyond national jurisdiction. Several VCs relate to aspects of the BBNJ Agreement, supported by the VCs related to deep sea research under SDG 14.A. There were also several commitments related to implementation of the Convention, including training and awareness-raising.

This iteration of VCs also contained several interesting solutions for financing ocean action. The VCs included blended finance, impact investment and a venture capital fund, all of which can provide lessons for the future. Several ocean-related funds have also provided considerable finance towards various aspects of SDG 14. The joining together of philanthropic organizations for more impactful ocean funding is a positive trend, which provides harmonization in funding and will eliminate duplication of effort.

The VCs collectively contained a considerable amount of funding towards the implementation of SDG 14, with the largest amounts of funding from governments, IGOs and philanthropic organizations. Of the VCs reporting on this aspect, actions towards sustainable fisheries, marine conservation, management and restoration collectively received the most funding, while ocean acidification, small-scale artisanal fisheries, implementation of international law and elimination of harmful fisheries subsidies received the least. These numbers may not be conclusive, given that only approximately one third of the VCs included amounts of funding, but they highlight the fact that some SDG 14 targets are relatively more underfunded than others.

There are still some areas that could be further enhanced, and where new VCs would be welcome, such as increased work on issues related to ocean equity, human-rights based approaches, broader participation of youth, women and marginalized groups, as well as the improved participation of Indigenous peoples. More VCs could explore transdisciplinary approaches to find solutions for problems related to ocean socio-ecological systems, and consider co-creating solutions with traditional knowledge holders for improved ocean management.

Finally, keeping track of the VCs and their implementation will be difficult without improved reporting. The reporting percentage has declined since the last analysis of VCs, and it is important that there is accountability associated with registering commitments. Without traceability and accountability, it is difficult to assess whether commitments are being achieved, and what their overall impact is, making ocean action ad hoc and piecemeal without the possibility of a more coherent strategy. While the inclusivity of the VCs has been extremely successful in attracting diverse and innovative commitments, many of which could be scaled up, it is time to consider how a more rigorous follow-up process could be initiated.

Contents

1. Introduction

Voluntary commitments (VCs) were one of the key outcomes of the first United Nations Ocean Conference in June 2017. These commitments, which were meant to advance the implementation of Sustainable Development Goal 14 (SDG 14), were initiatives voluntarily undertaken by a variety of stakeholders, and fostered inclusive engagement and contribution towards ocean action. An online registry was opened for the purposes of making the VCs accessible to everyone,[1] and to gain an overall understanding of their extent and scope. There were certain criteria that the commitments needed to follow. The commitments could be new initiatives or build on and expand existing initiatives. They should include means of implementation (such as finance or capacity-building) to ensure their long-term sustainability and be designed in accordance with SMART criteria. Any stakeholder could register a commitment, and by the time the 2017 Ocean Conference had ended, over 1,400 VCs had been registered in the secretariat's database. The online registry remains open, and further commitments have been registered in the time period prior to and after the second United Nations Ocean Conference that took place in Lisbon, Portugal, from 27 June to 1 July 2022.

There have been two previous analyses of the Conference VCs. The first one was undertaken immediately following the 2017 Ocean Conference,[2] while the second one was a part of the preparations for the second United Nations Ocean Conference, which took place in October 2020, and was published in early 2021.[3] At that time, there were 1,628 VCs in the online registry. Focusing on the impact of the VCs, the second assessment concluded that, based on the available information, the commitments have collectively furthered the attainment of SDG 14, particularly in terms of new and expanded marine protected areas (MPAs), in building momentum towards action on plastic pollution, expanding networks of cooperation in ocean science, and bringing new topics such as blue carbon and habitat restoration into the mainstream.

The present – and third–analysis focuses on commitments registered during the year around the second Conference, including the period immediately before the Conference, during it and following it. The dates of the commitments ranged from 17 December 2021 to 6 November 2023. They include all the VCs listed in the report of the second Conference, as well as, to the extent possible, commitments that were not registered but were announced from the floor during the conference.

Within the specified time period, a total of 741 VCs were added to the online registry, most of them immediately before, during or after the second Conference. This number is markedly lower than the number of VCs registered at the first Conference in 2017, when 1,406 commitments were registered either during the conference, or in the months immediately following it.[4] While the number of VCs is not necessarily a reflection of degree of implementation of SDG 14, it does provide an indication of the enthusiasm

[1] This registry is now located at https://sdgs.un.org/partnerships/action-networks/ocean-commitments.
[2] Vierros M., and Buonomo R. (2017). In-depth analysis of ocean conference voluntary commitments to support and monitor their implementation. Division for Sustainable Development, Department of Economic and Social Affairs, United Nations. Available at https://sustainabledevelopment.un.org/content/documents/17193OCVC_in_depth_analysis.pdf.
[3] United Nations (2021) Assessment of the Impacts of the United Nations Ocean Conference Voluntary Commitments – Sustainable Development Goal 14. Available at https://sdgs.un.org/sites/default/files/2022-01/DESA-Oceans-VCs.pdf.
[4] Vierros, M., and Buonomo, R. (2017). In-depth analysis of ocean conference voluntary commitments to support and monitor their implementation. Division for Sustainable Development, Department of Economic and Social Affairs, United Nations. Available at https://sustainabledevelopment.un.org/content/documents/17193OCVC_in_depth_analysis.pdf.

that various stakeholders have for registering commitments. It may also reflect the slowing down in ocean action during the COVID-19 pandemic. Regardless, the VCs included in this analysis provide a rich array of actions towards implementing SDG 14 at all levels from global to local, by a variety of stakeholders, and within all SDG 14 targets. Where impact can be assessed, they have made considerable progress towards a more sustainable ocean.

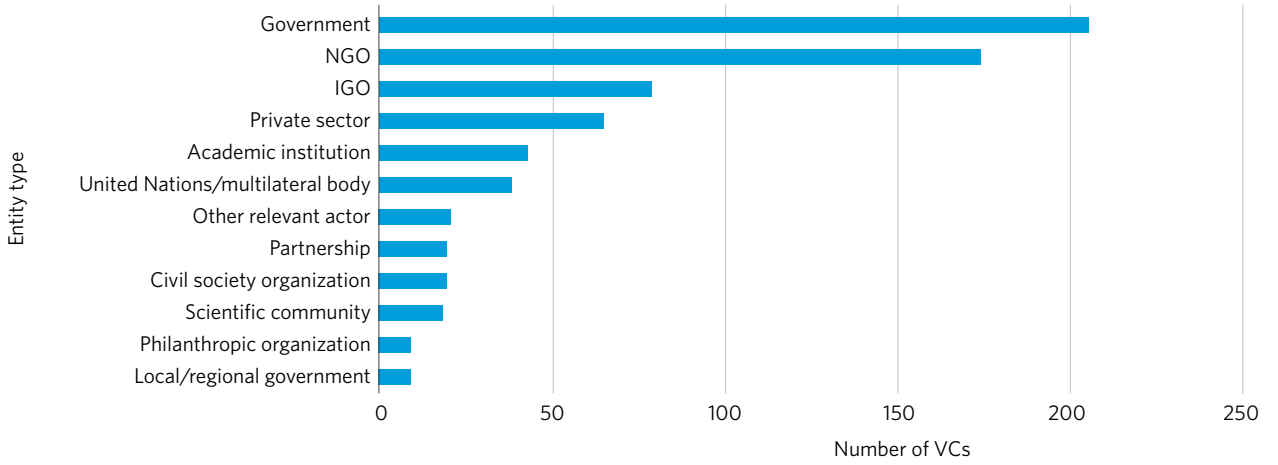
This analysis will first provide an overview of the voluntary commitments in their entirety and will then proceed to look at them in depth, grouped into thematic categories in accordance with SDG 14 targets. A discussion and conclusions are provided at the end.

2. Overview of the second United Nations Ocean Conference voluntary commitments

VCs by entity types

The entities registering commitments include Governments, United Nations/multilateral body, intergovernmental organizations (IGOs), non-governmental organizations (NGOs), civil society organizations, academic institutions, the scientific community, the private sector, philanthropic organizations, local/regional government, other relevant actors and partnerships. All of these entities registered VCs. However, governments made most of the commitments, followed by NGOs and IGOs. The smallest number of commitments were made by local and regional governments, and philanthropic organizations.

Figure 1
Entity types for all included VCs



The VCs included 225 countries and were made by 532 distinct lead organizations. The most common lead organizations can be seen in table 1, with the European Commission registering by far the most commitments, followed by the Government of Canada and the Food and Agriculture Organization (FAO).

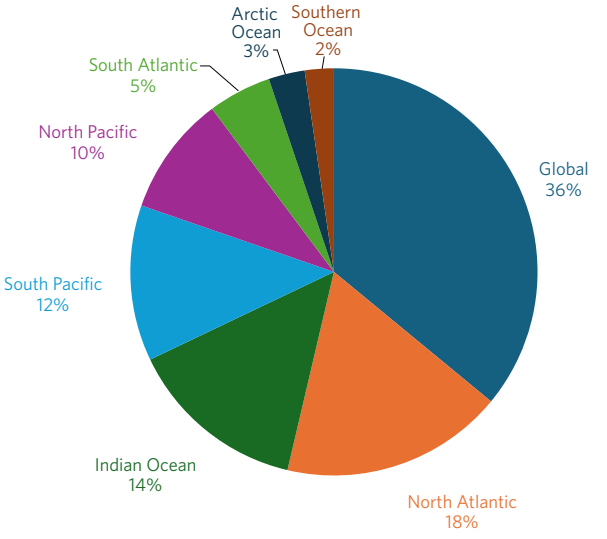
Table 1
The most common lead organizations in VCs.

Lead organization	Number of commitments
European Commission	51
Government of Canada	16
FAO	11
Norwegian Agency for Development Cooperation	9
Baltic Marine Environment Protection Commission	9
Ministry of Oceans and Fisheries, Republic of Korea	8
Norwegian Government	7
UNDP	7
Singapore	6
Maritime and Port Authority of Singapore	5
Whale and Dolphin Conservation	5
IMET-PNM (Italian Ministry of Ecological Transition – General Directorate for Natural Heritage and Sea)	5
Government of Finland, Ministry of the Environment	5
Indonesian Waste Platform	5
Grand total	**149**

VCs by ocean basin

The VCs covered all ocean basins, but the majority of the commitments (35.9 per cent) were global. The next most common were commitments related to the North Atlantic (17.7 per cent), the Indian Ocean (14.4 per cent), the South Pacific (12.4 per cent), the North Pacific (9.5 per cent), the South Atlantic (5 per cent), the Arctic Ocean (2.9 per cent) and the Southern Ocean (2.3 per cent). The polar oceans were underrepresented in the commitments, as was the South Atlantic. Given the size of the Pacific Ocean, it might have also been expected to attract a larger number of VCs.

Figure 2
VCs by ocean basin

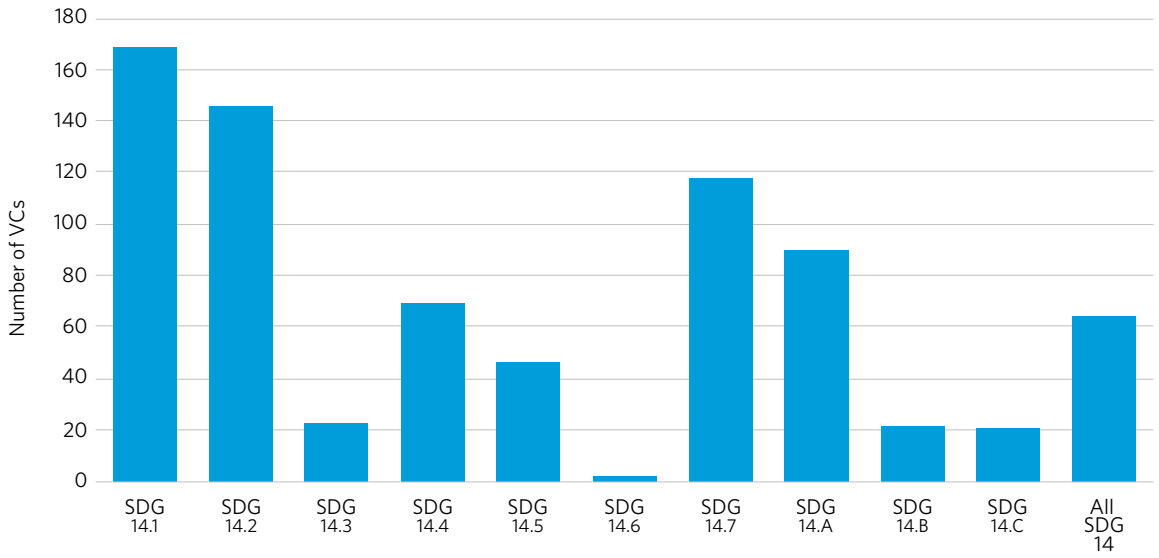


VCs by SDG 14 targets

Figure 3 demonstrates how SDG 14 targets are represented in the VCs. It should be noted here that the VCs were grouped only into the primary target category that their actions represented, with the caveat that many VCs included actions towards multiple targets. The analysis also contains an added category, that of "all SDG 14 targets", which groups those VCs that contain actions towards SDG 14 attainment in general, including all or most of its targets. This category also includes VCs that relate to awareness-raising and environmental education that has to do with ocean issues generally.

The largest number of VCs (169) were registered towards SDG 14.1 on marine pollution. SDG 14.2, which includes activities related to various aspects of marine management and restoration was next with 146 VCs, followed by SDG 14.7 on economic benefits to small island developing States and least developed countries from sustainable ocean uses. This so called "blue economy" target also contained actions that related to sustainable ocean-based economies, but did not include small island developing States or least developed countries as the target beneficiaries. The smallest number of targets were registered towards SDG 14.6 on reducing harmful fisheries subsidies.

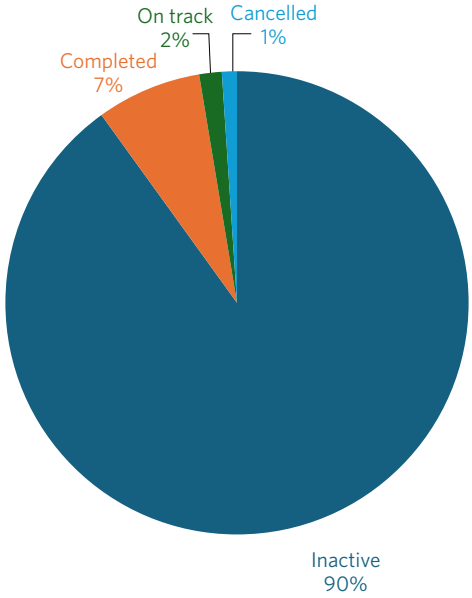
Figure 3
Representation of SDG 14 targets within VCs



Implementation status of VCs

The vast majority (90 per cent) of VCs are marked as "incomplete", meaning that they have not reported on their progress for over a year. Of the 10 per cent that have reported on their implementation status, 7 per cent have been completed, 2 per cent are on track and 1 per cent have been cancelled. This is an even lower reporting percentage than that in the previous VC assessment in 2020, where approximately 24 per cent of commitment holders reported on their progress. The lack of reporting makes it difficult to assess whether the commitments have achieved their intended goals, and what their impacts have been, individually or collectively, on ocean environments, ocean-dependent people, and the achievement of SDG 14 and other SDGs.

Figure 4
Inactive, completed, on track, and cancelled VCs (percentage)



3. Implementation of SDG 14 by thematic area

Marine Pollution (SDG 14.1)

Marine pollution includes chemical pollution, marine litter, microplastics and nutrient pollution, among others, and continues to impact marine ecosystems. Plastic pollution in the marine environment is increasing with increased plastic consumption. With up to 12.7 million tons of plastic pollution estimated to enter the ocean annually,[5] the amount of plastic in the ocean is predicted to reach 300 million tons by 2030.[6] Even the deepest trenches were found to have a considerable accumulation of plastics.[7] While most plastic pollution originates form land-based sources, lost and discarded fishing gear can form a large component of marine litter in some areas.[8]

Eutrophication, associated with increased nutrient loading, remains among the leading causes of water quality degradation and is a major threat to human sustainability worldwide. Eutrophication causes harmful algal blooms and deoxygenation, including dead zones, with impacts are exacerbated by climate change. Other pollution of concern, as demonstrated in the voluntary commitments, is ship-based pollution including emissions, chemical pollution, underwater munitions, potential oil spills and ocean noise.

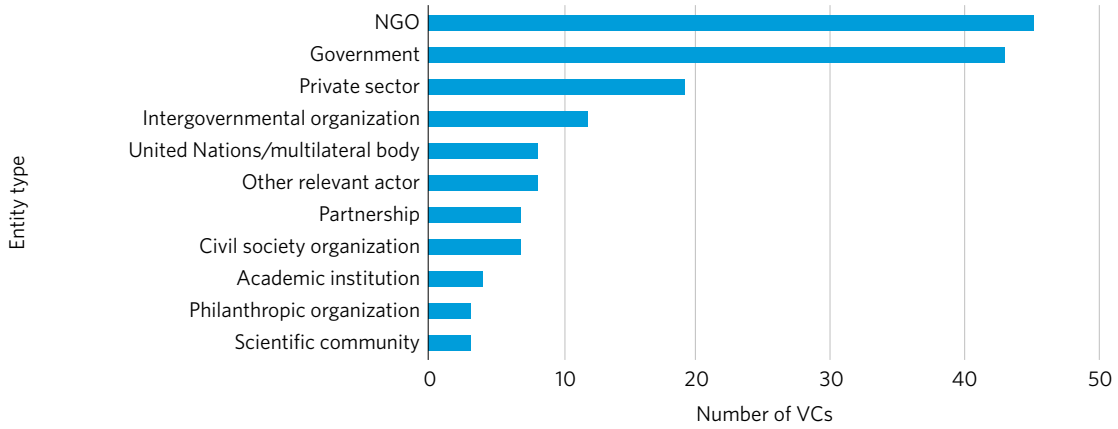
Figure 5 demonstrates that NGOs were the leading registrants of VCs relating to SDG 14.1, followed by governments. SDG 14.1 is only one of two SDG 14 target categories where governments were not the leading entities registering VCs. The private sector is the third most common entity, with considerable participation in implementing solutions towards this target. This is perhaps due to the potential for technological solutions in reducing marine pollution, whether on land or at sea. Some examples include automated devices for collecting marine litter at sea, and new fuels or technologies for reducing emissions from ships.

A total of 167 VCs were registered in this category. Out of these, 60 per cent addressed plastic pollution. If abandoned, lost or discarded fishing gear, which is largely made out of plastic (such as nylon), is taken into account, the figure climbs to 70 per cent. The percentage is higher than in 2017, when 52 per cent of the VCs related to plastic pollution. However, the total number of commitments relating to SDG 14.1 (544) was higher in 2017. The issue of plastic pollution in the marine environment clearly continues to be a concern among all stakeholders.

The next most common categories of VCs related to discarded and lost fishing gear (technically amounting to plastic pollution). For example, the Global Ghost Gear Initiative (VC #47496) is the world's largest cross-sectoral alliance committed to driving solutions to the problem of lost, abandoned and otherwise

[5] Jambeck, J.R., and others (2015). Plastic waste inputs from land into the ocean. Science, 347(6223), 768–771.
[6] Geyer, R., Jambeck, J.R., and Law, K.L. (2017). Production, use, and fate of all plastics ever made. *Science advances*, 3(7), e1700782.
[7] Chiba, S., and others (2018). Human footprint in the abyss: 30 year records of deep-sea plastic debris. *Marine Policy*, 96, 204–212.
[8] Burt, A.J., and others (2020). The costs of removing the unsanctioned import of marine plastic litter to small island states. *Scientific Reports*, 10(1), 14458.

Figure 5
Entities registering VCs for SDG 14.1



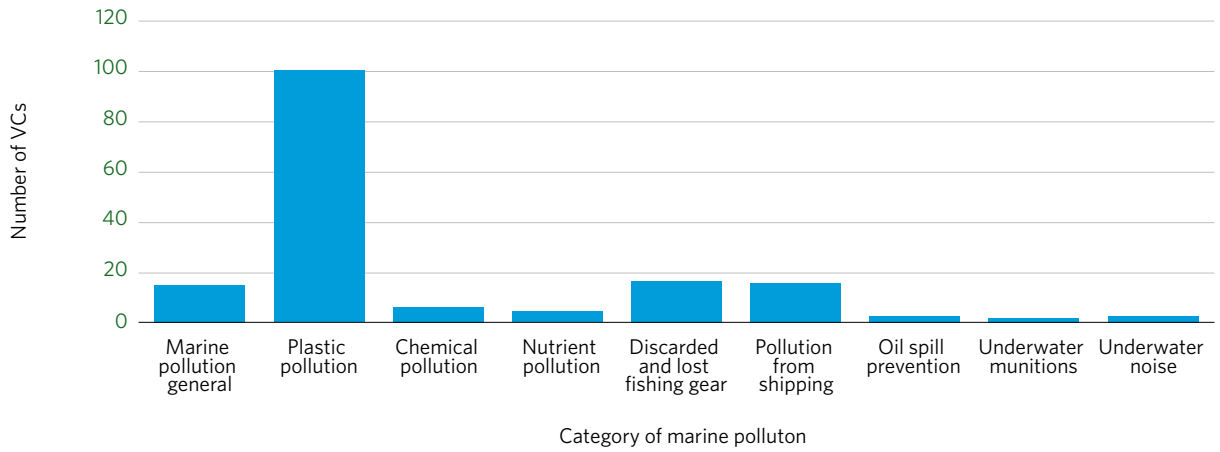
discarded fishing gear. Projects include the North American Net Collection Initiative to prevent ghost gear in the coastal waters of the western United States, Mexico, and Canada and a ghost gear removal pilot effort in Myanmar, as well as other projects relating to prevention and removal of ghost gear in the Pacific Northwest, Indonesia, Vanuatu, the Caribbean, the Gulf of Maine and Rhode Island, and Australia, among others. Small grants are also provided for work around the world.[9]

Other categories of action include pollution from shipping, which covered actions on diverse pollution types such as reducing air pollution and emissions, putting in place port reception facilities, addressing sewage and other ship-source pollution, biofouling, recycling ships at the end of their lifecycles, and implementing regulations. The next most common category related to VCs that addressed marine pollution in a general sense and was not limited to only plastic pollution. This category included waste and wastewater management, including recycling, source to sea management, pollution monitoring and education. The smaller categories that included a few VCs each were chemical pollution (including herbicides and pesticides, polyfluoroalkyl substances and other hazardous substances), nutrient pollution (including reduction of effluents and nutrient losses from farming), oil spill prevention, reducing underwater noise, and addressing pollution from munitions dumped at sea.

The implementation of SDG 14.1 for the plastic pollution category received a boost from the ongoing negotiations for an international legally binding agreement to end plastic pollution (UNEA resolution 5/14). It is likely that the large amount of attention directed at plastic pollution, including in the form of VCs, at the 2017 Ocean Conference was part of generating the momentum that led to the negotiations for a new treaty. And while causality is difficult to demonstrate, it is likely that SDG 14 as a soft law instrument, with the Ocean Conference as a venue, provided a new space for dialogue on the issue of plastic pollution that diverse stakeholders could participate in.[10] The growing number

[9] See www.ghostgear.org/.
[10] Vierros and others (2024). Building global momentum towards managing marine plastic pollution through Sustainable Development Goal 14. *Ocean and Society*.

Figure 6
Number of VCs in different categories of marine pollution



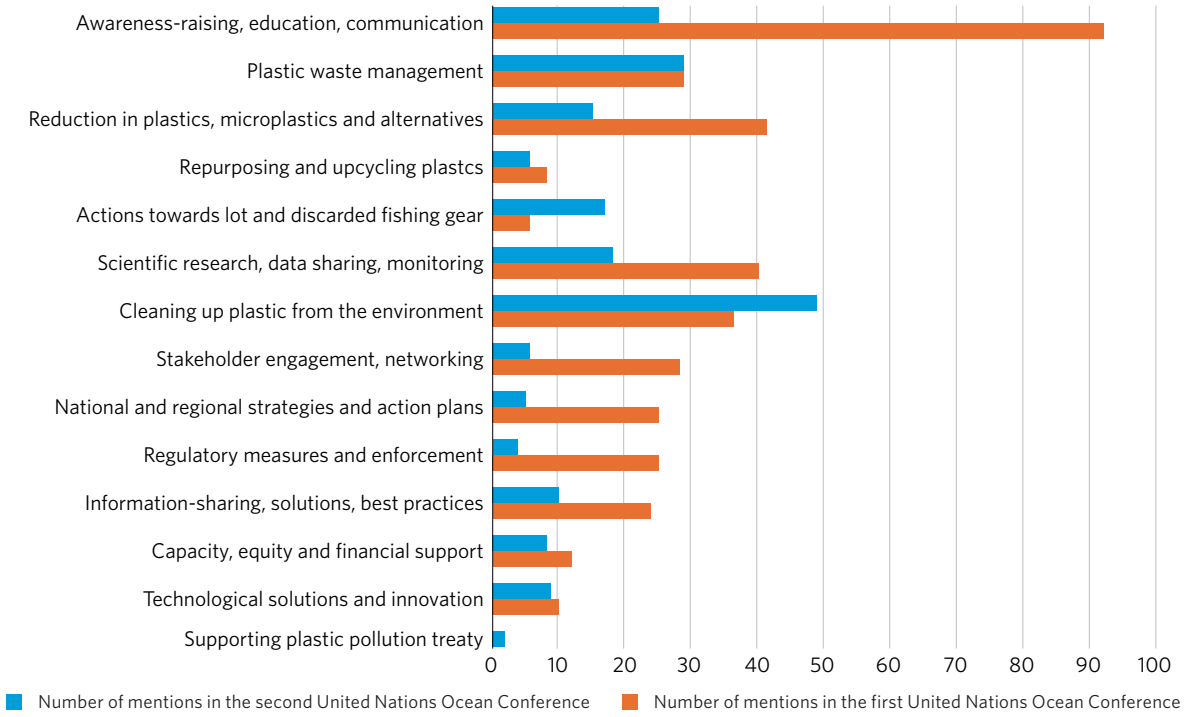
of VCs responding to the plastic pollution crisis continue to lead by example, demonstrating the ability of grass-roots action to contribute to global policy.

By the time of the second United Nations Ocean Conference, the plastic pollution treaty negotiations had already started, and the Political Declaration of the Conference welcomed UNEA resolution 5/14. Figure 7 highlights the differences in the number of VCs from the first and second Ocean Conferences addressing different categories of plastic pollution. While the number of VCs addressing plastic pollution was higher at the first Conference, the figure demonstrates how awareness-raising, education and communication was the most numerous category of VCs in 2017, but not any more in 2022 with the plastic pollution treaty negotiations in full swing. Similarly, there were more government commitments relating to regulations for reducing single-use plastics in 2017, while in 2022 these types of commitments were not as prominent. Plastic waste management remained a focus, as did scientific research, while stakeholder engagement was a less prominent category of VCs in 2022, potentially due to several large stakeholder networks that were already being put in place earlier. Interestingly, VCs related to grass-roots action by NGOs, community groups and others to clean up plastic trash from beaches and rivers are now even more numerous, demonstrating that action on the ground did not stop with the treaty negotiations. Additionally, the focus on actions towards abandoned, lost or discarded fishing gear were more numerous in 2022 than in 2017, as this problem is receiving more attention.

The major highlights in implementation have been the ongoing negotiations of the plastic pollution treaty, although the exact measures contained in the treaty and its ambition are as of yet unknown; the large number of grass-roots actions undertaken by NGOs and civil society in all parts of the world; and the increasing participation of the private sector in finding technology solutions to the plastic pollution crisis, but also of solutions for other types of pollution such as emissions from ships.

Some examples of VC impacts include a commitment by the Government of Indonesia to reduce, by 2025, 70 per cent of its plastic pollution (VC #40657). Among the concrete actions taken are the prohibiting the dumping of waste into the river and organizing regular clean-up activities involving local residents. A National Action Plan on Marine Plastic Debris was also

Figure 7
A comparison between action categories in plastic pollution VCs at the first United Nations Ocean Conference and the second United Nations Ocean Conference



Note: The absolute numbers analysed were 168 for the first Conference and 117 for second Conference. This graph should be interpreted more for trends rather than absolute numbers.

developed. The Hong Kong Coastal Cleanup (VC #42404) reported removal of 2,312 kg of marine debris from Hong Kong's coastlines in one year, with the assistance of 11 schools, 50 companies, organizations, community groups and individuals, consisting of 2,667 volunteers.

As part of industry action, Dell Technologies committed to using ocean-bound plastic on a commercial scale (VC #43750). Dell launched the computer industry's first ocean-bound plastic packaging for a consumer laptop in 2017. Since that time, Dell has continued to scale up the use of ocean-bound material and uses it in its commercial Latitude notebook line. Dell Technologies also took the step to officially form the NextWave Plastics consortium[11] in partnership with The Lonely Whale Foundation and a select number of founding members from cross-industry companies. Membership has grown to 11 organizations committed to developing commercially viable and operational supply chains and the integration of non-virgin plastic material into packaging and products. Since its launch, member companies have developed use cases and conducted commercial launches, which showcase the viability of integrating ocean-plastics into existing supply chains (or creating new ones). The NextWave Plastics supply chains are currently found in areas such as Indonesia, Chile, Denmark, Haiti, and the Philippines. Additionally, the membership has committed to collectively divert a minimum of 25,000 metric tons of plastic from entering the ocean by the end of 2025

[11] See nextwaveplastics.org.

Illustrating United Nations action on marine plastics, in December 2017, six months after the first Ocean Conference, the United Nations Environment Programme (UNEP) announced that the Clean Seas Programme, a partnership aimed at raising awareness of plastic pollution and marine litter, and one of the first voluntary commitments registered, had generated thousands of pledges from individuals and NGOs to reduce pollution. Additionally, 40 Governments had submitted pledges, and many were moving towards reducing or banning certain types of single use plastics. By 2023, the programme website indicated that 69 countries had joined the campaign, representing 76 per cent of the world's coastline.[12] This initiative has recently transitioned to continue under the umbrella of UNEP's Global Partnership on Plastic Pollution and Marine Litter,[13] which has over 630 member organizations, and established communities of practice, regional nodes, and a digital platform for knowledge sharing and collaboration.

Marine protection, management and restoration (SDGs 14.2 and 14.5)

The discussion under this heading includes both SDG 14.2 (by 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans) and SDG 14.5 (by 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information). Both of these targets came to term in 2020, but neither of them has been reached as of yet. Currently, MPAs cover 8 per cent of the global ocean,[14] and the ultimate goal of achieving healthy and productive oceans through sustainable management and protection has not been reached globally.

To add further urgency to marine protection, the Convention on Biological Diversity, adopted, in 2022, the Kunming-Montreal Global Biodiversity Framework, which in its target 3 calls for the conservation of 30 per cent of terrestrial and inland water areas, and of marine and coastal areas by 2030. Further, the Agreement under the BBNJ Agreement, adopted in June 2023, will, once in force, provide the tools for establishing measures for area-based management, including MPAs, in areas beyond national jurisdiction. The BBNJ Agreement will thus present a huge opportunity for countries to work collaboratively to make progress towards international targets on ocean conservation and management, including SDG 14.

NGOs were the most dominant entities registering commitments in this category, demonstrating active work towards marine protection and management. Governments were next, and are generally the only entity that can declare MPAs in most parts of the world. IGOs were the next common category.

Targets 14.2 and 14.5 combined have the largest number of VCs that relate to them (192 in total). These VCs could be roughly grouped into eight categories: (i) those relating directly to establishing new MPAs or expanding existing ones; (ii) those supporting existing MPAs or the establishment of new ones through improved management, finance, science, etc.; (iii) those relating primarily to community-based marine protection; (iv) those relating to restoration of marine and coastal ecosystems; (v) those relating to blue carbon, nature-based solutions and climate change resilience; (vi) those relating to sustainable ecosystem-based management including marine spatial planning and coastal management; (vii) those relating to species protection; and (viii) those relating to finance. Figure 9 shows the percentage distribution of the VCs relating to these categories.

[12] See www.cleanseas.org/.
[13] See www.gpmarinelitter.org/.
[14] See www.protectedplanet.net/en/thematic-areas/marine-protected-areas.

Figure 8
Entities registering commitments for SDGs 14.2 and 14.5

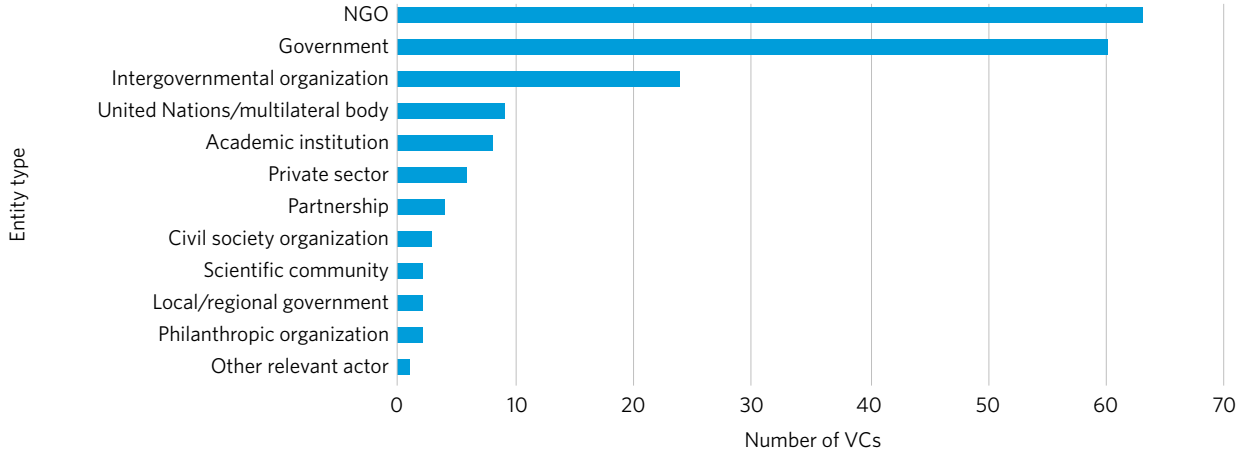
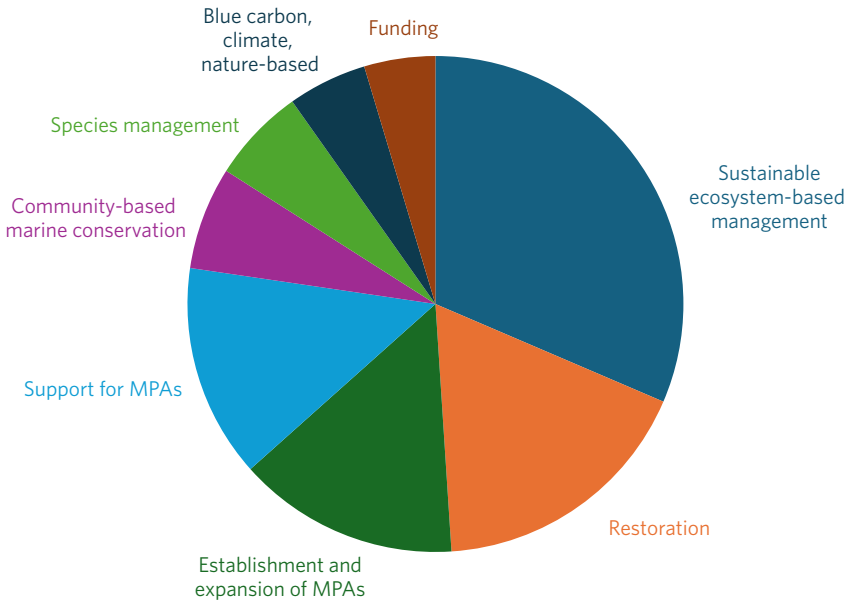


Figure 9
Percentage of VCs related to SDG 14.2 and SDG 14.5, by category

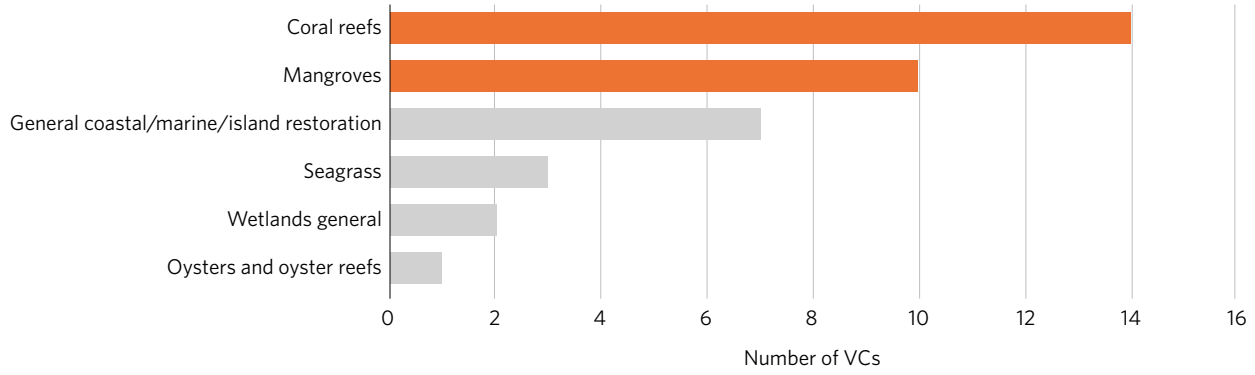


The category relating to sustainable ecosystem-based management was the largest category at 41.3 per cent, followed by restoration at 17.5 per cent; establishment and expansion of MPAs at 14.4 per cent; support for MPAs at 13.9 per cent; community-based marine conservation at 6.7 per cent; species management at 6.2 per cent; blue carbon, climate and nature-based solutions at 5.2 per cent; and funding at 4.6 per cent.

Restoration of marine and coastal ecosystems

The category of restoration saw the biggest increase in the number of VCs. This was particularly true for coral reef restoration, which was the focus of the largest number of VCs in this category, closely followed by mangrove restoration (see fig. 10). While restoration was a primary activity in only a few of the VCs registered at and around the 2017 Ocean Conference,[15] they have now increased to become the second-largest category of action under target 14.2. Much of this can be accounted for the increased number of VCs that relate to coral reef restoration, driven by declines in reef health worldwide and supported by advances in restoration practices.[16] The acceleration in restoration activities in general, and coral reef restoration specifically, demonstrates that marine and coastal ecological restoration is starting to become more mainstream, and that new techniques and technologies are increasingly being tested for coral reef restoration as the combined impacts of ocean warming and acidification are taking their toll on reefs.

Figure 10
Categories of marine and coastal restoration in VCs



The coral restoration VCs are collectively exploring new techniques for restoration, whether the land-based coral nurseries of Coral Vita (VC #42121), which protect young corals against bleaching from high water temperatures; the genetic studies relating to coral bleaching and quick attachment technologies for coral fragments experimented with by Fizzy Transition (VC #46176); or the use of electricity to increase coral growth rates as done in Singapore (VC #46820). The inclusion of community stakeholders and their capacity-building in restoration techniques is an important aim of the Coral Reef Restoration Alliance project on the west coast of Barbados (VC #46902) to address the deterioration of coral reefs. This project is supported by the Global Environment Facility (GEF) Small Grants Programme.

For example, the project titled "Restoration of the Mexican Pacific coral reefs using natural remediation techniques" by Centro Universitario de la Costa, Universidad de Guadalajara (VC #42319) has had encouraging initial results. The project is working in three natural protected areas, which are considered a biodiversity

[15] Vierros, M., and Buonomo, R. (2017). In-depth analysis of ocean conference voluntary commitments to support and monitor their implementation. Division for Sustainable Development, Department of Economic and Social Affairs, United Nations. Available at https://sustainabledevelopment.un.org/content/documents/17193OCVC_in_depth_analysis.pdf.

[16] Suggett, D.J., and van Oppen, M.J. (2022). Horizon scan of rapidly advancing coral restoration approaches for 21st century reef management. *Emerging Topics in Life Sciences*, 6(1), 125–136.

hotspot in the region. The purpose of this project is to use natural fragmentation as a remediation process to increase coral coverage. Using resources from the Government of Mexico and the National Geographic Society, the project has since 2014 attached over 2,000 healthy branching coral *Pocillopora spp.* fragments to natural substrate. The mean growth rate of the monitored fragments ranged from 0.18 to 0.35 cm per month, with a registered survival rate of 89 per cent. The project is undertaken in the context of other management actions, involving government, the private sector and the tourism industry. The long-term goal of the project is not only to continue with the restoration, but also with monitoring to ensure the success of the project. This restoration programme will be a baseline for long-term conservation and management techniques for the permanence of the Eastern North Pacific coral communities, and the goods and services that society depends on.

While it remains to be seen whether coral reef restoration can be undertaken at scale, it is on the path to becoming a valuable tool in the coral reef management toolbox and will provide important information about coral resilience in the face of climate change.

While coral reef restoration is a relative new activity, mangrove and seagrass restoration are already more established, requiring a relatively low amount of technology to support them. These activities are often undertaken with community support, such as, for example, the planting of 1 million "sea trees" (mangroves) project on behalf of the global surfing community by the NGO Sustainable Surf (VC #42266) or the mangrove cultivation undertaken by the Kerala United Fishermen Forum in India (VC #42487).

Marine protection

The establishment of new MPAs and expansion of existing MPAs directly contributes to the attainment of SDG 14.5. A total of 28 VCs registered at or around the second Ocean Conference related to this category, and the majority of those were commitments registered by governments. An additional 7 commitments were announced from the floor during second Ocean Conference but not registered in the VC database. This analysis considers all 35 commitments.

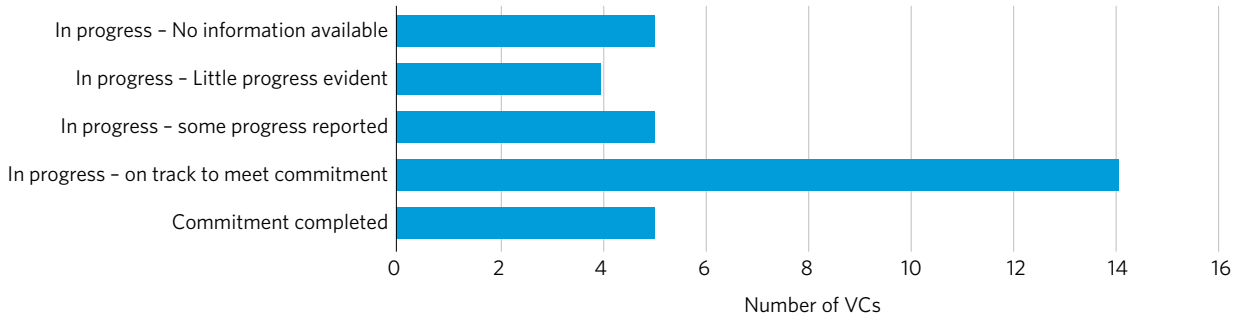
Information related to the status of MPAs established, and by extension the completion of these commitments, can be found in the Protected Planet website, which is linked to the World Database on Protected Area.[17] Based on the information available in Protected Planet and other online sources, 5 of the VCs have already been completed, 14 are on track to meet their commitments, 5 show some progress, and 4 have very little evident progress. No information could be found for 5 of the VCs. It should be noted that without reporting, this information may not be complete. Figure 11 demonstrates the current situation.

Past progress reports indicate that VCs related to marine protection made during or after the 2017 Ocean Conference have already resulted in a considerable expansion of the extent of MPA coverage.[18] It is very likely that the VCs made at second Ocean Conference will be similarly impactful. Driving faster implementation is also the Kunming-Montreal Global Biodiversity Framework target for 30 per cent marine conservation by 2030, which has created a new push towards declaring additional MPAs and expanding existing ones.

As bright spots, the VCs already completed – or largely completed – include new marine protection efforts by Canada (VC #48545), Israel (VC #46500), Palau (announced from the floor),

[17] See www.protectedplanet.net/en.
[18] See https://sdgs.un.org/sites/default/files/2022-01/DESA-Oceans-VCs.pdf.

Figure 11
Status of MPA-related VCs



Panama (announced from the floor), Peru (VC #47494) and Uruguay (VC #43513) and With the completion of its commitment, Panama became the first country in Latin America to achieve over 50 per cent ocean protection,[19] while Palau became the first country to have protected 80 per cent of its offshore marine environment.[20] In addition, countries working through international and regional organizations have also made progress, in the form of a new particularly sensitive sea are in the Mediterranean to protect cetaceans (VC #46978) and the expansion of an existing MPA in the North Atlantic under the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) to also cover the seafloor (VC #46877).

Some of the VCs that are progressing well include the 2021 commitment by Colombia, Costa Rica, Ecuador and Panama to build on and expand existing conservation efforts to create a corridor of protection and sustainable use covering 500,000 km^2 in one of the world's most important migratory routes for sea turtles, whales, sharks and manta rays (VC #47611). The Eastern Tropical Pacific Marine Corridor has continued to attract funding support, and was built on in 2023 to establish a coalition called "Americas for the Protection of the Ocean", which unites nine nations from Canada to Chile to collaborate, cooperate and coordinate on marine protected and conserved areas in the Pacific (VC #48588).[21]

These bright spots and others like them are building momentum for increased ocean protection. At the same time, many countries are lagging behind on their commitments, whether for lack of priority afforded for ocean protection over other national priorities, lack of funding, or lack of institutional, legal or governance structures and stakeholder inclusion processes. Each situation is different, taking place in a distinct geographical, social, political and economic context. Of concern is also the quality of marine protection, particularly in terms of regulations, management effectiveness and enforcement,[22] as well as equity. The latter requires the equitable sharing of costs and benefits of ocean protection. The use of other effective area-based conservation measures, led by communities, where possible, has been shown to address equity concerns. The next section examines VCs focused on community-based marine management.

[19] See www.pgaction.org/news/panama-oceans-protection.html.
[20] See www.bluenaturealliance.org/palau-national-marine-sanctuary.
[21] See www.dfo-mpo.gc.ca/oceans/collaboration/declaration-eng.html and https://updates.panda.org/target-locked-time-to-deliver-30x30-for-the-ocean.
[22] Pike, E.P., and others (2024). Ocean protection quality is lagging behind quantity: Applying a scientific framework to assess real marine protected area progress against the 30 by 30 target. Conservation Letters, e13020.

Community-based marine management

While the community-based commitments relating to SDGs 14.2 and 14.5 were not the most numerous at 13 VCs, they have the potential to be among the most impactful. Local-scale conservation and management relies on participatory approaches that can result in a high degree of innovation, with the aim of providing benefits for marine biodiversity, fisheries and local livelihoods.

For example, the Oracabessa Bay Fish Sanctuary in Jamaica (VC #46239) is improving management capacity by registering and training fisherfolk groups in MPA management, facilitating boundary development for MPAs by leading participatory processes involving fishers and tourism stakeholders, and building public-private partnership framework to ensure long-term success. The Sanctuary was the first of the grass-roots efforts to revive Jamaica's coral reefs in an otherwise overfished area. A collaborative effort between the nonprofit Oracabessa Foundation and the St. Mary Fishermen's Cooperative, the local fishermen's organization, the 225-acre Sanctuary was formally recognized by the Government in 2010. By 2014, removing fishing pressure yielded large benefits: a 564 per cent increase in the mass of living fish per area, a 272 per cent increase in fish density, a 16 per cent increase in fish size, a 153 per cent increase in coral coverage and a 43 per cent reduction in algae coverage. Fisherfolk can now make a decent living outside the protected area, and they fully support the sanctuary, including through patrolling the Sanctuary to enforce the no-take rules. The success of Oracabessa Bay is being replicated in other areas in Jamaica, such as Rio Nuevo, Reggae Beach and Page Beach.[23]

Other local marine management and conservation projects bringing benefits to biodiversity and people include, among others, sea turtle nest protection by a community-based organization called Nature Friends of Rekawa in Sri Lanka (VC #42068), a community-based voluntary marine conservation in Mauritius (VC #46913), improved invasive alien species management by local communities in 6,447 ha of MPAs in Samoa (VC #46186), revitalization of traditional fish traps (stone tidal weirs) by coastal communities for improved nutrition in Japan (VC #46159) and marine and coastal stewardship and restoration activities on their traditional territories by the Indigenous Tsleil-Waututh Nation on Canada's west coast (VC #47613).

Management of marine ecosystems

The VCs relating to ecosystem-based management of marine and coastal ecosystems include a variety of approaches (see fig. 12), the most popular of which are various forms of integrated marine and coastal area management or ecosystem management, followed by marine spatial planning and watershed and mangrove management. National ocean and coastal (including wetland) policies were also common; as were various types of support for management through targeted research, monitoring, tool development and so on, as well as large marine ecosystem approaches. Smaller categories focused on sustainable management of specific activities such as fisheries (anchoring in coral reefs) and tourism, increasing stakeholder awareness and involvement and assigning legal rights to the sea through rights of nature approaches.

Impact of the large marine ecosystem approaches have been well documented. For example, the countries involved in the Pacific Central American Coastal Large Marine Ecosystem (PACA) (VC #47003) are in the process of developing a collaborative information system to facilitate accurate assessments of the environmental health and socioeconomic

[23] See www.seacology.org/project/oracabessa-bay/?fbclid=IwZXh0bgNhZW0CMTEAAR2agDiSeopAAI5NMJOljedc1mMui7Gy-w6VzXOZPykJ6WxDVxyzDD122VIQ_aem_ZmFrZWR1bW15MTZieXRlcw and https://stories.undp.org/oracabessa-bay.

status that will support management of shared biodiversity. The region is also undertaking a pilot project on marine spatial planning to generate practical experience for its implementation.[24]

The Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (IWEco Project) (VC #47049) is a five-year, regional project that builds upon the work of previous initiatives, to address water, land and biodiversity resource management, as well as climate change. IWEco has undertaken a number of activities to strengthen national capacities related to integrated watershed management, including nature-based solutions work in Cuba, sustainable livelihoods in Saint Vincent and Grenadines, sustainable livelihoods and watershed rehabilitation in Saint Lucia, and watershed management in the Dominican Republic, among others.[25]

Two of the commitments related to implementing rights of nature approaches: one a feasibility study in regard to the Mediterranean Sea as a legal entity, and the other a legal recognition of such rights in Aruba. The government of Aruba has now taken the first steps to recognize the rights of nature in the Aruban constitution. The constitutional amendments aim to grant legal protections to nature, affirming its rights to protection, conservation, and restoration of ecosystems and biodiversity. Simultaneously, the amendments would acknowledge every individual's entitlement to a clean, healthy and sustainable environment. If the amendments are passed, Aruba would become the second country in the world, after Ecuador, to recognize the rights of nature in its constitution.[26]

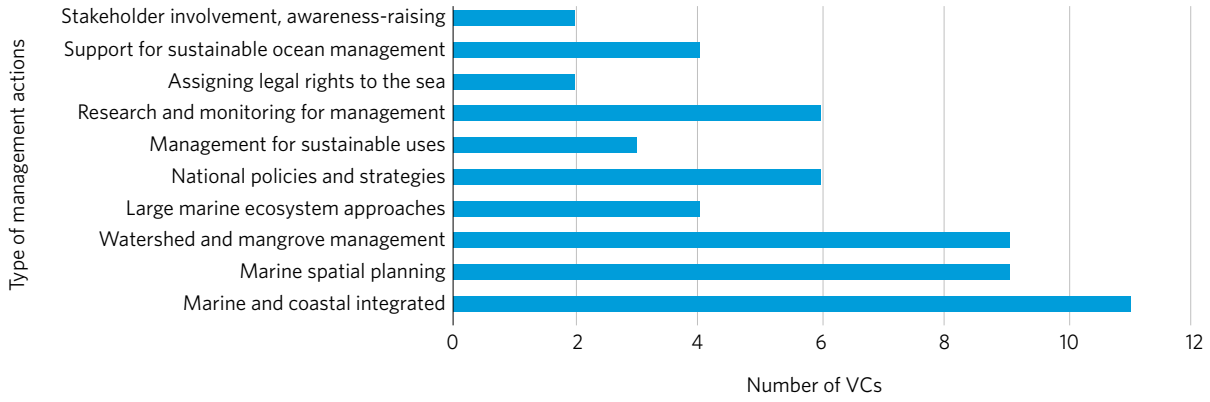
Enabling marine conservation

Thirty-four VCs provide various types of support for marine conservation, sustainable use and management, particularly for the establishment and management of MPAs. The majority of these (see fig. 13) focus on advocacy, financial support, policy support, scientific support and collaboration towards the establishment of new MPAs and networks. Several VCs focus on increasing management effectiveness, sustainable finance and community livelihoods adjacent to – or connected with – existing MPAs.

With the BBNJ Agreement now adopted but waiting to enter into force, four VCs relate to the establishment of MPAs and area-based management measures in areas beyond national jurisdiction, including through finance, scientific work and policy advocacy. For example, the SARGADOM project (VC #48064) aims to improve the protection of biodiversity and to maintain ecosystem services in two sensitive high seas areas, the Thermal Dome and the Sargasso Sea, and facilitate the design of hybrid ocean governance models. The related UNDP-GEF project to strengthen the stewardship of the Sargasso Sea (VC #48177) aims to undertake this through facilitating a collaborative, cross-sectoral and sustainable stewardship approach by improving the knowledge base and strengthening frameworks for collaborative management and governance. These actions also implement SDG 14.C on implementing international law as reflected in Convention on the Law of the Sea. The two projects have examined the potential for big data and artificial intelligence in the governance of high seas ecosystems; the Sargasso Sea Commission and the Convention of Migratory Species have partnered with range States towards transboundary cooperation on the European eel and American eel. Both the Thermal Dome and the Sargasso Sea

[24] See https://news.iwlearn.net/sustainable-pacific-an-integrated-approach-to-marine-biodiversity-conservation.
[25] See https://iweco.org/.
[26] See www.thecooldown.com/outdoors/aruba-environmental-rights-constitutional-amendment-nature/.

Figure 12
Distribution of ecosystem-based ocean management actions in VCs



partners have examined possibilities of making progress towards protection through existing instruments, such as the International Maritime Organization's particularly sensitive sea areas.[27]

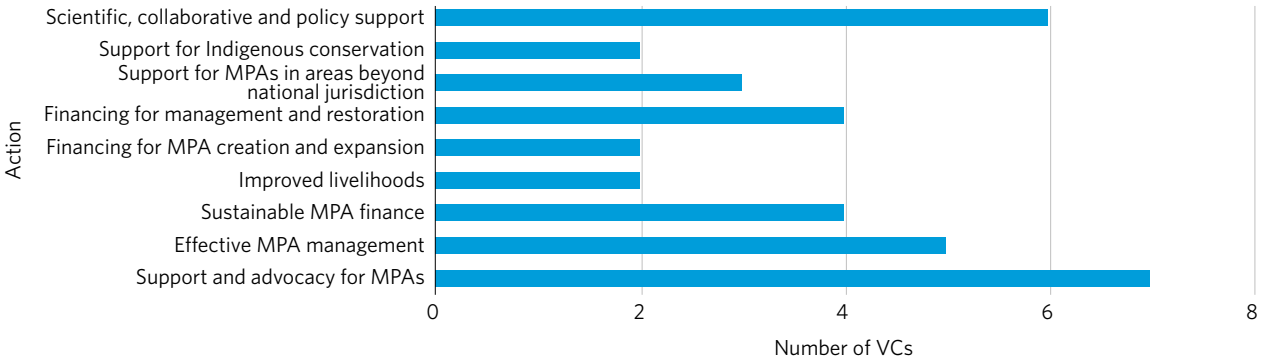
Six of the VCs aimed to provide financial support, either for creation of new and expanded MPAs, strengthening the management of existing MPAs, or providing support for marine and coastal biodiversity conservation, sustainable use and restoration. For example, the Protecting Our Planet Challenge (VC #47684) promised to invest at least $1 billion to support the creation, expansion and management of MPAs and indigenous and locally governed marine and coastal areas by 2030. The Challenge is a partnership encompassing several philanthropic organizations including the Bezos Earth Fund, Arcadia Fund, Bloomberg Philanthropies, Bobolink International Conservation Fund of Canada, Gordon and Betty Moore Foundation, Nia Tero Rainforest Trust, Re:wild, Rob and Melani Walton Foundation and Wyss Foundation. Some examples of allocated funding thus far include the Eastern Tropical Pacific Marine Corridor (Bezos Earth Fund), the Great Bear Sea, Canada (Gordon and Betty Moore Foundation), and a total of $204 million through the Bloomberg Oceans Initiative, which is funding various marine protection and transparency initiatives. Core support is also being provided to Oceans 5 (an ocean funders collaborative), the Deep-Ocean Stewardship Initiative and Blue Ventures (Arcadia).[28]

Another example of a grant funding programme is the Blue Action Fund, which supports marine conservation projects that are implemented by NGOs to conserve the ocean and improve the livelihoods of coastal communities in developing countries. The VCs provide an example of a Norwegian contribution to the Blue Action Fund of NOK 20 million (VC #47039) as well as a Blue Action Fund supported VC for the establishment of a network of MPAs in the Autonomous Region of Príncipe through a co-management approach (VC #46079). Since its inception, the Blue Action Fund projects have been working to improve the management of 232,182 km^2 of MPAs helping to establish 148,511 km^2 of new MPAs and reaching more than half a million people.[29]

Smaller funding initiatives have also produced considerable impact for marine conservation. For example, Upwell, an NGO working with sea turtles, committed $750,000 over two years to support monitoring of critically endangered Pacific leatherback turtle populations in key

[27] See www.sargassoseacommission.org/index.php, https://sargadom.com/en/ and https://marviva.net/.
[28] Pye, D. (2023) Bankrolling biodiversity: How are private philanthropists investing in nature. Mongabay. Available at https://news.mongabay.com/2023/04/bankrolling-biodiversity-how-are-private-philanthropists-investing-in-nature/.
[29] See www.regjeringen.no/en/aktuelt/norway-increases-funding-of-marine-protected-areas/id3017840/ and www.blueaction-fund.org/.

Figure 13
Action categories in VCs to support marine conservation



foraging and breeding habitats and along migratory pathways (VC #46581). The monitoring will provide a scientific basis for minimizing fisheries bycatch and identifying opportunities for species conservation and recovery. The organization deploys satellite tags on leatherbacks to learn more about their seasonal movements, including the timing of their seasonal arrival and departure. The data include real-time monitoring data and fisheries observer data to advance collaborative technologies. These data are shared with fishers and resource managers to collaboratively reduce the threats turtles face at sea.[30]

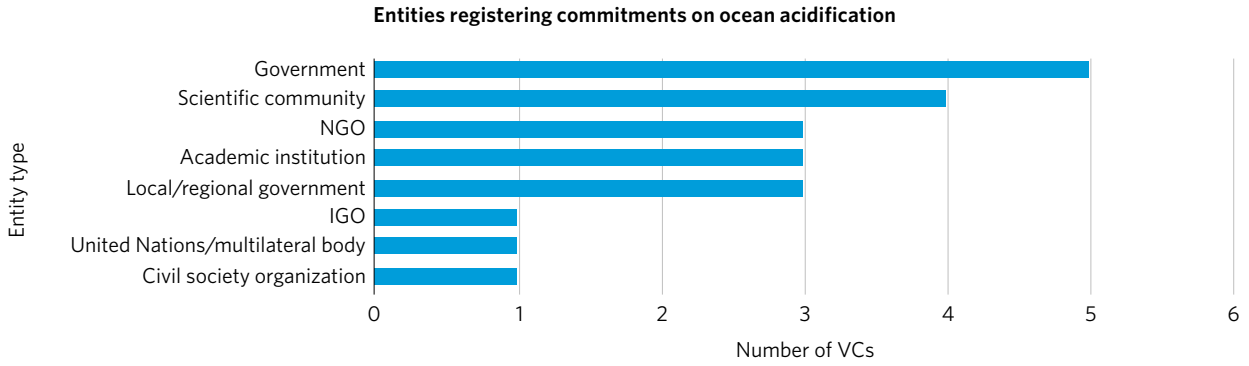
Responding to ocean acidification (SDG 14.3)

According to the State of the Ocean Report 2024,[31] by the United Nations Educational, Scientific and Cultural Organization (UNESCO) the data collected annually shows a mean global increase in ocean acidification in all ocean basins and seas. There is a high confidence that ocean acidification will continue to increase as open-ocean surface pH is projected to decrease by around 0.3 pH units by 2081–2100, relative to 2006–2015. Ocean acidification threatens marine organisms and ecosystem services, including food security, by reducing biodiversity, degrading habitats and endangering fisheries and aquaculture. Acidification does not impact all oceans and seas equally, and its rate of change, pattern and scale shows great regional variability. For example, according to a recent study, the acidity of Antarctica's coastal waters could double by the end of the century, threatening marine life.[32] There is an urgent need to collect more and better distributed long-term observation data of ocean acidification, together with chemical and biological parameters, to better understand and map ocean acidification and its impacts, and to develop response measures.[33]

A total of 22 VCs related primarily to addressing ocean acidification. The top entity types registering the VCs were governments (5 VCs) and the scientific community (4 VCs). In addition, NGOs, academic institutions and local/regional governments each registered 3 VCs. IGOs, United Nations agencies and multilateral bodies,

[30] See www.upwell.org/.
[31] IOC-UNESCO (2024). State of the Ocean Report (IOC Technical Series, 190). Paris, IOC-UNESCO. Available at https://doi.org/10.25607/4wbg-d349.
[32] Nissen, C., and others (2024). Severe 21st-century ocean acidification in Antarctic Marine Protected Areas. *Nature Communications*, 15(1), 259.
[33] UNESCO's State of the Ocean Report 2024. Available at www.ioc.unesco.org/en/articles/state-ocean-report-2024-date-knowledge-ocean-action.

Figure 14
Distribution of entities registering VCs on ocean acidification



and civil society also registered commitments. The United States of America was the top country of the entities registering commitments.

The 22 VCs could be broken down into several categories, where the most numerous ones relate to ocean acidification observation and research. This category includes ocean observations locally, nationally and trough global networks, with compatible data collected and shared, and with capacity-building and technology transfer included in some cases. The study of impacts and response measures, as well as solutions, was another major category of commitments, sometimes linked with the related development of response measures, such as action plans. In some cases, ocean acidification response measures were also linked to addressing other related impacts, such as hypoxia (e.g. VC #47018), or were exploring the buffering capabilities of aquatic vegetation (e.g. VC #46955).

Global collaboration and data-sharing was undertaken by several networks such as the Global Ocean Acidification Observing Network (GOA-ON) (VCs #43381, #47443, #47887, #42332, #43098, #43158, #43396, #46914), the International Atomic Energy Agency (IAEA) Ocean Acidification Coordination Centre (VCs #43096, #47887, #42332, #43098, #43158, #43381, #46816, #46997, #47887) and/or the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), which supports the Global Ocean Acidification Observing Network (GOA-ON) (VCs #43098, others). This demonstrates how highly interlinked and coordinated the scientific observation efforts are, indicating that data on ocean acidification observation are openly accessible in compatible formats from multiple locations around the world, making it more easily useable for scientific synthesis as well as policy. For example, GOA-ON encompasses more than 900 scientists from 114 countries and territories.[34] Both GOA-ON and IAEA Ocean Acidification Coordination Centre support countries through capacity-building, including training, as well as technologies for observation. But while tremendous expansion of these networks has taken place, gap areas still remain in global monitoring data, as well as in the scientific understanding about impacts of acidification on organisms and ecosystems, and their capacity to adapt.[35]

[34] See www.goa-on.org/about/growth.php.
[35] Widdicombe, S., and others (2023) Unifying biological field observations to detect and compare ocean acidification impacts across marine species and ecosystems: What to monitor and why. *Ocean Science*, vol. 19, pp. 101–19. Available at https://doi.org/10.5194/os-19-101-2023.

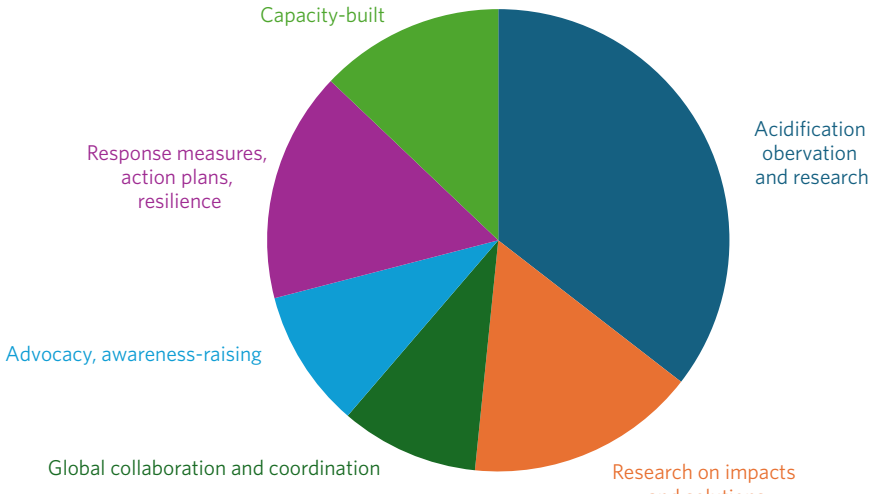
The IAEA Ocean Acidification International Coordination Centre (OA-ICC) progress report (VC #43096)

OA-ICC promotes international coordination and collaboration to advance ocean acidification science and help build a strong research community across the globe. The Centre provides access to training, tools, resources and opportunities for networking and collaboration, directly supporting Member States in their initiatives to address SDG 14.3.

Since 2012 IAEA OA-ICC has created over 850 capacity-building opportunities for more than 700 scientists from 100 countries. In their role as coordinator and facilitator they have organized dozens of cooperation and technical meetings, including a combined virtual and in-person event in Monrovia on 8 January 2021, planned in partnership with the OA Africa Network. Their OA bibliography currently totals over 8,000 OA-related publications, more than 1,100 of which are available on their separate online biological data portal created in collaboration with Xiamen University in China and hosted on PANGAEA. The bibliographic databases are complimented by the OA-ICC news stream, sharing the latest publications and news on OA science, which reaches hundreds of daily readers and has more than 400,000 views to date. Their mission is aligned with the goals and objectives of the Ocean Decade and is focused on SDG 14.3, which addresses ocean acidification.

Ocean acidification action plans have been developed in the United States in California (VC #47018), Maryland (VC #47567) and Washington State (VC #46955), while the creation of action plans – or other response measures – is under way as part of several VCs (e.g. VC #43546 in the city of Vancouver, VC #43163 on the global scale). The Ocean Acidification Observing Network – Africa Network is undertaking local response measures such as reducing local sources of acidification where feasible, reducing other stressors to the marine environment, protecting natural carbon sinks and identifying flexible and resistant species for seafood production (VC #43158). One innovative project on the local scale by the Washington Ocean Acidification Center of the University of Washington's EarthLab (VC #47443) measures trends in local acidification conditions and related biological responses, including variability in local conditions that allows shellfish hatcheries to respond through real-time management to changing pH conditions.

Figure 15
Categories of action in ocean acidification VCs



Sustainable and equitable fisheries (SDGs 14.4, 14.6 and 14.B)

The recently released FAO's The State of the World Fisheries and Aquaculture 2024 report[36] shows that 62.3 per cent of global fish stocks are sustainably exploited, while 37.3 per cent are not. This trend is gradually worsening over time. The percentage of overfished stocks was at 35.4 per cent two years ago, continuing the increasing trend in overfishing observed over several decades. The largest and most abundant stocks, which reach markets in higher volumes, tend to be from more sustainable sources. For example, 75 per cent of tunas are now considered to be from sustainable sources, compared with 40 per cent 10 years ago. FAO notes that sustainability failures usually stem from governance failures, the causes of which are complex and multifaceted.[37] Stronger management systems globally are required to reverse this trend.

A total of 90 VCs are related primarily to fisheries, while a larger number of VCs considered fisheries as part of other ocean management measures. This section focuses on those 90 that were primary fisheries commitments.

The entity types making the fisheries commitments included primarily governments, closely followed by NGOs, as seen in figure 16. The most common lead organizations were the FAO (seven VCs), European Commission (seven VCs), Government of Canada (three VCs).

The actions under the fisheries category relate to three separate targets: target 14.4 on sustainable fisheries (including various fisheries management measures and ending illegal, unreported and unregulated fishing), target 14.6 on ending subsidies contributing to overfishing and target 14.B on support for small-scale fishers. When grouped together (see fig. 17), it is evident that most of the actions included in the VCs (76 per cent) relate to target 14.4.

[36] See https://digital-media.fao.org/archive/FAO—-SOFIA-2024-FLAGSHIP-REPORT-2A6XC5UPOKQD.html.
[37] See www.fao.org/newsroom/detail/new-aquaculture-record-offers-way-for-ending-hunger-without-harming-marine-environment—fao-fisheries-chief/en.

Figure 16
Distribution of entity types in fisheries-related VCs

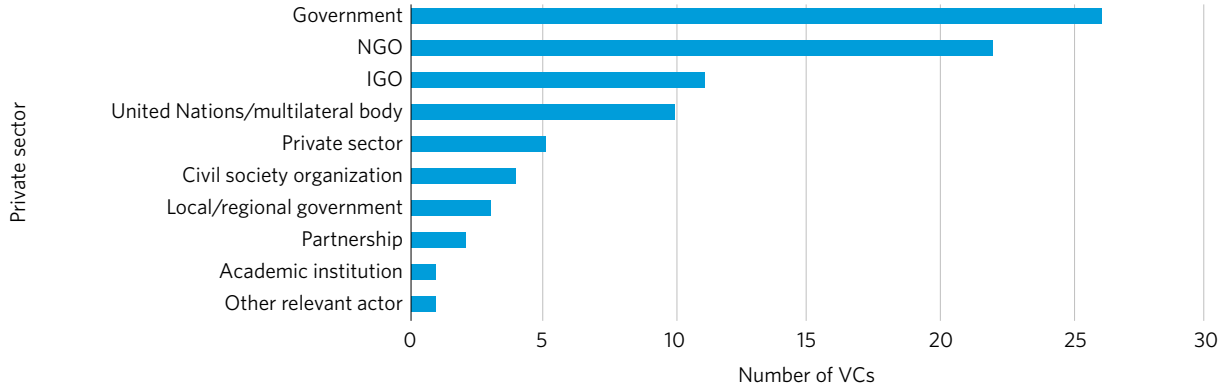
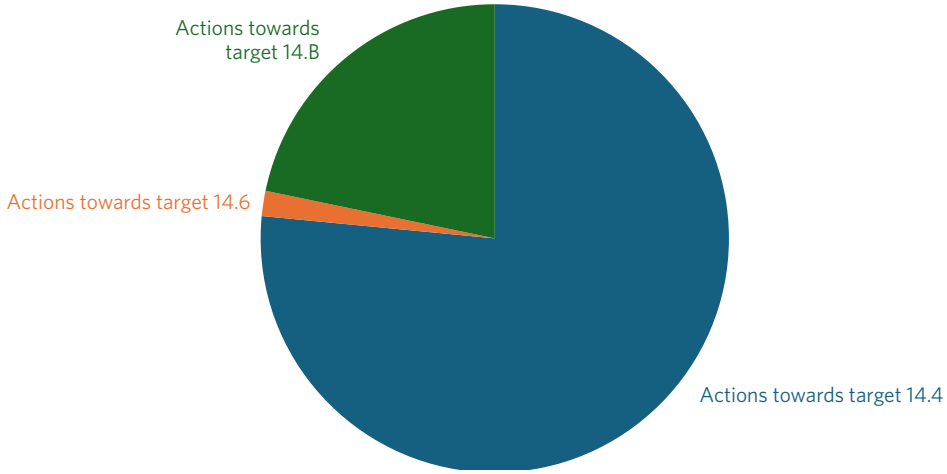


Figure 17
Percentage of VCs related to SDGs 14.4, 14.6 and 14.B



However, a substantial number (22 per cent) address issues relevant to small-scale and artisanal fishers (target 14.B)

Only two VCs related to fisheries subsidies (target 14.6), making it the target that continues to attract the lowest number of VCs. The two commitments registered for target 14.6 included a commitment by Portugal to revert national fisheries by 2030 into one of the most sustainable and low-impact sectors globally by stimulating the allocation of subsidies to promote sustainable fisheries by eliminating subsidies harmful to the conservation of the marine environment (VC #47379). The other commitment was by the NGO BLOOM, which committed to assist countries in analysing subsidies data with the assistance of a team of scientists VC #42078. Several subsidies-related reports now published on the BLOOM website.[38]

[38] See www.bloomassociation.org.

SDG 14.4 on sustainable fisheries and ending illegal, unreported and unregulated fishing

The majority of the VCs registered towards SDG 14.4 fall into the category of science, information, capacity, training and technology. The VCs in this category support fisheries management through improved scientific support, information systems, capacity-building and the transfer of technology. For example, a UN Trade and Development (UNCTAD)-FAO cooperative project commits to the provision of technical assistance and capacity development in a variety of market access issues (VC #42101). The Southeast Asian Fisheries Development Center supports countries in the region to develop and manage the fisheries potential through transfer of new technologies, research and information dissemination activities (VC #42105). The International Council for the Exploration of the Sea continues to inform fisheries management through open and transparent delivery of knowledge for fisheries management in support of SDG 14.4 (VC #43858).

The second-most numerous category is that of improved fisheries management, which includes actions such as the development of science-based management plans, ecosystem-based fisheries management, and financing for sustainable fisheries. For example, the International Pole-and-Line Foundation, an NGO in Maldives, made a commitment to develop and socialize best practices in live-bait fishing (hauling, transferring, holding and utilization of live-bait fish) (VC #46959). This traditional form of fisheries in Maldives is generally considered to be a sustainable way of catching tuna, and the best practice guidelines have now been released and are available online.[39] The best practice guide is complemented by a video documentary.

The VCs related to sustainable seafood, seafood value chains and consumer choice endeavours, such as certification schemes, were the third most numerous category. This category also included biosecurity. For example, the Marine Stewardship Council (MSC) (VC #46990) has set a target of a third of total wild capture production being MSC-certified or engaged by 2030. MSC will deliver this target through a combination of working with key partners worldwide from the NGO and industry sectors and deepening engagement in new regions and markets, particularly in the Global South. At the present time, 19 per cent of marine wild catch is engaged with the MSC programme (certified, in assessment, suspended, and in-transition). A total of 674 fisheries are engaged in the MSC programme, and 95 per cent of MSC-certified fisheries have made improvements to their fishing practices.[40]

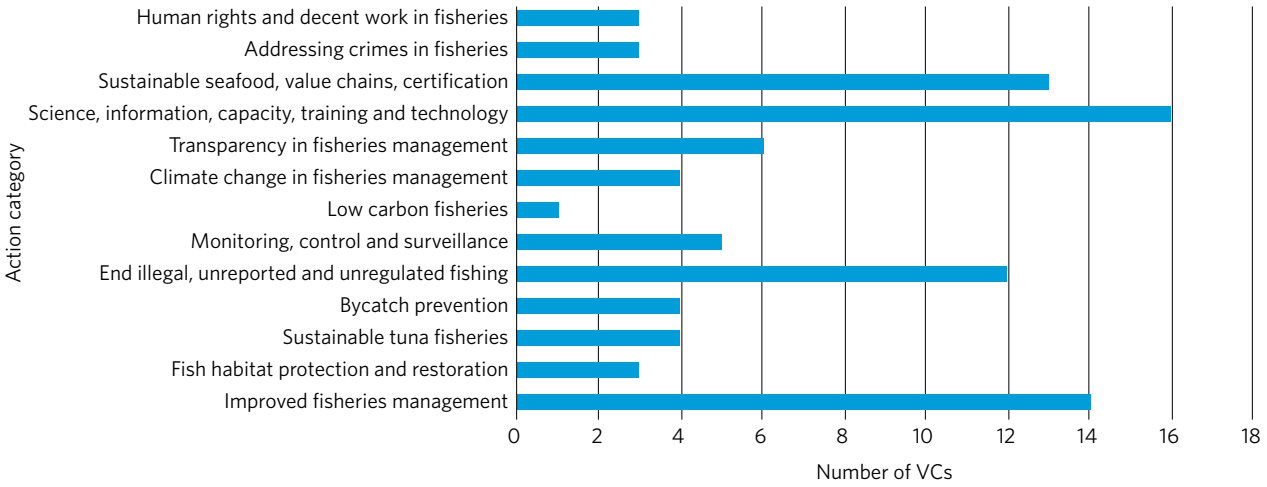
Ending or reducing illegal, unreported and unregulated fishing received several VCs, many of them relating to improved implementation of the Agreement on Port State Measures, as detailed in the description of FAO commitments below.

Other fisheries management measures, such as transparency measures; bycatch prevention; monitoring, control and surveillance; sustainable tuna fisheries; fish habitat protection and restoration; and measures to take into account climate change in fisheries management also received several VCs. There was one VC related to low-carbon fisheries, as well as a number of more socially oriented commitments, promoting human rights and decent work in fisheries.

FAO registered several commitments across these categories. These commitments include: continued support for the collection, validation, analysis and dissemination of fisheries and aquaculture statistics (VC #46094); commitment to work alongside member countries to

[39] See https://ipnlf.org/ipnlf-maldives-release-tuna-livebait-best-practice-guide/.
[40] See www.msc.org/en-us?gad_source=1&gclid=CjwKCAjw1emzBhB8EiwAHwZZxZtIXdRlFEIVTO7TB1npa0ofZ09_JC5-5QANRVmN5aJ1gExdgx-6dxoCyi4QAvD_BwE.

Figure 18
Categories of actions in VCs related to SDG 14.4



deliver rebuilding fisheries programmes that align with the aspirations of their people, so that fisheries reach their full potential for people and the environment (VC #42092); strengthening fisheries governance and States capacities to prevent, deter and eliminate illegal, unreported and unregulated fishing (VC #42099); support for management of fisheries and aquaculture biosecurity as well as the food safety of aquatic products (VC #46099); promotion of social sustainability in fisheries and aquaculture value chains (VC #46105); support for the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (VC #46106); support for Members to prevent, deter and eliminate illegal, unreported and unregulated fishing, and to establish a global information exchange system in support of the implementation of the Agreement on Port State Measures and other instruments (VC #46107); support for countries in their fisheries and aquaculture sector's adaptations to climate change including increased access to climate finance (VC #46123); and support for the development of upgraded fisheries and aquaculture value chains, particularly in small island developing States (VC #46124). Together, the funding provided through these commitments to improved fisheries management totals $111.1 million.

The FAO's Global Information Exchange System[41] (VC #46107) for the implementation of the Agreement on Port State Measures is now online and operational, although it requires accreditation to access. Those making use of System are able to exchange information with concerned States, FAO and other entities on the results of inspections carried out on foreign-flagged vessels seeking entry and use of their ports, as well as on any denials and other measures taken when non-compliance with applicable fisheries laws and regulations is detected. This exchange of information assists States in having timely access to certified information on compliance records of vessels, thus being in a better position to implement port State measures and subject non-compliant vessels to corrective action.

The Government of Canada has registered several VCs to combat illegal, unreported and unregulated fishing. These include the extension of the dark vessel detection platform to support

[41] See www.fao.org/port-state-measures/operational-resources/gies/en/.

Ecuador's efforts against illegal, unreported and unregulated fishing (VC #48569); a monetary contribution to a partnership to develop drone technologies to combat illegal, unreported and unregulated fishing (VC #48572); founding of the Illegal, Unreported and Unregulated Fishing Action Alliance to stimulate ambition and action (VC #48595); and a financial contribution to the Impact Philanthropy Group on behalf of International Monitoring, Control, and Surveillance Network, to enable the hosting of four virtual seminars supporting the global fisheries enforcement community (VC #48568).

The Fisheries Transparency Initiative committed to advancing government transparency in marine fisheries management (VC #46529) through conducting 10 country assessments regarding the level of information that national authorities publish on government websites. These TAKING STOCK assessments also consider whether information is freely accessible, up to date and easy for people to find – all important factors for properly understanding the current state of the sector. Furthermore, the assessments document "good transparency practices" where governments demonstrate innovative ways of communicating information and stimulating public debates from which other countries can draw inspiration. The Initiative has now completed 10 assessments, with 4 in progress and 15 planned. The assessment reports are available online.[42]

SDG 14.B: Support for small-scale fisheries

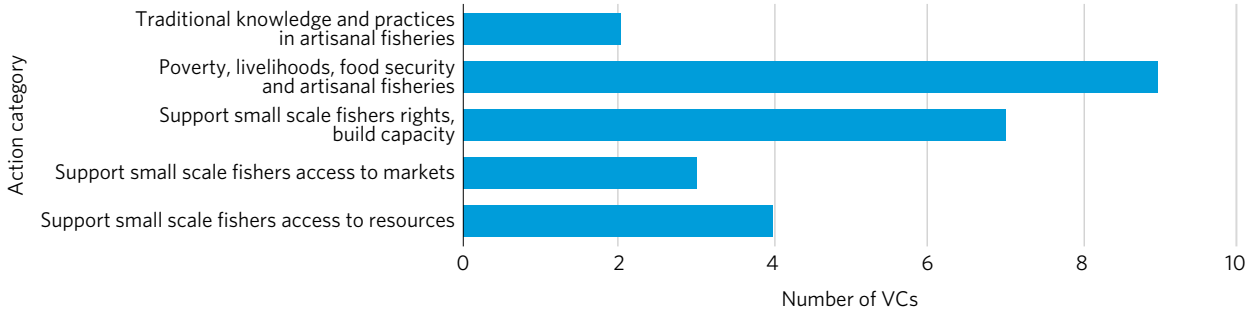
For SDG 14.B on small-scale fisheries, the majority of the actions in the VCs were focused on poverty, improved livelihoods, alternative livelihoods and food security. The second most numerous category involved building capacity and training of small-scale fishers on seafood handling and safety, certification procedures, fisheries management, data collection and other priority topics. Access to resources, market access and use of traditional knowledge and practices were also components of some VCs.

The Illuminating Hidden Harvests publication (VC #42501) by the FAO and partners Duke University and WorldFish has provided insight on a global scale into the role of small-scale fisheries in sustainable development, along with their role in the context of SDG 14.B.[43] According to this study, Small-scale fisheries account for at least 40 per cent of the global catch from capture fisheries and provide employment across the value chain for an estimated 60.2 million people, about 90 per cent of the total number employed in fisheries globally. Approximately 35 per cent of the people working in small-scale fisheries are women, with the number rising to roughly 50 per cent in the post-harvest segment of the value chain. Small-scale fisheries generate substantial value at 44 per cent of the total landed economic value of the catch (compared with 68 per cent by large-scale fisheries). On average almost 26 per cent of the marine small-scale fisheries catch by volume was exported in the study countries during the period 2013–2017. Despite the considerable economic benefits small-scale fisheries produce, poverty and marginalization of many traditional fishing communities continues. In addition, these communities are also among the most vulnerable to the impacts of climate change.

Given the information from the above publication, VCs that aim to assist the most marginalized communities can also potentially be the most impactful. For example, a Japanese-supported project undertaken by United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) aims to improve access to basic and sustainable resources for the

[42] https://fiti.global/taking-stock
[43] FAO, Duke University and WorldFish. 2023. Illuminating Hidden Harvests – The contributions of small-scale fisheries to sustainable development. Rome. Available at https://doi.org/10.4060/cc4576en.

Figure 19
Categories of action in VCs towards SDG 14.B



most vulnerable and poorest fisherwomen and seaweed collectors living in southern Morocco (VC #46514). As a result of this project, 650 fisherwomen have improved leadership skills, knowledge of sustainable fisheries management practices and financial resilience. They have learned modern fish-processing techniques and have increased their awareness of their role in protecting fisheries resources. Beyond the economic benefits, gender equality and the participation of fisherwomen are necessary conditions for an open, inclusive and supportive society.[44]

The Small-Scale Fisheries Academy (VC #42505), registered as a commitment by the civil society organization Mundus maris, was started in 2018 in Senegal. The curriculum was developed through a participatory process with a large array of stakeholders, including men and women, who identified their priorities for the curriculum. The academy provided a space for reflection training, co-production of knowledge, experimentation, social and technological innovation and mutual enrichment. The aim was to strengthen local capacities by contributing to the implementation of the small-scale fisheries guidelines of the FAO. The academy was on pause during the COVID-19 pandemic but continued in the form of a workshop in November 2021.[45]

Comunidad y Biodiversidad A.C. (COBI), an NGO in Mexico, collaborates with women and men from fishing communities in Mexico to co-create demonstrative models to restore marine ecosystems and science-based fisheries, producing robust citizen science. The process is summed up as listening-designing-developing-implementing-learning together, ensuring participation, cooperation and sustainability of coastal communities. COBI registered a commitment (VC #46354) for fishers to use and share their existing knowledge to co-design and implement solutions for resilient communities and healthy oceans under a human rights-based approach in Mexico and scaled up to Latin America and the Caribbean. COBI promotes connection of fishers across the country to incubate and accelerate diverse solutions through the creation and strengthening of a social impact network, which works both on a digital and a personal level.

Sustainable ocean-based economies (SDG 14.7 and beyond)

Sustainable ocean-based economies, or "blue economies", continue to provide opportunities to small island developing States, least developed countries and other countries to build more innovative, diverse and resilient ocean economies. These opportunities are threatened

[44] See www.un.org/africarenewal/magazine/march-2022/morocco-fisherwomen-adopt-new-climate-resilient-practices.
[45] See www.mundusmaris.org/what-we-do/small-scale-fisheries-academy/.

by the continued degradation of ocean biodiversity through cumulative human impacts. Furthermore, enhanced economic activities can additionally degrade ocean ecosystems and species. This is why UNCTAD's Trade and Environment Review 2023[46] calls for a global trade, investment and innovation Blue Deal to sustainably use the ocean. According to UNCTAD, a global Blue Deal could drive more investment into emerging sustainable sectors that could benefit developing countries, such as seaweed farming and plastic substitutes. For example, the global market for seaweed has more than tripled in two decades, increasing from $4.5 billion in 2000 to $16.5 billion in 2020. Further, the COVID-19 pandemic provided lessons in the resilience of existing sectors, where in general exports of ocean-based goods held up better than services, which collapsed by 59 per cent in 2020. This collapse impacted tourism-dependent coastal communities around the world.

Some of these trends are evident in the VCs registered towards SDG 14.7. For example, there is the emergence of new sectors such as blue foods and the blue bioeconomy, which have not been particularly prominent previously. While there are several tourism-related commitments, they are fewer than in previously. Furthermore, while SDG 14.7 is focused on economic development of small island developing States and least developed countries, actions in the VCs related to sustainable ocean-based economic development extended to all countries, both developing and developed. Development of ocean-based economic sectors, ocean innovation, and plans and strategies towards sustainable blue economy transitions are common ways for all countries to implement SDG 14.

The entity types making commitments towards sustainable ocean-based economies include primarily governments, the private sector and intergovernmental organizations (see fig. 20). This target has more private sector commitments than any of the others, likely because private sector participation is part of all blue economy sectors. The top lead organizations making commitments were the European Commission (14 VCs) and the Maritime and Port Authority of Singapore (5 VCs). The top countries registering commitments were Iceland (3 VCs), Norway (3 VCs), Portugal (9 VCs), Seychelles (2 VCs) and Singapore (6 VCs), as well as the European Commission (15 VCs). While some of these commitments have beneficiaries that are small island developing States or least developed countries, the distribution reflects the universal nature of blue economy VCs.

The content of the VCs (see fig. 21) includes actions towards comprehensive blue economy transition (including promoting a blue economy; developing action plans and strategies; improving governance; and considering economic development in the context of marine spatial planning, marine protection and climate change). There were also commitments related to blue economy on a local scale focusing on sustainable livelihoods, as well as several commitments relating to different ways to finance blue economy transition. Blue economy job creation, capacity, technology and skills, information-sharing and promoting innovation also featured in the commitments.

On the blue economy sectors, and while not displayed in figure 21, fisheries would be the most numerous due to the over 90 VCs that related to targets 14.4, 14.6 and 14.B. These commitments would have the expected impact of making fisheries more sustainable. However, since they were already discussed in the previous section, they are not included here.

Of the remaining sectors, aquaculture was most numerous, and included the farming of fish, bivalves, seaweed, pearls and multiple species.

[46] UNCTAD (2023) Trade and Environment Review 2023. Building a sustainable and resilient ocean economy beyond 2030. Available at https://unctad.org/publication/trade-and-environment-review-2023.

Figure 20
Distribution of entities in blue economy VCs

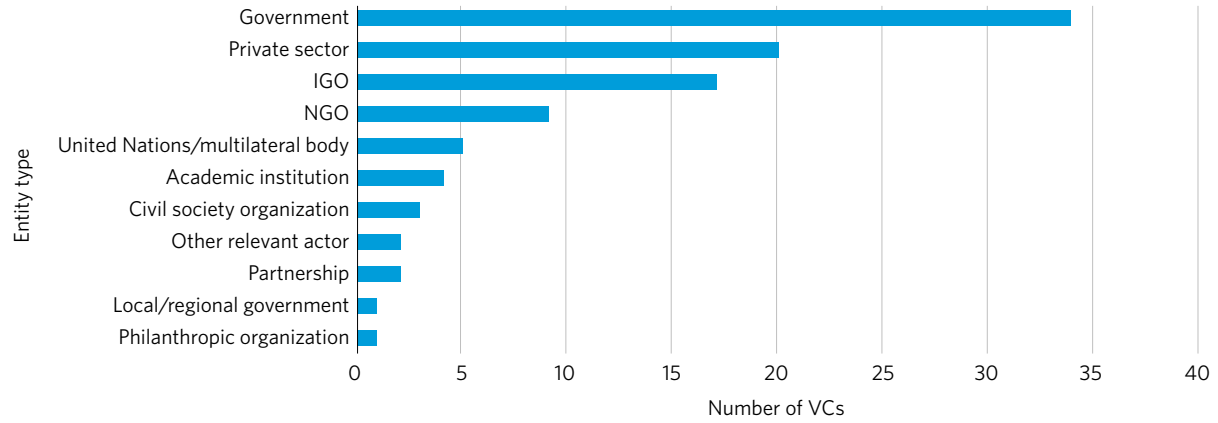
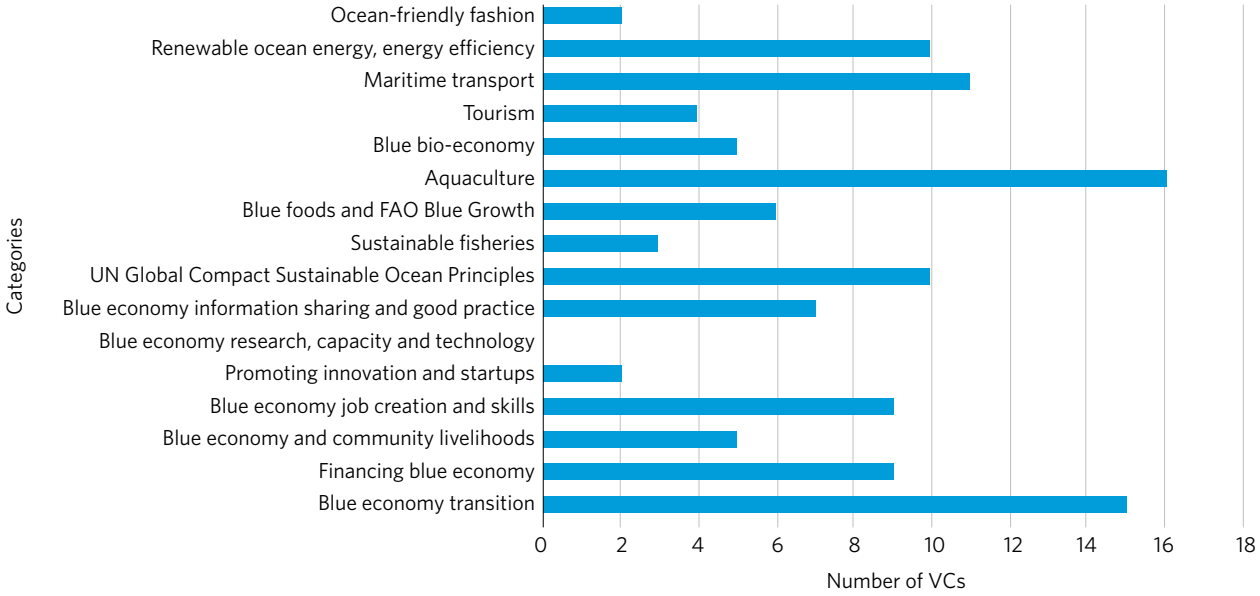


Figure 21
Categories of action for sustainable ocean-based economy VCs



This category also included VCs towards making aquaculture more sustainable and less polluting. The increasing prominence of aquaculture-related commitments is also within keeping with the findings of the 2024 FAO The State of World Fisheries and Aquaculture 2024 report, which noted that for the first time, aquaculture production surpassed that of capture fisheries.[47]

While some of the aquaculture VCs were aimed at providing support for developing the sector, for example by the FAO (e.g. VCs #49102,

[47] See www.fao.org/newsroom/detail/new-aquaculture-record-offers-way-for-ending-hunger-without-harming-marine-environment—fao-fisheries-chief/en.

#46095, #46098, #46103), or support from the European Union to FISHGOV.2 to improve food security, livelihoods and wealth creation in sustainable fisheries and aquaculture in Africa (VC #46886), there were also several smaller local-scale projects. They included the Revitalization, Expansion, and Diversification of Agriculture and Fisheries Project in Samoa (VC #46886O), which seeks to ensure COVID-19 preparedness and socioeconomic recovery, particularly for unemployed women and youth. The project includes implementation of sea-grape farms across 20 villages in Upolu and Savaii. Successful harvesting has reinvigorated the potential for sea grapes as an income-earning opportunity and export commodity for Samoa. Capacity was strengthened through training workshops across the 20 villages to introduce new farming techniques. The expanded infrastructure also aims to increase and diversify aquaculture and mariculture stocks and community distribution.[48]

Slightly overlapping with both fisheries and aquaculture was the category of blue foods,[49] which include animals, plants and algae harvested from marine or freshwater environments. The FAO Blue Growth projects in this category also contained a variety of actions towards more sustainable fisheries and aquaculture. The blue bioeconomy category also overlapped somewhat, but involves turning aquatic biomass into food, feed, nutraceuticals, pharmaceuticals, cosmetics, energy, packaging, clothes and much more.[50] These terminologies are largely new and did not commonly appear in the VCs registered at or after the 2017 Ocean Conference. This is also the first time that actions relating to biotechnology have been explicitly included in the VCs.

For example, the Aquatic Blue Food Coalition (VC #47361, as supported by Iceland), highlights the most recent scientific evidence that demonstrates blue foods' potential importance to contribute to ending hunger and malnutrition, tackle climate change and conserve biodiversity. The coalition has a growing number of members that include governments and a wide range of other entities.[51]

FAO Blue Growth Initiative to increase economic benefits for small island developing States (VC #42102) has also progressed significantly over the last 4 years. The Blue Growth Initiative is a major area of work for the FAO, with projects in implementation or in development in over 30 countries, including 8 small island developing States. Within the Initiative, FAO provides financial support for three regional Blue Growth projects in small island developing States: Caribbean countries to develop an aquaculture sector including seaweed and aquaponics, African small island developing States to access financial resources to make the transition to a Blue Growth economy and in the Pacific for some countries to develop a seaweed sector.

Other blue economy sectors included were renewable ocean energy and energy efficiency (a category with an increased number of VCs since the 2017 Ocean Conference); maritime transport, including low emission and decarbonized shipping, low-carbon fuels and traditional watercraft; tourism; and ocean-friendly fashion.

The UN Global Compact Sustainable Ocean Principles[52] were also registered as a VC and received an additional 9 signatories in the registered commitments (VCs #45939, #46470, #46481, #46524, #46526, #46572, #46678, #46974, #47000). The Sustainable Ocean Principles aim to provide a framework for responsible business practices across ocean sectors

[48] See www.samoagovt.ws/2022/12/press-release-redsaf-project-undp/.
[49] See www.nature.com/immersive/d42859-021-00055-6/index.html.
[50] See https://oceans-and-fisheries.ec.europa.eu/ocean/blue-economy/blue-bioeconomy-and-blue-biotechnology_en.
[51] See www.unfoodsystemshub.org/food-systems-coalitions/aquatic-blue-food-coalition/en.
[52] See https://d306pr3pise04h.cloudfront.net/docs/publications%2FSustainable+Ocean+Principles.pdf.

THE UNITED NATIONS GLOBAL COMPACT SUSTAINABLE OCEAN PRINCIPLES

The nine principles are listed below. For the full text associated with the principles, see https://d306pr3pise04h.cloudfront.net/docs/publications%2FSustainable+Ocean+Principles.pdf.

A full list of signatories to the principles is available at https://unglobalcompact.org/take-action/ocean/signatories.

OCEAN HEALTH AND PRODUCTIVITY

Principle 1: Assess the short- and long-term impact of their activities on ocean health and incorporate such impacts into their strategy and policies.

Principle 2: Consider sustainable business opportunities that promote or contribute to restoring, protecting or maintaining ocean health and productivity and livelihoods dependent on the ocean.

Principle 3: Take action to prevent pollution affecting the ocean, reduce greenhouse gas emissions in their operations to prevent ocean warming and acidification, and work towards a circular economy.

Principle 4: Plan and manage their use of and impact on marine resources and space in a manner that ensures long-term sustainability and take precautionary measures where their activities may impact vulnerable marine and costal areas and the communities that are dependent upon them.

GOVERNANCE AND ENGAGEMENT

Principle 5: Engage responsibly with relevant regulatory or enforcement bodies on ocean-related laws, regulations and other frameworks.

Principle 6: Follow and support the development of standards and best practices that are recognized in the relevant sector or market contributing to a healthy and productive ocean and secure livelihoods.

Principle 7: Respect human, labour and Indigenous peoples' rights in the company's ocean-related activities, including exercise appropriate due diligence in their in their supply-chain; consult and engage with relevant stakeholders and communities in a timely, transparent and inclusive manner; and address identified impacts.

DATA AND TRANSPARENCY

Principle 8: Where appropiate, share relevant scientific data to support research on and mapping of relevance to the ocean.

Principle 9: Be transparent about their ocean-related activities, impacts and dependencies in line with relevant reporting frameworks.

and geographies, serving as a common reference point on ocean sustainability. All companies, large or small, can become signatories to the principles, as long as they commit to taking action to promote the well-being of the ocean for current and future generations. Currently, there are over 150 companies that have signed the Sustainable Ocean Principles, spanning 30 countries and 35 industries. Together, they have a market capitalization of EUR 1 trillion.[53] These principles, if adhered to, represent considerable momentum towards sustainability by ocean-related business.

Several countries registered commitments to complete sustainable blue economy transition strategies. For example, Tokelau, a territory of New Zealand, is on track to complete its first Blue Economy Roadmap and Action Plan 2025–2030 (VC #47420), following a December 2023 field visit and consultations held with stakeholders and the taupulega (council of elders) of the three atolls – Atafu, Nukunonu and Fakaofo. Through the Roadmap, Tokelau can ensure that its food supplies and potential ocean-based industries, such as fishing and tourism, are managed in a way that preserves the health of marine ecosystems while also fostering economic growth and resilience. The document will include a stocktake of marine sectors such as fisheries, aquaculture, maritime and coastal tourism, shipping, ports and marinas, renewable energy and marine conservation. Based on this assessment, the taupulega formed a vision across blue economy focal components, their goals to be achieved by 2030, and their priority solutions.[54]

Finance for transitioning to a sustainable ocean-based economy remains an obstacle for many countries. The VCs contained several examples of blue economy finance that could provide useful options for countries. For example, The Nature Conservancy has designed an innovative 10-year programme in partnership with the Global Fund for Coral Reefs, Impact Funding for BahamaReefs, to facilitate the development of and investment in projects and businesses that contribute to the resilience of coral reefs and surrounding communities in the Bahamas (VC #46080). The goal of the BahamaReefs programme is to facilitate the development of and investments in innovative financial mechanisms and reef-positive businesses that contribute to the resilience of coral reefs and adjacent communities. The programme will encourage sustainable financing by leveraging private sector investments to complement public and philanthropic funding.[55] A similar blended finance mechanism has been set up for the Mesoamerican Reef region, also funded by the Global Fund for Coral Reefs (VC #46115). MAR+Invest aims to invest in market solutions that contribute positively to the health and resilience of coral reefs and the reef-dependent communities in the region.[56]

The SWEN Blue Ocean fund, a venture capital fund to invest in start-ups that provide solutions to help support ocean health, was launched in scientific partnership with the French Institute for Ocean Scienc in June 2021 (VC #45979). With an aim of raising EUR 120 million, the fund closed a year and a half later in March 2023, having exceeded this amount and raised EUR 170 million, demonstrating that there is promise in ocean investing.[57]

The European Commission's BlueInvest platform continues to assist small enterprises to put innovative products and services from the blue economy on the market and increase investment in the sustainable blue economy (VC #46843). BlueInvest is enabled by

[53] See https://unglobalcompact.org/take-action/ocean/communication/sustainable-ocean-principles.
[54] See www.undp.org/samoa/stories/tokelaus-blue-economy-roadmap-track.
[55] See www.nature.org/content/dam/tnc/nature/en/documents/ImpactFundingForBahamaReefsFactsheet.pdf.
[56] See https://mar-invest.org/.
[57] See www.blueoceanspartners.com/post/swen-s-blue-ocean-fund-final-close-at-170m.

the European Maritime and Fisheries and Aquaculture Fund, which runs from 2021 to 2027.

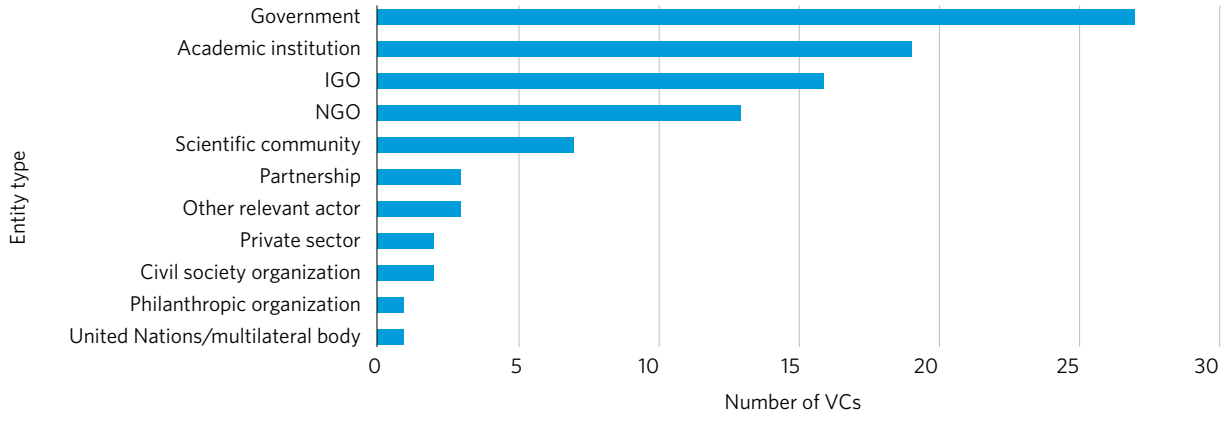
Science, knowledge, capacity and technology (SDG 14.A)

The Global Ocean Science Report 2020,[58] published by IOC UNESCO, provides the latest available global data on ocean science. According to this report, ocean science remains underfunded, and technical capacity for ocean science remains unequally distributed around the world, made worse by the short-term ad hoc nature of ocean funding. Management of ocean data and information and open access to such data, was also found lacking in countries. The United Nations Ocean Decade, which started at the time of the launch of the Global Ocean Science Report, will have hopefully improved funding, capacity and technology for ocean science, as well as the ability for data sharing. Within the 90 VCs listed in this section, there are several commitments of finance, enhancing capacity for ocean science, as well as improvement of data collection, quality and open sharing. The Ocean Decade also received several VCs, and there is some overlap the Ocean Conference VCs and Action for the Ocean Decade. Notably, there are also commitments related to deep sea science, which is a relatively new area of scientific research. These commitments are further discussed in the box in this section.

The most common entity types registering commitments relating to science, knowledge, capacity and technology were governments, followed by academic institution, IGOs, NGOs and the scientific community. The most common lead organizations were the European Commission (12 VCs), Singapore (3 VCs), Japan Agency for Marine-Earth Science and Technology (JAMSTEC) (3 VCs) and the Norwegian Agency for Development Cooperation (3 VCs). The most common country registering VCs was China (12 VCs), along with the European Commission (12 VCs).

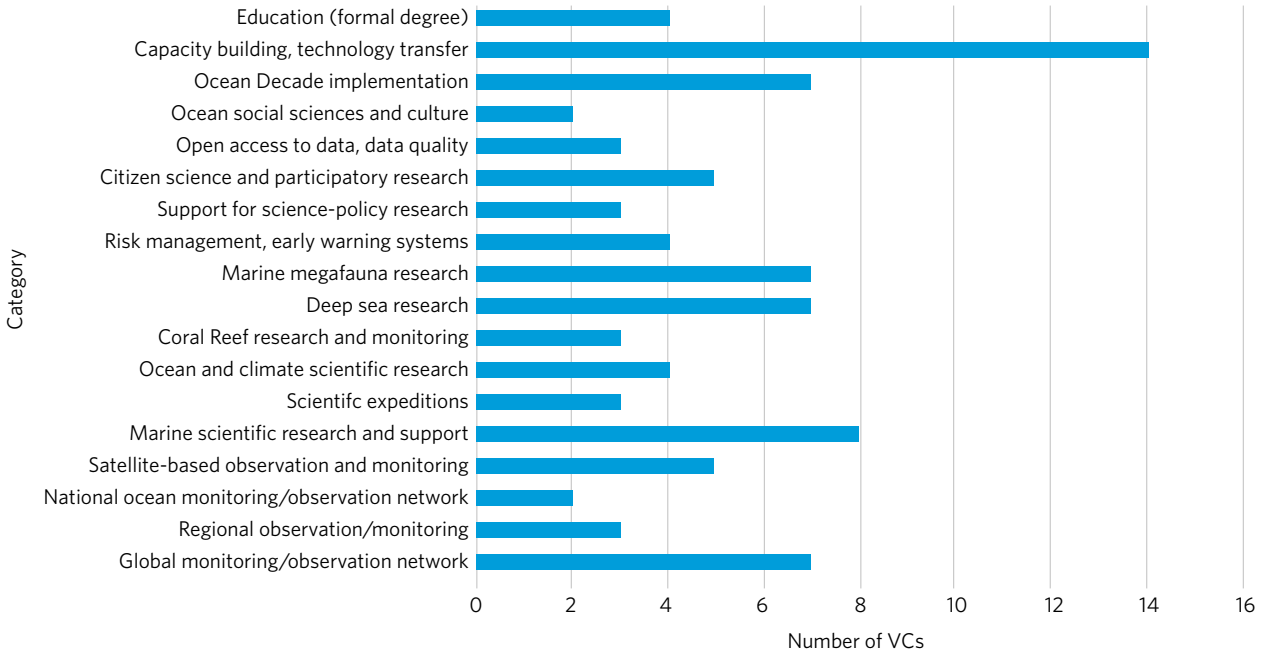
There are many categories of actions under SDG 14.A (see fig. 23), which relate to ocean observation at a variety of scales from global to regional and national; types of marine scientific research from coral reefs to marine megafauna, climate and ocean, and the deep sea; and various types of capacity-building and education.

Figure 22
Distribution of entities with VCs towards SDG 14.A



[58] IOC-UNESCO. 2020. Global Ocean Science Report 2020–Charting Capacity for Ocean Sustainability. K. Isensee (ed.), Paris, UNESCO Publishing. Available at www.unesco.org/en/articles/global-ocean-science-report.

Figure 23
Categories of action in VCs relating to SDG 14.A



The largest category by far was related to capacity-building in marine scientific research and technology transfer. While capacity was the main focus of the commitments made, there were a few commitments for which technologies featured either as a component of the main commitment or as a commitment of their own. One example was the development and testing of uncrewed autonomous technologies with multiple partners by a private sector entity called 3D PARS (VC #42215), as well as the WMO-IOC Regional Marine Instrument Centre for the Asia-Pacific region operated by the National Center of Ocean Standards and Metrology, China. The Centre is committed to assisting countries with instrumentation (VC #48130). Another example was Hub Azul Portugal, which aimed to promote the transfer of knowledge between academia and companies for ocean innovation (VC #47373).

On the capacity-building side, initiatives ranged from capacity-building for developing countries in the international seabed area by the Center for Deep Sea Research, China (VC #4811) to capacity enhancement for implementation of SDG 14 in the Pacific Islands by the Japan International Cooperation Agency (VC #48115). The VC titled "EquiSea: The Ocean Science Fund for All" (VC #47892) aims to improve equity in ocean science by establishing a philanthropic fund to provide direct financial support to projects, coordinating capacity-development activities, fostering collaboration and cofinancing of ocean science between academia, government, NGOs and private sector actors, and supporting the development of low-cost and easy-to-maintain ocean science technologies. The initiative is supported by the Ocean Foundation and is moving towards implementation. The Ocean Foundation also reports that it has worked together with the Global Ocean Acidification Observing Network (GOA-ON) (multiple VCs), technology developers and academic researchers to create new and lower cost technology systems for ocean science. One example is the GOA-ON in a Box kit, which reduced the cost of

monitoring ocean acidification by 90 per cent and has served as a model for effective low-cost ocean science.[59]

There were also multiple VCs relating to global ocean observation networks. For example, the Marine Biodiversity Observation Network (VC #42062) is a community of practice that strengthens understanding of marine biodiversity and coordinates monitoring of associated changes over time through scientific observations, thereby facilitating ecosystem conservation, sustainability, and good management practices. The Network links existing national and international research and monitoring efforts, and promotes biodiversity observation efforts, with the intended aim to inform decisions relevant to conservation and the sustainable use of marine resources. The Network is developing the capacity of resource managers, practitioners, and decision-managers to use information about marine biodiversity to address specific targets of the Sustainable Development Goals, such as SDG 14. The Network provides capacity development, including training, on topics such as environmental data science and data management.[60] It also provides online access to global data and information products such as the CoastWatch platform for various marine biodiversity indicators.[61]

The Scientific Committee on Oceanic Research (VC #42174) is another long-term global programme that provides mechanisms for individual scientists to work together on research, observations, and modelling related to policy-relevant ocean science issues. The Committee's capacity development activities include summer schools, the Committee, fellowships for operational oceanography (with the Partnership for Observation of the Global Oceans), and research camps. The Committee has recently provided additional opportunities for early career scientists by inviting early career scientists to join the network through special events and opportunities on the executive committee.[62]

Additionally on global-scale ocean science, World Association of Marine Stations, which brings together the world's approximately 1,000 marine stations and marine station networks, registered a commitment towards enabling better identification of global capacity through the launch of the first Global Atlas of Marine Stations. The Association also aims to support capacity-building and the sharing of expertise to promote equity in ocean science by identifying and developing mechanisms to facilitate access and travel between countries (VC #46352). The Association has made progress on the commitment by producing an up-to-date atlas of over 800 marine stations around the world.[63]

Local observations on environmental – including coastal and marine – phenomena are recorded through the Local Environmental Observer Network, the establishment of which was a commitment recorded in VC #42073. Already operating for some time for climate observations in Alaska, recent map-based observations for the ocean include topics such as cetaceans, coral bleaching, storms, invertebrate sightings, sea lice outbreaks, marine pollution and other similar events. This platform brings local observer-based information to a global platform.[64]

Another local-level, science-based collaborative is the Heiltsuk Horizon Maritime Services Limited (VC #42445). The Heiltsuk Nation is an Indigenous Nation on the remote west coast of Canada's British Columbia. The Heiltsuk are ocean people with millennia-old stewardship and seafaring heritage. A partnership between the Heiltsuk Nation and the offshore and marine

[59] See https://oceanfdn.org/initiatives/ocean-science-equity/.
[60] See https://marinebon.org/data-products/.
[61] See https://cwcgom.aoml.noaa.gov/OBIS/.
[62] See https://scor-int.org/.
[63] See https://worldmarinestations.com/the-world-marine-stations-atlas/.
[64] See www.leonetwork.org.

industry private sector company called Horizon Maritime provides coastal communities the vessels, expertise and resources necessary to respond to environmental emergencies. The partnership is building regional prevention and emergency response capacity through a planned Indigenous Marine Response Centre in Bella Bella, British Columbia. The project demonstrates how industry and First Nation communities can work effectively together to protect coastal and marine environments.[65] Most recently, and with support from the Canadian Coast Guard, the Government of Canada will start a pilot project to integrate the Heiltsuk Marine Emergency Response Team as a third-party responder into the federal marine preparedness and response system.[66]

Several countries registered commitments to undertake national marine scientific research initiatives, often with global benefits. For example, the French priority research programme "Ocean and climate: an ocean of solutions", a six-year scientific programme launched in June 2021 is under way and supporting transformative, integrative, bold and forward-looking marine science. The programme is supporting projects in several ocean-related areas, as well as doctoral and post-doctoral researchers.[67] The European Union's Copernicus Earth observation programme is strengthening marine environmental monitoring of climate change through satellite-based observations. The seventh issue of the Copernicus Ocean State Report and its summary were released in 2023 and are available online, providing a comprehensive overview on the state, variability and change of the global ocean for scientists, members of the blue economy, decision makers and the public. The latest edition of the Ocean State Report details several unusual patterns across ocean systems, including, among others, changes in ocean circulation currents, intensifying marine heatwaves and unexpected biological production events.[68]

At the second Ocean Conference, the European Union committed to exploring the feasibility of a possible transdisciplinary science-policy interface for ocean sustainability, an Intergovernmental Panel for Ocean Sustainability (IPOS) (VC #46831). This initiative is now in its seminal phase, focusing on the development of its concept, structure and pilot projects. Leading to the 2025 Conference, the IPOS initiative is organizing a series of key events aimed at codesigning its framework. An event titled "Shaping IPOS: Southern perspectives on the science-policy interface" took place during the Ocean Decade Conference in Barcelona in April 2024. It is expected that IPOS will be launched at the third United Nations Ocean Conference in Nice, France in 2025.[69]

[65] See https://heiltsukhorizon.ca/.
[66] See https://tc.canada.ca/en/campaigns/protecting-our-coasts-oceans-protection-plan/stronger-incident-prevention-response/launching-heiltsuk-marine-emergency-response-team.
[67] See www.ocean-climat.fr/.
[68] See https://marine.copernicus.eu/.
[69] See https://ipos.earth/.

FOCUS ON DEEP-SEA RESEARCH

The deep ocean is increasingly a focus on VCs related to scientific research, but also some VCs related to the management of marine ecosystems. These VCs collectively expand the scientific knowledge of the deep sea, its ecological role, the impacts threatening it, its potential uses, and management approaches for its protection.

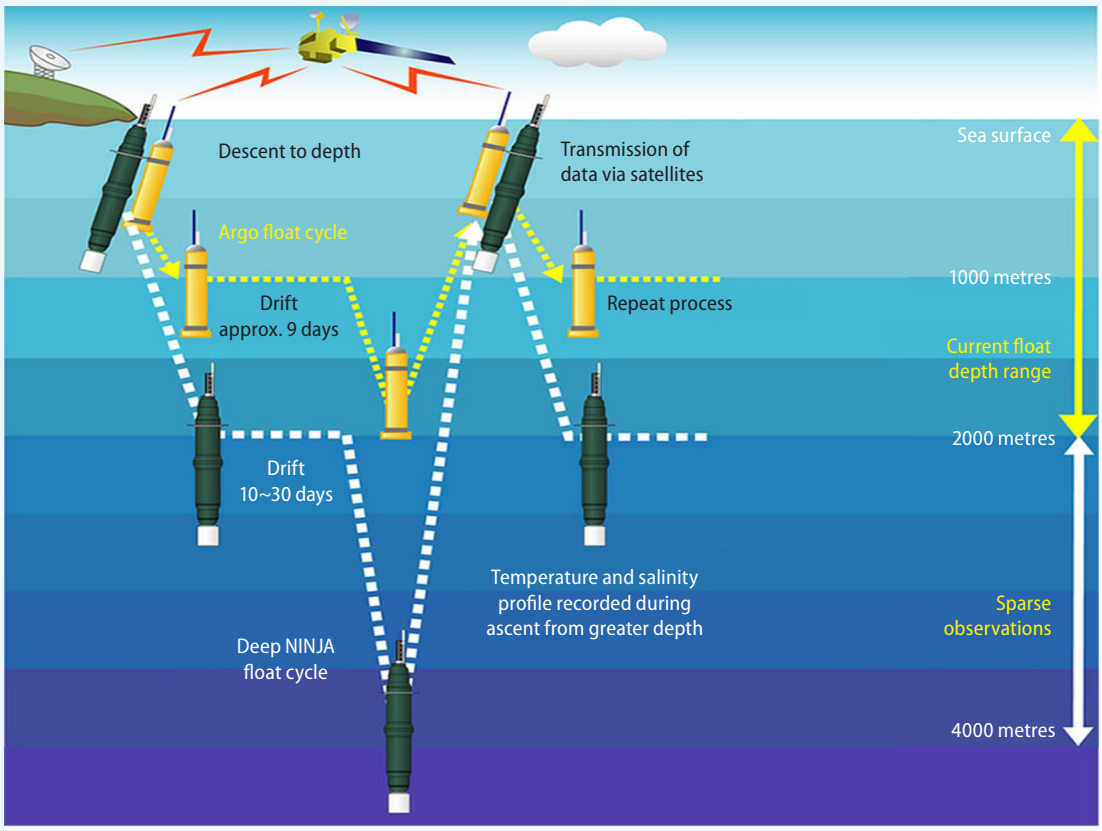
Regarding the deep sea and seabed, the Government of the United Kingdom and Northern Ireland announced the creation of the UK Centre for Seabed Mapping, which seeks to increase the coverage, quality and access of seabed mapping data through collaboration, anywhere in the world (VC #47753). The European Union is developing a monitoring and supervising system for the deep sea through its Horizon Europe programme (VC #46837). Portugal prepared an Atlantic Deep Sea Observatory, based in Azores, which is part of a leading coalition in the Atlantic basin, a network of reference entities and an international hub to manage data and knowledge concerning the Atlantic Ocean. Portugal further committed to reinforce this coalition through the operationalization of the Atlantic Observatory in coordination with the Atlantic International Research Center including the autonomous regions of Azores and Madeira, by the end of 2024 (VC #47390).

The European Union contributed EUR 500,000 to support the Sustainable Seabed Knowledge Initiative, which seeks to fill the gaps in knowledge of seabed ecosystems, their connectivity and the interrelation between endemism of species and conglomeration of seabed minerals (VC #46895). The National Deep Sea Center, China, announced an initiative to support and promote the capacity-building of developing countries in the international seabed area, which would involve both courses and cruise participation (VC #48111). The First Institute of Oceanography, Ministry of Natural Resources, China, registered a commitment to organize and carry out surveys of circum-African mid-ocean ridge habitats through multidisciplinary mid-ocean ridge data analysis. The initiative would assess the ecology and biodiversity patterns of the mid-ocean ridge habitats, their conservation value, vulnerability and adaptation, with the aim of developing a conservation and utilization plan (VC #48128).

Additionally, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) is investigating distribution of marine plastics from the sea surface to deep-sea floor in the western North Pacific. This research contributes to JAMSTEC's Deep-sea Debris Database (VC #46667), which is available to the public.

Regarding the pelagic area of the deep sea, the Ministry of Natural Resources, China, is undertaking a quantitative study on the deep-ocean mesopelagic habitat on the ocean twilight zone, with the aim to determine the key factors in the biogeochemical cycle of the ocean twilight zone and the response of biological and ecological functions to ocean acidification and deoxygenation (VC #48164). JAMSTEC is enhancing its Deep Argo Mission observation network, developing related technologies, and developing and implementing new Argo float-type instrument for measuring ocean turbulence (VC #46668). The JAMSTEC-designed Deep NINJA (pictured below)

is capable of observing the ocean at depths up to 4,000 m globally.[70]



Regarding potential management measures, the SARGADOM project (VC #48064), registered by the MarViva Foundation of Costa Rica, aims to explore and improve the protection of biodiversity and to maintain ecosystem services in two sensitive high seas areas, the Thermal Dome and the Sargasso Sea, and facilitate the design of hybrid ocean governance models. A UNDP-GEF-registered project aims to further improve the stewardship of the economically and biologically significant high seas area of the Sargasso Sea (VC #48177).

Implementation of international law as reflected in the United Nations Convention on the Law of the Sea (SDG 14.C)

The fortieth anniversary of the adoption and opening for signature of the United Nations Convention on the Law of the Sea was celebrated in 2022. The Convention sets out the legal framework within which all activities in the oceans and seas must be carried out, including for the conservation and sustainable use of the oceans and their resources. The international legal framework for the ocean is further complemented by various instruments developed by competent international organizations, including at the regional level, addressing a wide range of ocean-related issues.

[70] See www.jamstec.go.jp/argo_research/dataset/deepninja/dn_en.html.

The fortieth anniversary of the Convention on the Law of the Sea was commemorated as part of a VC registered by UN-Oceans (VC #46984) to issue a publication that would reflect on the Convention's successful contribution to the promotion of the peaceful uses of the seas and oceans; the equitable and efficient utilization of their resources; the conservation of their living resources; and the study, protection and preservation of the marine environment. This publication[71] highlights that through its promotion of the equitable, sustainable and efficient utilization of the ocean, the Convention reflects sustainable development through its legal, economic, social and environmental provisions, and touches on various aspects of what is now encompassed in the 2030 Agenda for Sustainable Development and its SDGs.

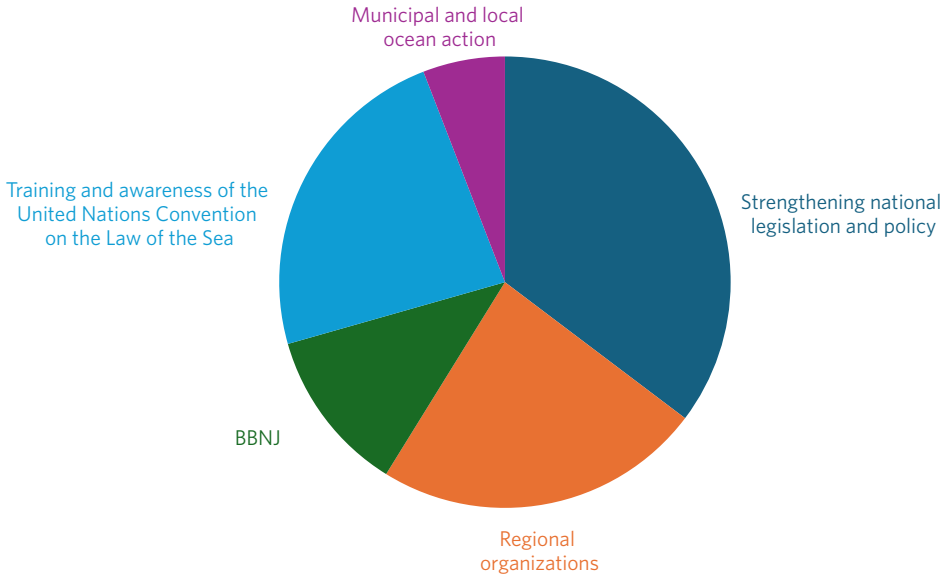
Another key historical occasion in international law was the adoption, in June 2023, of the Agreement under Convention on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (the BBNJ Agreement). The BBNJ Agreement became the third implementing Agreement to the United Nations Convention of the Law of the Sea, in addition to the Agreement relating to the Implementation of Part XI of the Convention and the Agreement for the Implementation of the Law of the Sea Convention relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (United Nations Fish Stocks Agreement). The BBNJ Agreement covers nearly two thirds of the ocean, and once in force, its effective implementation can help further SDG 14 in areas beyond national jurisdiction. Several VCs relate to aspects of the BBNJ Agreement, including VC #46872 on work towards the adoption of an ambitious and inclusive treaty (registered by the European Union), now achieved. In addition, VCs related to deep sea research and management of areas beyond national jurisdiction (see box in previous section), will both underpin implementation, and potentially provide early examples of the application of area-based management tools.

Other developments under international law, as detailed in discussions related to SDGs 14.1 and 14.6, relate respectively to the adoption of UNEA-5 resolution entitled "End plastic pollution: towards an international legally binding instrument" and the ensuing negotiations, still ongoing, towards an international treaty on plastic pollution. The World Trade Organization adopted in June 2022 an agreement on fisheries subsidies. The Review Conference on the United Nations Fish Stocks Agreement was convened in March 2023, and deliberations continue under the International Seabed Authority with a view to adopting regulations on exploitation of mineral resources in the area. In addition, there has been progress in the number of signatories and parties to key binding legal instruments, such as the Agreement on Port State Measures.

There are approximately 20 commitments related directly to implementation of the United Nations Convention on the Law of the Sea, although it could be argued that all the VCs across all SDG 14 targets take place within the Convention framework. Of those VCs, 35 per cent relate to strengthening national ocean-related legislation and policies. Examples include Nepal's commitment to implementing relevant provisions of the Convention (VC #42082); Norway's commitment to provide support to developing countries in their competence and capacity in implementing the Law of the Sea, through a contribution to the United Nations Office of Legal Affairs (VC #47044); and a commitment by the Parliamentarians for Global Action to promote issues such as peace, democracy and the rule of law, which include protection of the high seas and SDG 14.C (VC #43862).

[71] See www.un.org/depts/los//doalos_publications/9789210018036Unclos40EngWeb.pdf.

Figure 24
Categories of actions in VCs related to SDG 14.C



In regard to training and awareness raising related to the Convention, the VCs include courses related to the implementation of international law as reflected in the Convention by Singapore (VCs #45673 and #46865), and a book on China and the Convention (VC #48169). Regional level actions include commitments by the Baltic Marine Environment Protection Commission (HELCOM) and OSPAR towards updating strategies and action plans (HELCOM VC #43641) as well as their implementation (OSPAR VC #47414). Action is also being undertaken on the municipal and local levels, for example through the joint pledge by the cities of Helsinki and Turku (Finland) to update their joint Baltic Sea Action Plan (VC #47435).

Collectively these commitments, and the others listed in this document, advance knowledge of governments and stakeholders about the Convention and its provisions, and other relevant legal instruments, as well as advances their practical implementation.

Finance in the VCs

Out of the 741 VCs included in this report, a total of 244, or roughly one third, reported on the amount of funding allocated for implementing their VCs. Like the VCs themselves, the funding reported was heterogeneous. The funding across the VCs was reported in several currencies, generally covered multiple years, and in some cases included in-kind contributions and in other cases the only funding that was additional to staff costs and time. In a couple of cases funding aspirations were reported on, and it was often unclear whether these aspirations had been met, although in at least one case they had been exceeded. The sources of funding also varied and covered the entire spectrum of grants and loans, including Official Development Assistance and Aid for Trade, IGOs, the United Nations and multilateral agency funding, which most often originated from Governments; philanthropic and NGO funding; private sector funding; and, in a few cases, innovative funding sources. The latter is discussed in more detail in the section on sustainable ocean-based economies.

Because the variable nature of what was included in the reported funding, and how many years it covered, it is difficult to provide direct figures on the amount of money available for implementing the VCs in total. However, if the figures from all reporting VCs were directly summed up, they amounted to roughly $2.4 trillion, an amount that was spread over multiple years and consisted of both grants and loans. Given the variable reporting, this figure should be treated only as indicative rather than a definitive amount. Also, given that only a third of the VCs reported on funding, the actual figure is certain to be larger. With that in mind, it can be stated that considerable finance has been allocated for implementing the VCs collectively.

The five largest commitments exceeded or equal a billion dollars. The first four were reported by governments, while the fifth is a philanthropic contribution. The commitments are as follows:

1. **240 billion World Bank finance to Government of Bangladesh** for the blue economy and sustainable fisheries (VC #47031). The World Bank reported that the Sustainable Coastal and Marine Fisheries Project led to more than fivefold increase in the number of artisanal vessels with valid registration and licenses to 8,247, as of September 2023. The project is also helping to set up community co-management associations with fishing communities, enabling them to adopt supplementary and alternative livelihoods. In addition, improved monitoring will help sustainability through tracking movement of fishing vessels, helping identify illegal activities.[72]
2. **Setting up the 2021–2027 European Maritime Fisheries and Aquaculture Fund, with a total budget of EUR 6.1 billion ($6.4 billion)** (VC #46823). The fund aims to support innovative projects and effective measures that contribute to the sustainable exploitation, management and conservation of aquatic and maritime resources as well as to food security through the supply of seafood products, to the growth of a sustainable blue economy and to healthy, safe, secure, clean and sustainably managed oceans and seas. Support is provided mainly for countries in the European Union to implement sustainable fisheries and aquaculture-related activities, particularly for the implementation of the European Union's common fisheries policy and the integrated maritime policy.[73]
3. **A commitment of $2 billion by the government of Cambodia** to implement all aspects of SDG 14, particularly marine conservation, protection and sustainable use, as well as monitoring, control and surveillance to combat illegal, unreported and unregulated fishing (VC #42066). The dates for this commitment are between 2017 and 2030. While there are no further details about the financing, the government's third voluntary national review from 2023 reports that Cambodia is on track to meet all SDG 14 targets, although illegal, unreported and unregulated fishing remains a significant challenge.[74]
4. **A commitment by the Kingdom of the Netherlands to build offshore renewable energy in balance with nature and sustainable food production** (VC #47411). This commitment provides EUR 1.7 billion, which is approximately $1.85 billion to compensate for the impacts of wind farms on the Dutch part of the North Sea. The compensation includes biodiversity restoration and sustainable food production, as well as further research into the cumulative impacts of sustainable energy production at sea.[75]

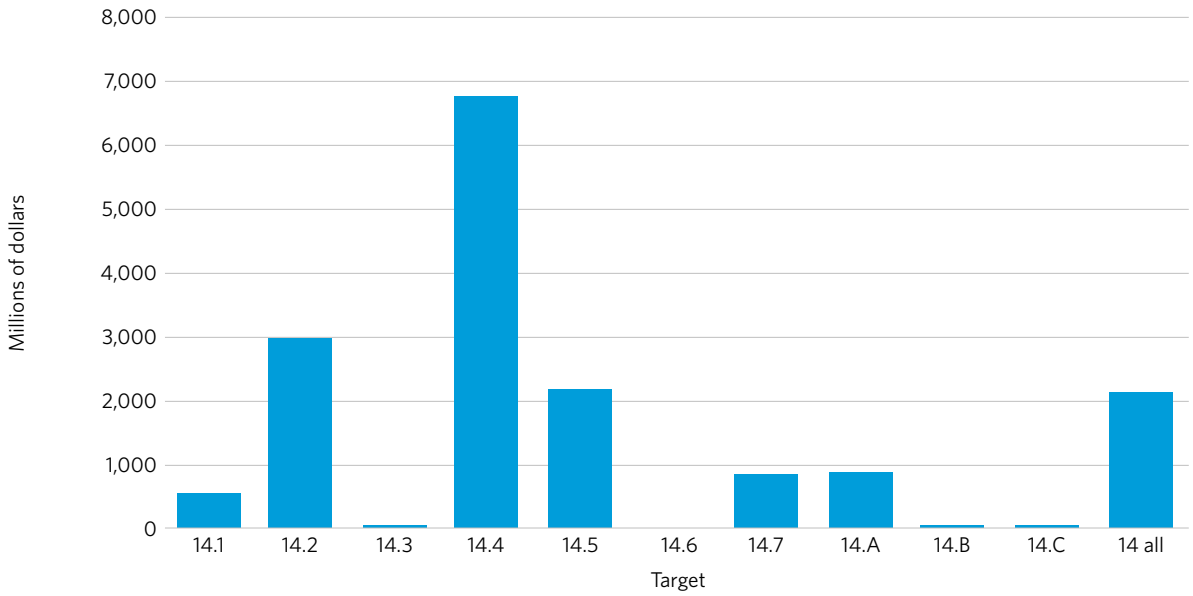
[72] See www.worldbank.org/en/news/feature/2024/06/08/charting-a-course-toward-sustainable-marine-fisheries-in-bangladesh.
[73] See https://oceans-and-fisheries.ec.europa.eu/funding/emfaf_en.
[74] See https://planipolis.iiep.unesco.org/sites/default/files/ressources/cambodia_vnr_2023_eng.pdf.
[75] See https://sdgs.un.org/partnerships/netherlands-build-offshore-renewable-energy-balance-nature-and-sustainable-food.

5. **A $1 billion commitment by philanthropic organizations to protect 30 per cent of the ocean by 2030** (VC #47684). The commitment was made by the Protecting Our Planet Challenge partners that include the Bezos Earth Fund, Arcadia Fund, Bloomberg Philanthropies, Bobolink International Conservation Fund of Canada, Gordon and Betty Moore Foundation, Nia Tero Rainforest Trust, Re:wild, Rob and Melani Walton Foundation, and Wyss Foundation. Through the funding, the partners will collectively support the creation, expansion and management of MPAs and Indigenous and locally governed marine and coastal areas by 2030.[76] The partners are funding conservation action throughout their respective priority areas, such as the Eastern Tropical Pacific Marine Corridor and the Great Bear Sea (see further discussion on this in the section on marine protection, management and restoration).

In contrast, the smallest monetary commitments range from approximately $500 to a couple of thousand dollars. Almost all are by NGOs or civil society, and include coastal and beach clean-ups, environmental education, youth engagement, ocean literacy and mangrove restoration by communities. While the available funding may be small, these commitments also have the potential to be extremely impactful on a local scale.

For a further look at the financial commitments, the largest amount, $240 billion, was removed because its sheer size overwhelmed the funding amounts associated with the other commitments and prevented a reasonable analysis of trends by target. In addition, because this amount is a loan, it may not necessarily qualify as additional funding in the same way as a grant would. Without this amount included, the median monetary commitment associated with the remaining 243 VCs is $866,699. The range was from $500 and the smallest end to $6.4 billion at the highest end.

Figure 25
Total amount of funding in reporting VCs, by target



[76] See https://sdgs.un.org/partnerships/1-billion-protect-30-2030.

Table 2
Total amount of funding per entity type in VCs reporting, as well as average amount of funding by entity.

Entity	Amount (dollars)	Number of VCs	Average amount of funding (dollars)
Government	7,217,225,173	69	104,597,466
IGO	7,007,894,104	36	194,663,725
Philanthropic organization	1,030,025,000	4	257,506,250
Private sector	382,707,241	17	22,512,191
NGO	262,700,816	54	4,864,830
Unied Nations/multilateral body	98,257,933	25	7,930,317
Academic institution	150,650,400	11	13,695,491
Scientific communtity	46,303,249	2	23,151,625
Other relevant actor	9,317,875	10	931,788
Local/regional government	1,701,484	3	567,161
Civil society	795,700	7	113,671
Partnership	744,227	5	148,845

When looking at funding by SDG 14 target, it was evident that the largest amount of funding went to targets 14.4 (approximately $6.7 billion), 14.2 (approximately $2.9 billion), and 14.5 (approximately $2.2 billion) (see fig. 15). The category "14 all" (approximately $2.1 billion) refers to VCs where the funding went to all or several SDG 14 targets equally. The other targets attracted less funding. The VCs associated with target 14.7 had a total of $857 million associated with them, while target 14.1 attracted approximately $563 million. All the cross-cutting targets apart from 14.A (with approximately $893 million allocated to it) had relatively low funding. Targets 14.B (a little over $8.1 million) and 14.C (approximately $2.2 million) had less funding, as did target 14.3 on ocean acidification (approximately $6.1 million). Target 14.6 had no commitments reporting funding that were primarily associated with it. Because all VCs did not report on funding these results cannot be treated as conclusive. However, it seems that issues relating to small-scale artisanal fishers' access to markets and resources, ending harmful subsidies, reducing ocean acidification and implementing international law could benefit from additional funding.

When looking at funding by entity types, Governments, followed by IGOs, provided the largest amount of funding in total, and partnerships and civil society provided the smallest amount. However, this is not to say that small amounts of funding cannot be extremely impactful, particularly at the grass-roots level. An interesting pattern emerges in table 2, where the largest average amount of funding was provided by philanthropic organizations, which registered only four VCs with funding amounts included. This figure is influenced by the large $1 billion commitment to marine conservation, which also highlights the potential of coalitions to be more impactful in providing larger and hopefully more coordinated financing over individual donors. The NGO funding commitments were numerous, but generally involved smaller amounts than those provided by Governments and IGOs. Additionally, the private sector has emerged as a funder of work towards SDG 14, with relatively larger and more numerous contributions when compared to the 2017 United Nations Ocean Conference.[77]

[77] Vierros, M., and Buonomo, R. (2017). In-depth analysis of ocean conference voluntary commitments to support and monitor their implementation. Division for Sustainable Development, Department of Economic and Social Affairs, United Nations. Available at https://sustainabledevelopment.un.org/content/documents/17193OCVC_in_depth_analysis.pdf.

4. Discussion and conclusions

The analysis demonstrates that considerable progress has been made in implementing the voluntary commitments, and that these commitments have had real-world impact. The VCs addressing plastic litter in the marine environment have likely had considerable influence in building momentum towards the UNEA-initiated negotiation for a new legally binding treaty on plastic pollution. Similarly, once the treaty is adopted, these VCs provide practical experience towards its implementation. Actions towards marine conservation and fisheries management have also had tangible impacts on the ground, increasing the area covered by MPAs, and resulting in efforts to create connected corridors for ocean protection. And initiatives such as the UN Global Compact's Sustainable Ocean Principles, which have had a great deal of buy-in from the private sector, can help make ocean-based economies more sustainable. Of particular note are the many grass-roots actions towards marine management, including by small-scale fishers, which provide new and innovative tools towards participatory ocean conservation.

The analysis also highlights the arrival of new areas of ocean action, such as coral reef restoration, which is now starting to become more mainstream, although techniques are still under development. Blue foods and blue biotechnology, as well as a larger number of commitments on aquaculture, herald new areas for potentially more sustainable ocean economies. The relatively large number of VCs relating to the deep sea also indicates that with the adoption of the BBNJ Agreement, there is a new impetus towards enhancing deep ocean science that can inform conservation and management. And with new ocean observation technologies becoming available, data collection is likely to get more automated and easier, with instrumentation being able to reach deeper depths.

This iteration of VCs also contained several interesting solutions for financing ocean action. The VCs included blended finance, impact investment and a venture capital fund, all of which can provide lessons for the future. Several ocean-related funds have also provided considerable finance towards various aspects of SDG 14. The joining together of philanthropic organizations for more impactful ocean funding is a positive trend, which provides harmonization in funding and will eliminate duplication of effort.

The VCs collectively contained a considerable amount of funding towards the implementation of SDG 14, with the largest amounts of funding from governments, IGOs and philanthropic organizations. Of the VCs reporting on this aspect, actions towards sustainable fisheries, marine conservation, management and restoration collectively received the most funding, while ocean acidification, small-scale artisanal fisheries, implementation of international law and elimination harmful fisheries subsidies received the least. These numbers may not be conclusive, given that only approximately one third of the VCs including amounts of funding. But they highlight the fact that some SDG 14 targets are relatively more underfunded than others.

Scaling up some of the promising activities and innovations contained in the VCs could be considered going forward, and the VCs provide rich examples of projects that have worked well and that provide bright spots in ocean conservation. It is important to keep track of what has worked and make such solutions widely available.

There are still some areas that could be further enhanced, such as increased work on issues related to ocean equity, human-rights based approaches, broader participation of youth, women and marginalized groups, as well as the improved participation of Indigenous

peoples. More VCs could explore transdisciplinary approaches to find solutions for problems related to ocean socioecological systems, and consider co-creating solutions with traditional knowledge holders for improved ocean management.

Of the SDG 14 targets, SDG 14.6 continues to receive the fewest commitments. It is important to attract more VCs that work towards removing harmful fisheries subsidies in order to reverse the decline in sustainable fisheries. Other gap areas include the further development of marine biotechnologies as part of sustainable ocean-based economies and the use of genetic technologies in ocean observation and monitoring.

Finally, keeping track of the VCs and their implementation will be difficult without improved reporting. The reporting percentage has declined since the last analysis of VCs, and it is important that there is accountability associated with registering commitments. Without traceability and accountability, it is difficult to assess whether commitments are being achieved, and what their overall impact is, making ocean action ad hoc and piecemeal without the possibility of a more coherent strategy. While the inclusivity of the VCs has been extremely successful in attracting diverse and innovative commitments, it is time to consider how a more rigorous follow-up process could be initiated.

24-23653