A closer look at the Voluntary Commitments for SDG 14.3

September 2018

Introduction

In June 2017, the UN hosted the Ocean Conference in New York to support the implementation of Sustainable Development Goal (SDG) 14: *to conserve and sustainably use the oceans, seas and marine resources for sustainable development*. An outcome of the conference was the submission of more than 1400 Voluntary Commitments (VCs) by stakeholders including governments, UN entities, non-governmental organisations, academic institutes, private sector and civil society (assessed in September 2018). Many of these VCs cover multiple SDG 14 targets[1] and as of September 2018, 240 of the registered VCs have identified SDG 14.3 (*'Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels'*) as one of their targets.

To more effectively followup on and facilitate the advancement of these VCs, the UN created nine topical Communities of Ocean Action, which are managed by Ambassador Peter Thomson, UN Special Envoy for the Ocean. For this effort, David Osborn (IAEA) and Bronte Tilbrook (CSIRO Australia) were invited to coordinate the Community of Ocean Action on Ocean Acidification (OA).

The following is a statistical analysis of the nature and scope of the 240 VCs that address SDG 14.3. It is hoped that this analysis provides some clarity as to the scale and diversity of these VCs, to facilitate coordination, and to also identify gaps in coverage and/or content.

Statistical analysis of Voluntary Commitments for SDG14.3

1- Focus on ocean acidification

The majority of VCs submitted against SDG 14.3 respond to multiple targets and SDGs, reflecting the close interconnection between the SDG 14 targets and close links to other SDGs, particularly SDG 13; *'Take urgent action to combat climate change and its impacts'*. Ocean acidification is not necessarily the main focus of every VC. In fact, many VCs that identified with SDG 14.3 do not mention ocean acidification at all. For this anlaysis, we identified the VCs more directly focused on OA. The distinction between direct and indirect foci was done to facilitate clarity, collaboration, networking and communication within the COA on OA, depending on stakeholder interest. It does not in any way prioritize one VC over another

[1] The other targets within the SDG14 Goal are the following (Boteler et al., 2017):
14.1 Prevent and reduce marine pollution
14.2 Sustainably manage marine and coastal ecosystems
14.3 Minimise impacts of ocean acidification
14.4 End overfishing and illegal, unreported and unregulated fishing as well as destructive fishing practices
14.5 Conserve marine areas
14.6 Remove harmful fisheries subsidies
14.7 Increase economic benefits for Small Island Developing States and Least Developed Countries
14.a Increase scientific knowledge, develop research capacity, and transfer marine technology in support of biodiversity and small island developing states
14.b Increase market access for small-scale artisanal fishers
14.c Enhance conservation by implementing international law

VCs *'directly focused'* on OA were defined as:

- initiatives that specifically address (either in part or exclusively) OA and its impacts on the marine environment. For example research projects that either generate new data on OA or increase OA capacity or awareness .

A VC *'indirectly focused'* on OA was defined as:

- initiatives that address ocean health, or take actions that indirectly reduce OA or its impacts. For example, included in this category are the 24 VCs that address marine protected areas (MPAs), except when OA was mentioned as being an integral part of the management plans (three cases). Those VCs committed to reducing CO_2 emissions were also placed in this category unless ocean acidification was mentioned (three cases). Even though these VCs are directly contributing to reducing OA by tackling its root cause, they are usually part of more encompassing projects related to energy transition for countries and businesses and respond to several targets and goals, in particular SDG 13. VCs which were difficult to categorize from the information provided were also included in this group.

Of the 240 registered Voluntary Commitments for SDG 14.3, 61 initiatives (25%) were identified as directly focused on OA. Among these, 36 % (21 initiatives) focused solely on OA (Figure 1.1).

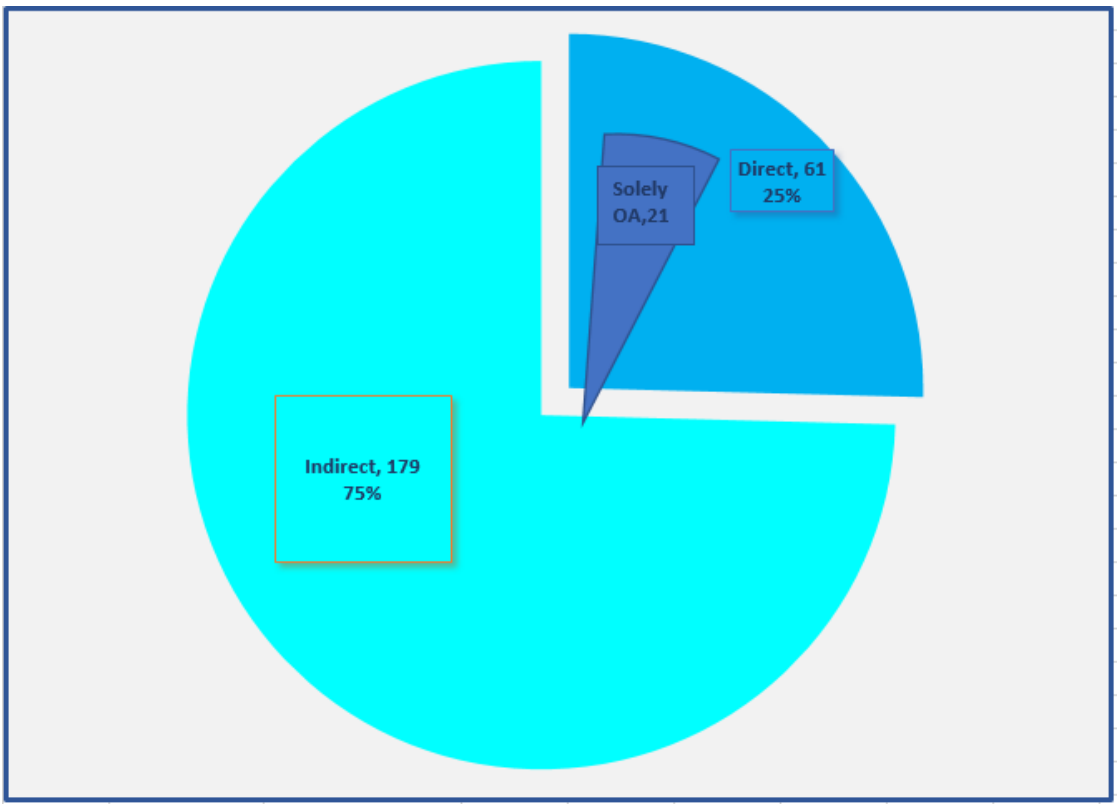

Figure 1.1: Level of focus on ocean acidification (all 240 VCs)

2- Categories of Voluntary Commitments

The following categories, as adapted from Williamson and Widdicombe (2018), were used to define the types of actions the various VCs are focused on.

Mitigation: VCs that commit to reduce CO_2 emissions (root cause of OA);
Adaptation: VCs that reduce others stressors (e.g. overfishing or eutrophication), VCs committing to improve other conditions (e.g. marine protected areas), VCs that raise local pH by chemical means or through vegetation-based systems. Blue carbon projects were also included in this category;
Monitoring: VCs that measure OA/climate change (CC) in the field and/or provides access to monitoring data;
Risk assessment: VCs that improve the scientific understanding of the impacts of OA/CC, including socio-economic impacts, through experimental studies or scenario projections (modeling);
Governance: VCs that tackle legal aspects or take a policy approach to address OA/CC or more broadly ocean health (e.g. marine pollution), for example by integrating OA with other climate policies;
Communication: VCs that focus on raising awareness and communicating the impacts of OA/CC to a wider audience, and/or to resource managers, policy makers and stakeholders. Also VCs that provide a platform for different stakeholders to connect/network;
Education: VCs that focus on educating students and school children about OA and/or climate change and/or ocean health in general;
Capacity building: VCs that focus on increasing the scientific capacity to measure and study OA/CC in countries; and
Advocacy: VCs with more targeted communicative activities/goals towards a particular cause or policy
The keyword 'communication' was also systematically used for these VCs.

To illustrate the categories above, Table 2.1 lists one or two examples of VCs which address each type of action.

Mitigation	- VC #16733: Addressing acidification, by *Iceland Ministry for the Environment and Natural Resources* - VC #16814: Decrease impacts of ocean acidification, by *Ministry in charge of environment, Algeria*
Adaptation	- VC #17932: Addressing Ocean Acidification in Washington State, by *Washington State, Marine Resource Advisory Council* - VC #20828: Advancing science and partnership in the Phoenix Islands Protected Area*, by PIPA Scientific Advisory Committee*
Monitoring	- VC #16542: Enhancing global ocean acidification monitoring and research, by *Global Ocean Acidification Observing Network (GOA-ON)* - VC #17470: Enhancement of ocean observation network toward achievement of SDG14*, by Ministry of Education, Culture, Sports, Science and Technology, JAMSTEC（Japan Agency for Marine-Earth Science and Technology）*
Risk assessment	- VC #17506: Research program on Acidification, by *Ministry of the Ecological and Inclusive Transition (MTES), France* - VC #17440: Enhancing research and awareness on the impact of ocean acidification and climate change on tropical marine ecosystems, by *Centre of Marine and Coastal Studies (CEMACS), Universiti Sains Malaysia*
Governance	- VC #15195: OA Alliance Commitment to Combating Ocean Acidification, by *International Alliance to Combat Ocean Acidification*

Communication	- VC #20274: Supporting the International Alliance to Combat Ocean Acidification, by *Ocean Conservancy* - VC #21620: Promote the sharing of information and foster collaboration among those working in and supporting ocean conservation, *by Marine Watch International*
Education	- VC #18286: Coastal Acidification: Rate, Impacts and Management (CARIM) research project, by *New Zealand National Institute for Water and Atmospheric Research*
Capacity building	- VC #15877: Building International Capacity to Monitor, Understand, and Act on Ocean Acidification, by *The Ocean Foundation* - VC #15274: Development and strengthening of the regional research and monitoring network, as part of global efforts, on the ecological impacts of ocean acidification on coral reef ecosystems in the Western Pacific and its adjacent regions in support of the SDG 14.3, *by Intergovernmental Oceanographic Commission of UNESCO, via its Sub-Commission for the Western Pacific (WESTPAC)*
Advocacy	- VC #19434: Ocean and climate initiatives alliance, by *Ocean and Climate platform*

Table 2.1: The thematic categories used to define the types of action VCs focus on, with examples.

Figures 2.1 and 2.2 show the categories of VCs among the total VCs submitted and the 61 VCs that directly address OA, respectively. The numbers presented were based on the information provided for each VC. Where appropriate, more than one type of action was identified and the total number in each figure can therefore exceed the number of VCs.

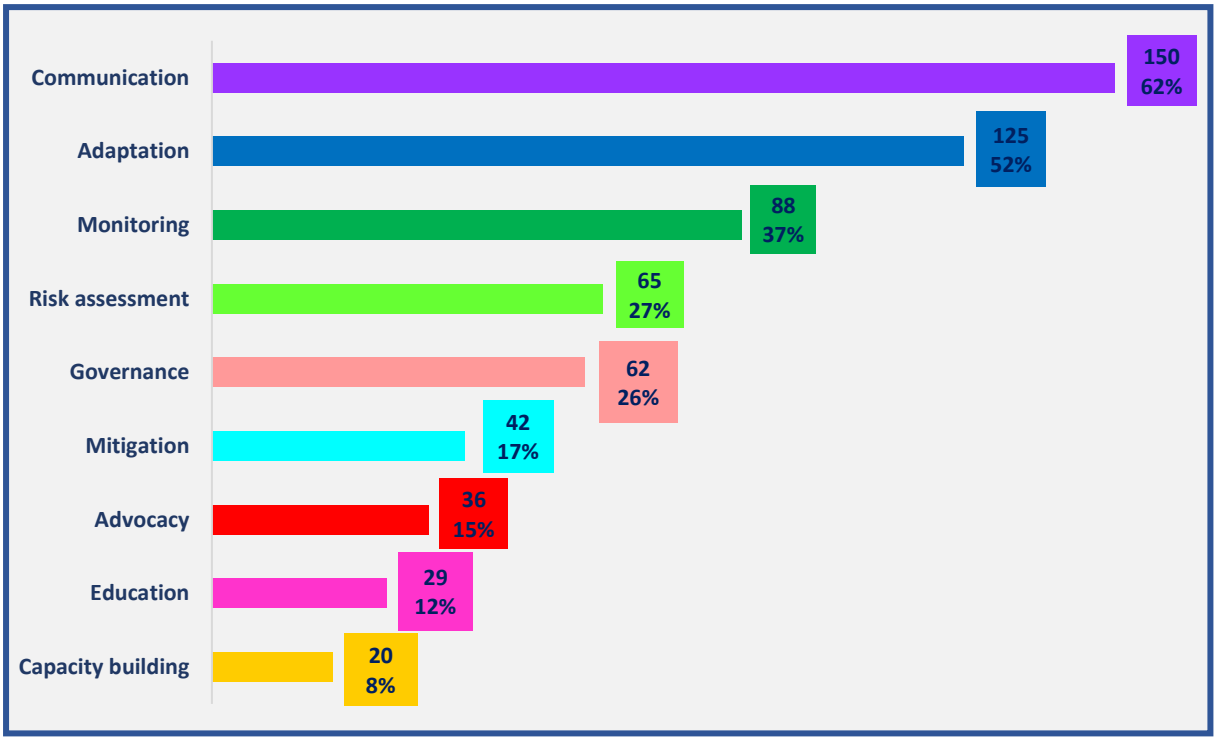

Figure 2.1: Categories of VCs (all 240 initiatives)

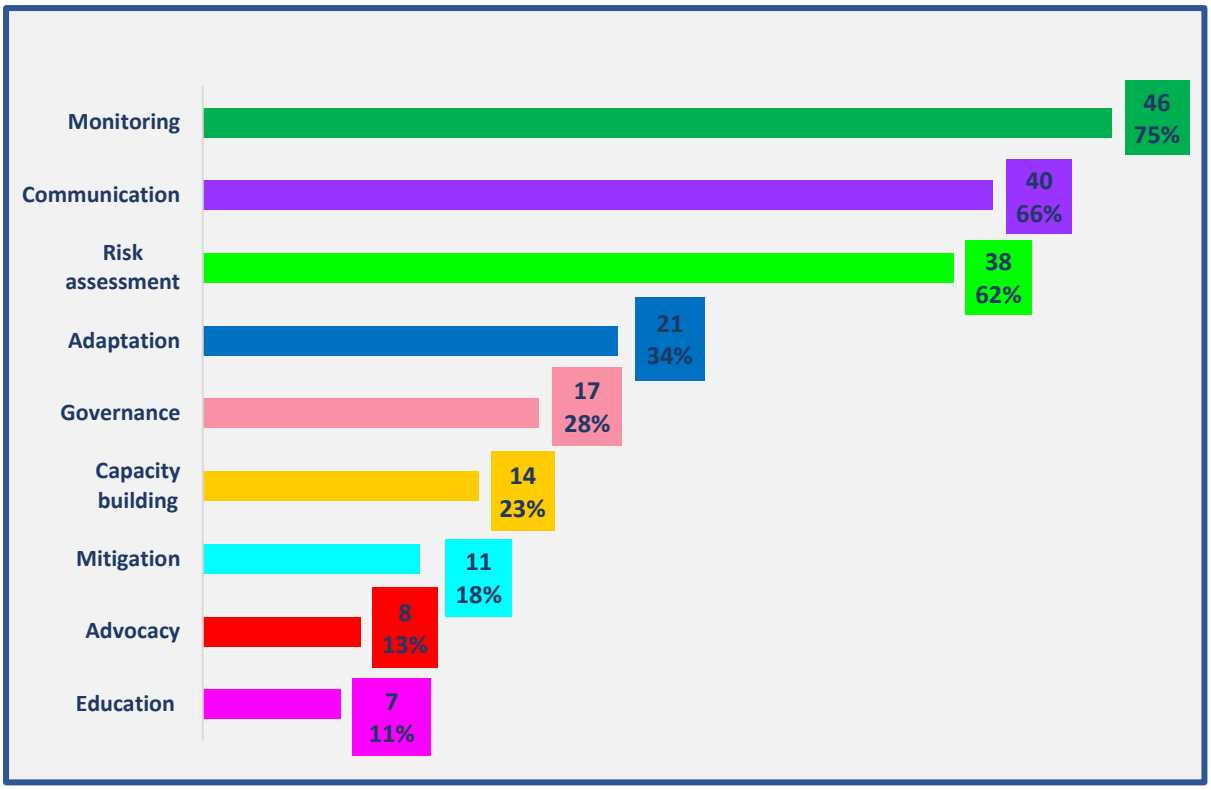

Figure 2.2: Categories of VCs (61 initiatives with a more direct focus on OA)

Of the 240 SDG 14.3 VCs, 150 (62%) address communication, 153 (64%) scientific research (either monitoring and/or risk assessment), and 125 (52%) concern amelioration and adaptation strategies. The high number of VCs focused on research is not surprising for the SDG 14.3 target, which is one of the more technical/scientific targets. This is even more clear from the analysis of the 61 VCs considered directly relevant (Figure 2.2), where 46 and 38 VCs address monitoring and risk assessment, respectively. Fewer VCs address capacity building, governance, advocacy, mitigation and education. Analysis of the 61 most relevant VCs show similar results, but with relatively higher percentages for capacity building and science, and less for projects on adaptation.

The large numbers in Figures 2.1 and 2.2 show that many VCs are broad and address multiple areas of action. It is therefore worthwhile to examine the primary types of action of the 61 directly relevant VCs (Figure 2.3). The primary types of action of the directly relevant VCs are risk assessment and monitoring (52%), represented here in the same category as many VCs address both and it was difficult to assess the main focus. Capacity building emerges as the second most represented theme.

Although Figure 2.2 shows that 66% of VCs incorporate communication, few VCs have communication as their main focus (11%; Figure 2.3). An example of a recent project focused on communication is the Ocean Acidification Information Exchange. New VC submissions that address communication are highly encouraged.

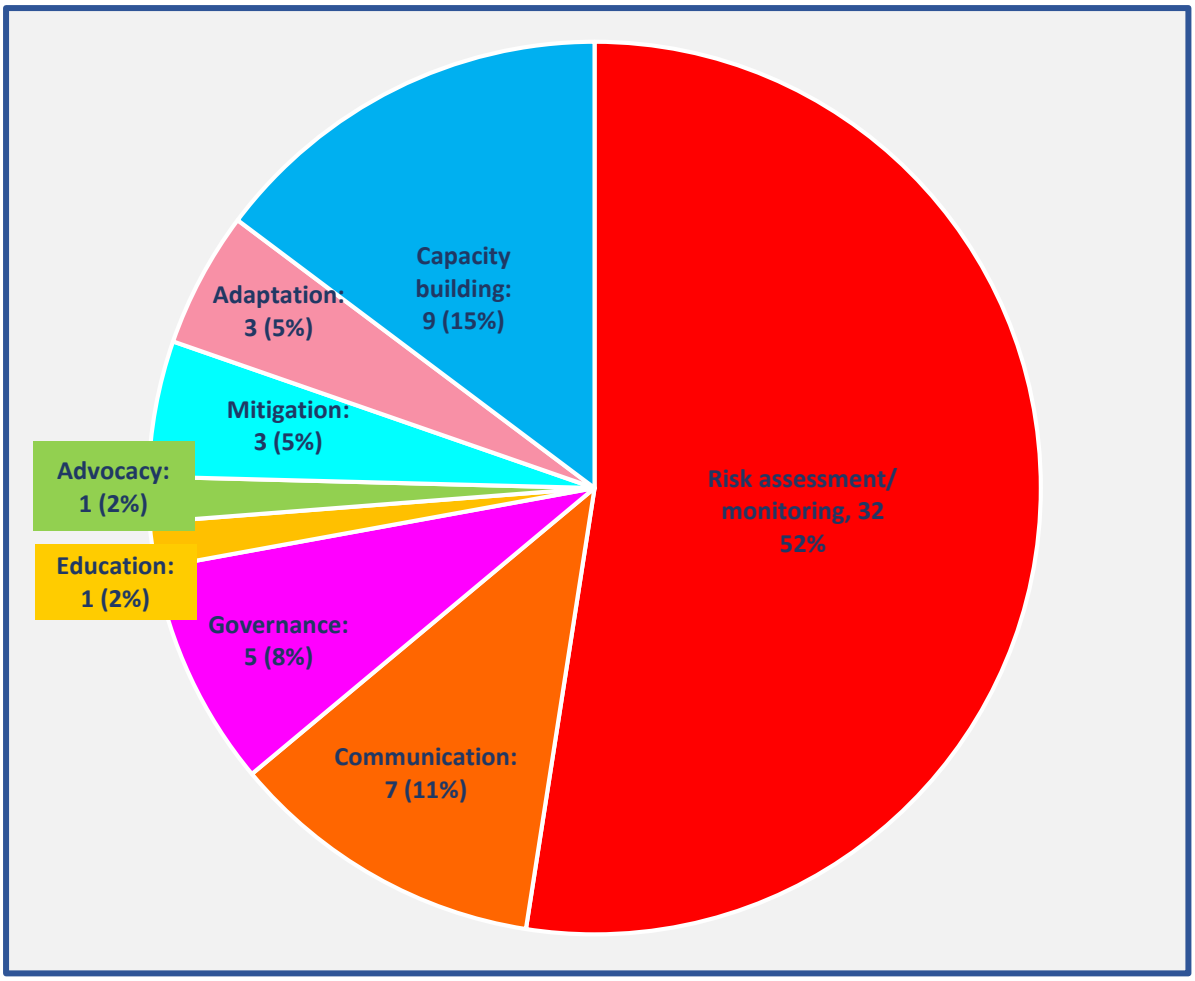

Figure 2.3: Primary type of action of the 61 directly relevant VCs

The low representation of the other types of action is perhaps due to the technical/scientific nature of this particular SDG 14 target. More VCs on these themes, including education, are strongly encouraged.

The low percentage of VCs encompassing governance is expected, since to our knowledge very few VCs are currently focusing their efforts on this type of action.

Very few VCs (3) have adaptation as their primary focus. Several shellfish hatcheries in the US Pacific NW measure and adapt to episodes of low pH and could be encouraged to submit VCs. There are also a few Blue Carbon projects directly connected to OA, e.g. planting of kelp forests nearby hatcheries that may be in a position to submit new VCs. More generally, MPAs could expand in scope to explicitly include OA and climate change impacts in their management plans.

3- SDG14 targets and other SDGs coverage

Of the 61 directly relevant VCs, 21 were submitted as only tackling 14.3. The most common targets[2] to be addressed in addition to 14.3 are those related to marine health and conservation of marine resources (Figures 3.1 and 3.2). These are 14.2 (sustainably manage marine and coastal ecosystems), 14.a (related to biodiversity and increased scientific knowledge and capacity building), 14.1 (marine pollution) and 14.5 (conserve marine areas). This again shows that many VCs (and targets) cover multiple topics.

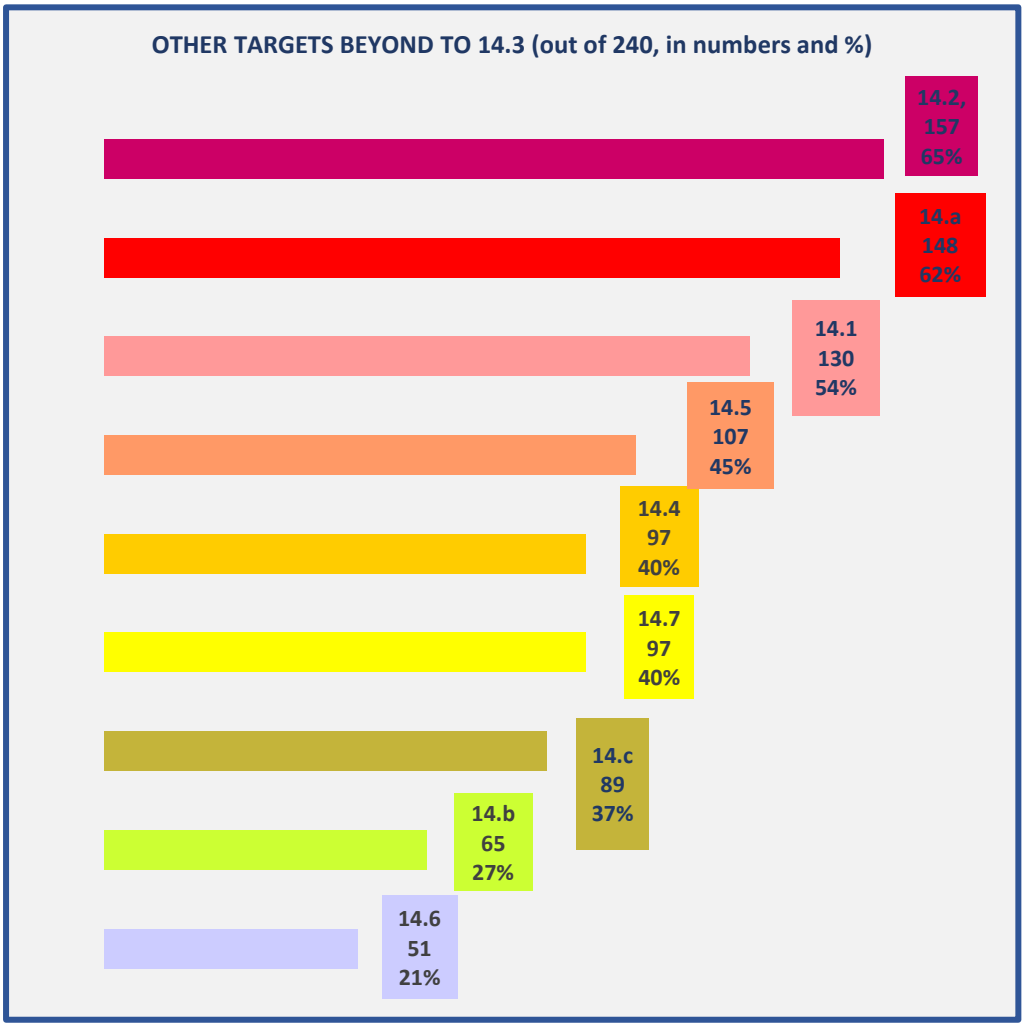

Figure 3.1: Targets covered in addition to 14.3 (all SDG 14.3 VCs)

[2] The other targets within the SDG14 Goal are the following (Boteler et al., 2017):

14.1 Prevent and reduce marine pollution
14.2 Sustainably manage marine and coastal ecosystems
14.3 Minimise impacts of ocean acidification
14.4 End overfishing and illegal, unreported and unregulated fishing as well as destructive fishing practices
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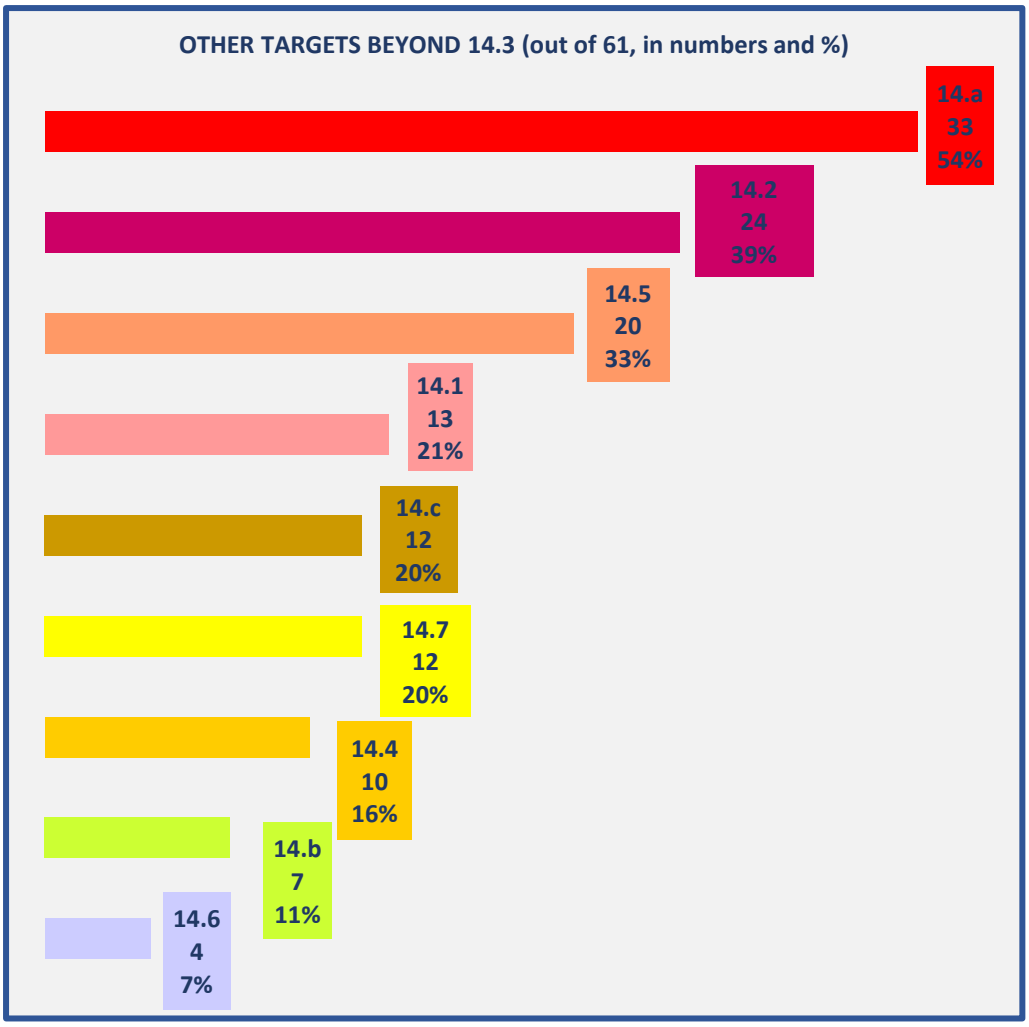

Figure 3.2: Targets covered in addition to 14.3 (for directly relevant VCs)

The most common SDGs[3] to be addressed are SDG 13 ('climate action'; 52 and 48 %) and SDG 17 ('Partnerships of the goals'; 37 and 31 %), for all SDG 14.3 VCs and the VCs directly focused on OA (Figures 3.3 and 3.4).

[3] The other SDGs are:
GOAL 1: No Poverty
GOAL 2: Zero Hunger
GOAL 3: Good Health and Well-being
GOAL 4: Quality Education
GOAL 5: Gender Equality
GOAL 6: Clean Water and Sanitation
GOAL 7: Affordable and Clean Energy
GOAL 8: Decent Work and Economic Growth
GOAL 9: Industry, Innovation and Infrastructure
GOAL 10: Reduced Inequality
GOAL 11: Sustainable Cities and Communities
GOAL 12: Responsible Consumption and Production
GOAL 13: Climate Action
GOAL 14: Life Below Water
GOAL 15: Life on Land
GOAL 16: Peace and Justice, Strong Institutions
GOAL 17: Partnerships to achieve the Goal

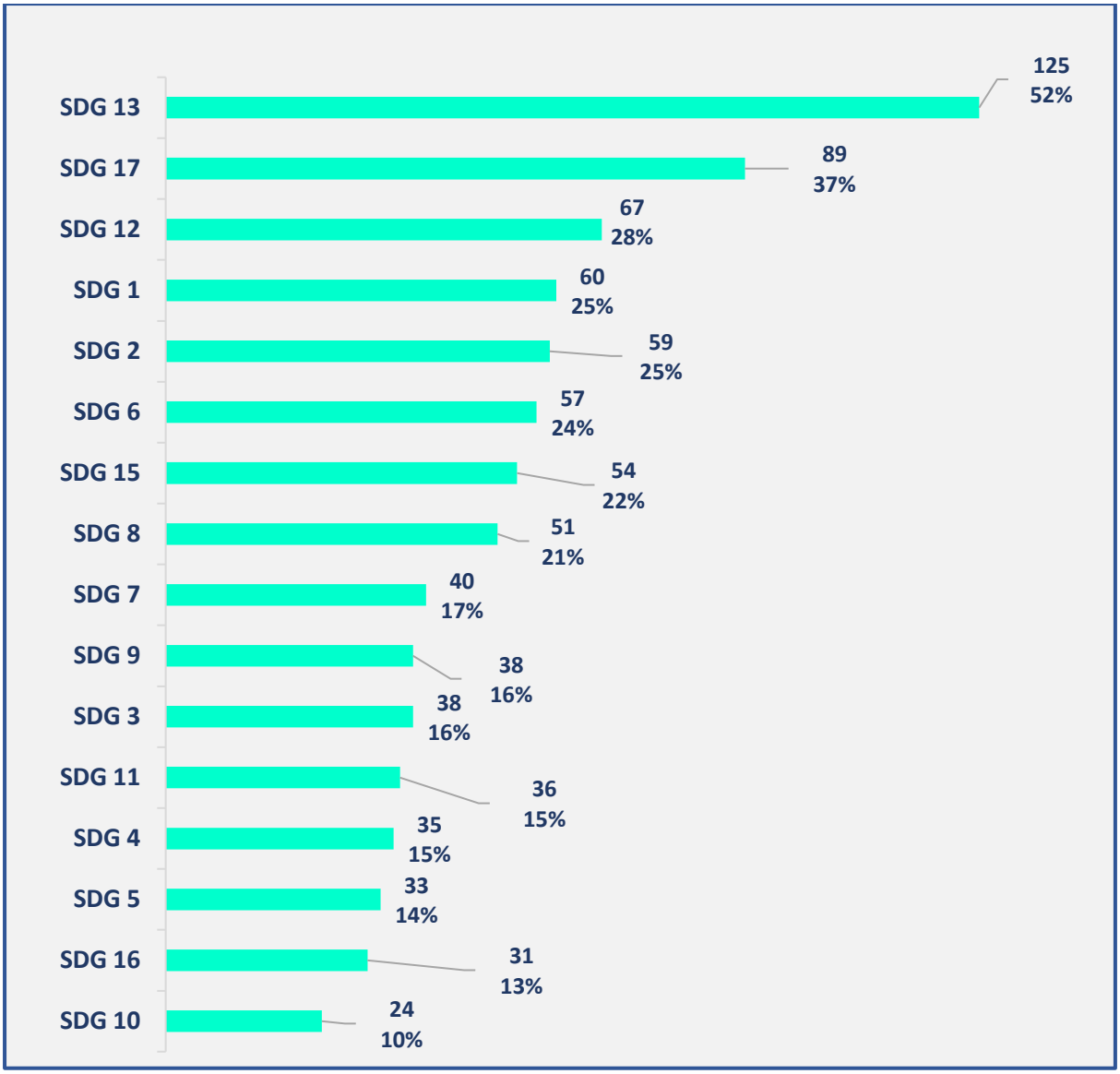

Figure 3.3: Other SDGs covered in addition to 14.3 target (all 240 SDG14 .3 VCs)

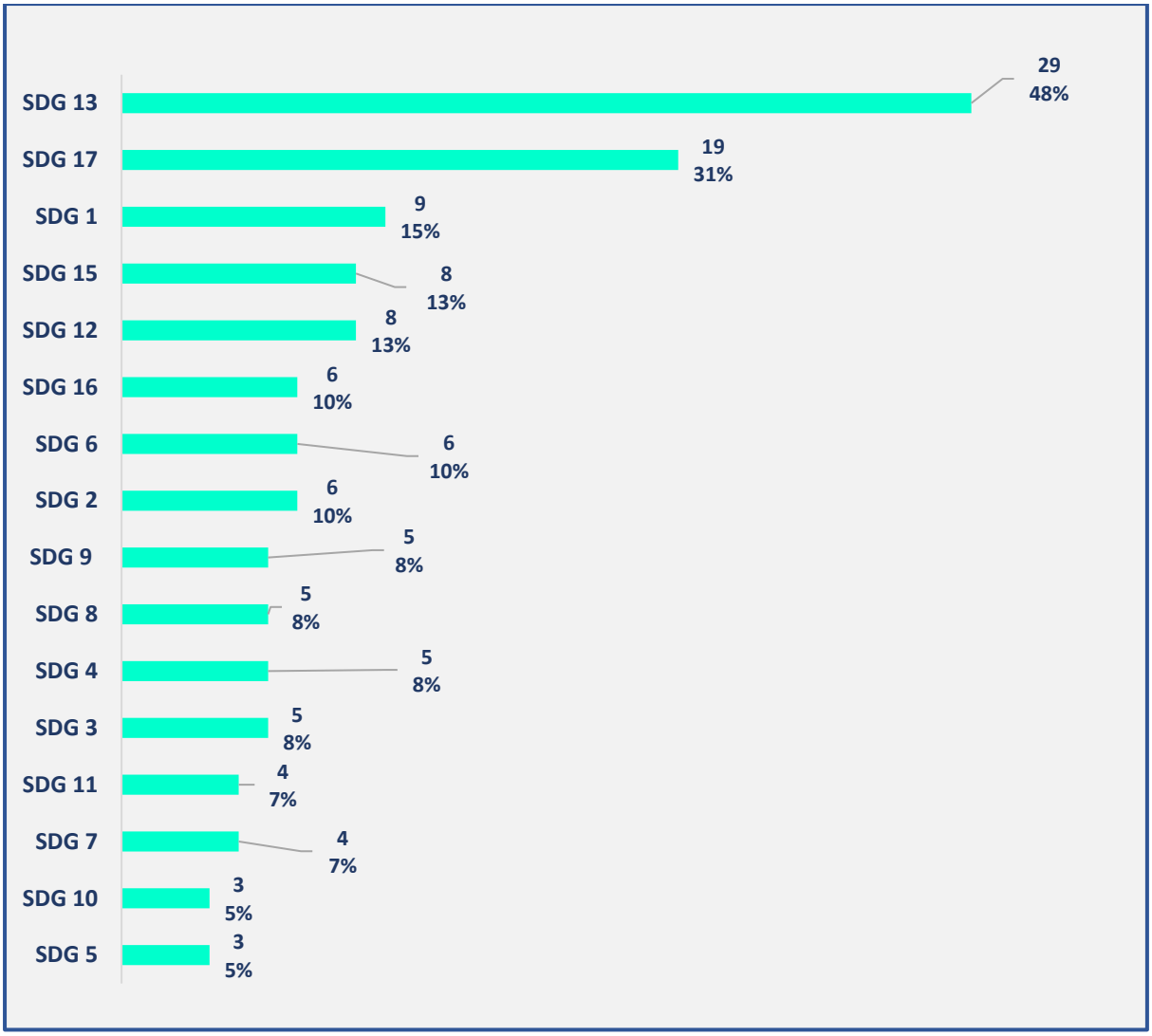

Figure 3.4: Other SDGs covered in addition to 14.3 target (directly relevant VCs)

4- Geographic focus of VCs

The categories[4] identified in the online VC submission form were used to assess the geographic scope of the VCs (Figures 4.1 and 4.2).

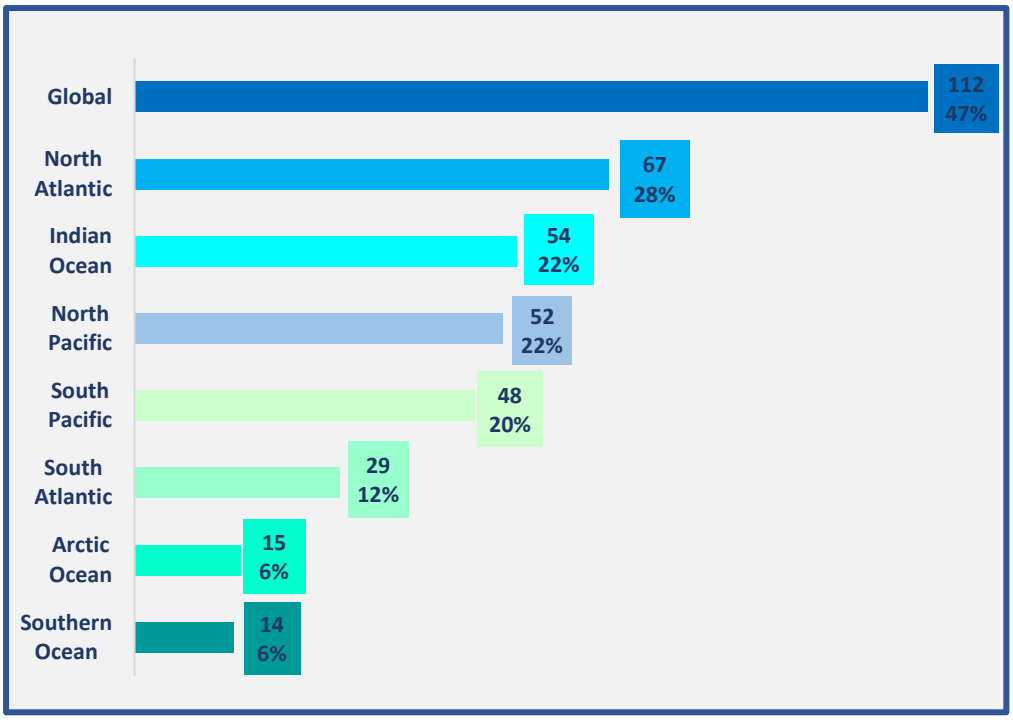

Figure 4.1: Geographic regions (all 240 initiatives)

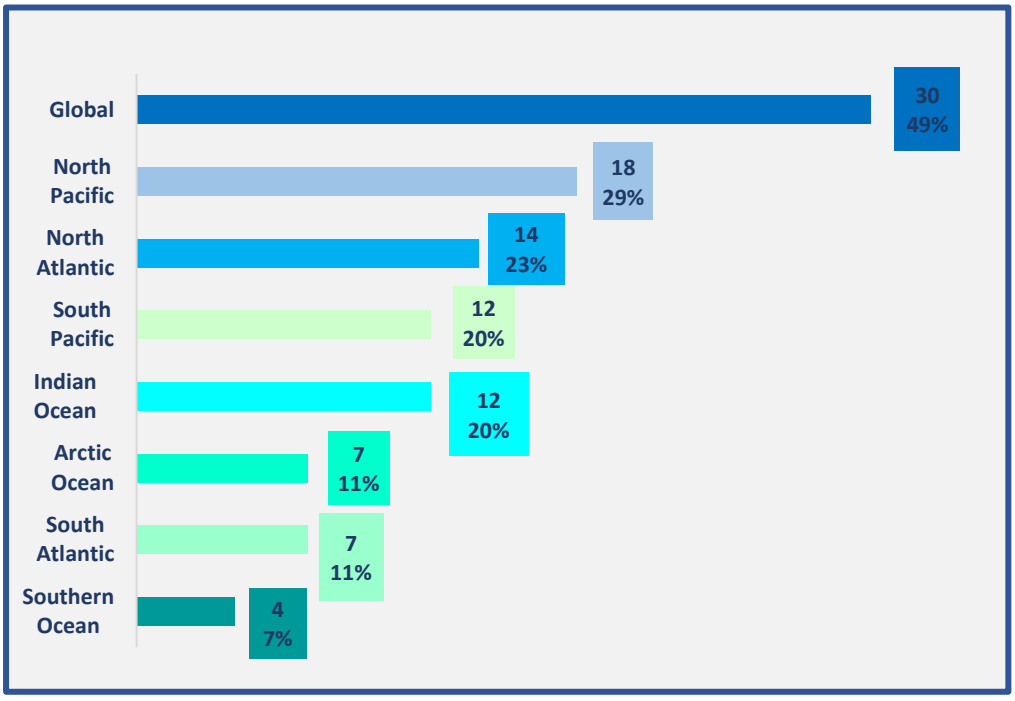

Figure 4.2: Geographic regions (61 VCs of direct relevance to OA)

[4] Again, many submitters have selected multiple regions when submitting their initiatives, which explains why the total numbers exceeds 240.

The geographic distribution of the SDG14.3 VCs is fairly broad, with 47% spanning the globe. Many VCs occur in the North Atlantic (28%), followed by North Pacific (22% of VCs), the Indian Ocean (22%) and the South Pacific (20%). Under-represented regions include the South Atlantic (12%), the Southern Ocean (6%), and the Arctic Ocean (6%), despite the known vulnerabilities of polar regions to ocean acidification. The analysis of the 61 VCs of direct relevance show very similar results, albeit with a larger percentage of VCs active in the North Pacific (29%) and the Arctic (11%), and relatively less in the North Atlantic (23% of VCs).

5- Stakeholder involvement in VCs

Similar to the analysis of Vierros and Buonomo (2017) we assessed the makeup of organisations involved in the SDG14.3 VCs, based on categories identified in the online submission form (Figures 5.1 and 5.2).

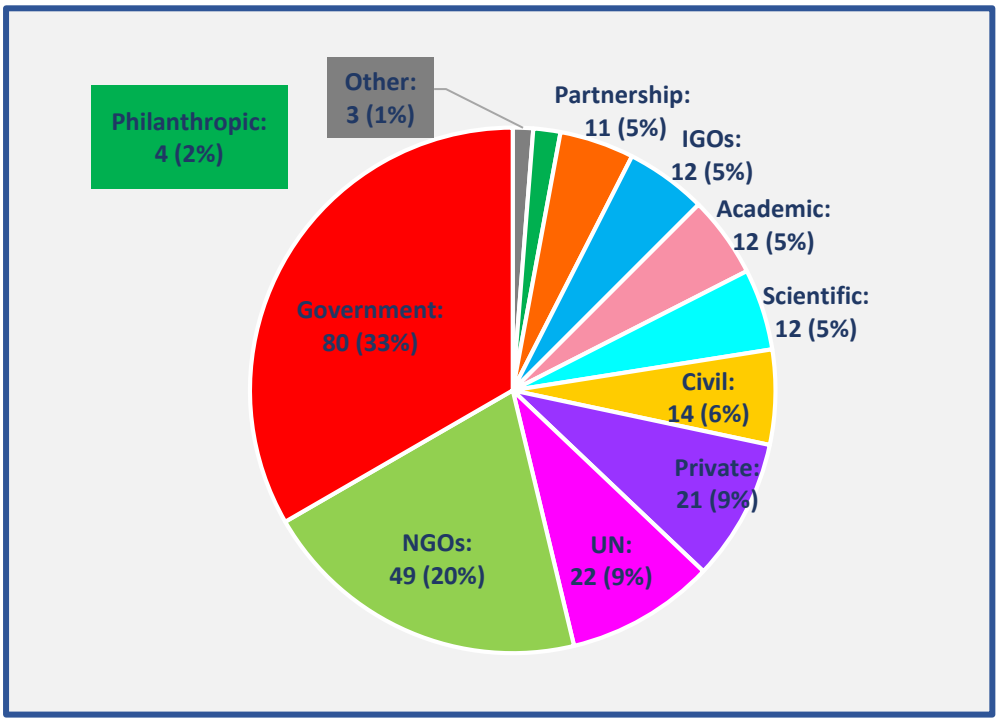

Figure 5.1: VC submitters (all 240 initiaitives)

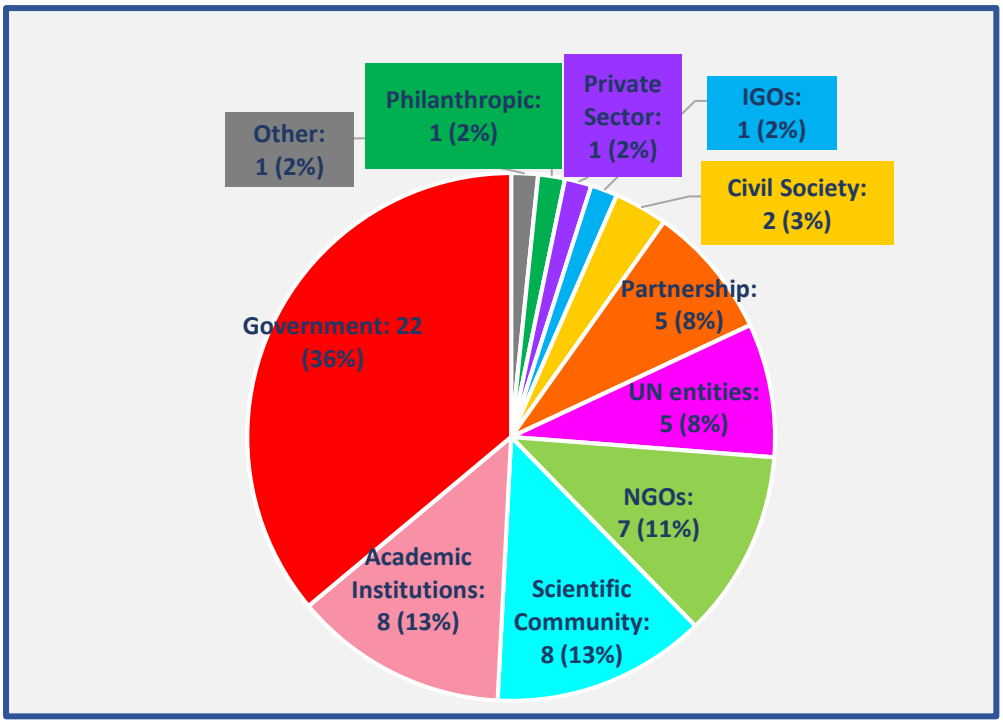

Figure 5.2: VC submitters (out of 61 directly relevant VCs)

Most of the SDG 14.3 VCs were submitted by governmental (33%) and non-governmental organizations (NGOs; 20%). UN organizations (9%), the private sector (9%), civil society (6%), academic institutions (5%), the scientific community (5%) and intergovernmental organizations (5%) are less represented. SDG 14.3 submissions follow the general tendency of VC submissions overall, as most of the 1400 VCs were submitted by governmenal and non-govermental organizations (Vierros and Buonomo R, 2017). The low percentage of submissions from academia and the scientific community may seem surprising for this SDG target which is one of the more technical/scientific targets, and seems contradictory to the results from the thematic analysis presented in Figures 2.1 and 2.2. However, SDG 14.3 submissions do include a relatively higher percentage of submission from scientific entities than other SDG 14 targets (see Vierros and Buonomo, 2017), where typically these categories do not represent more than 3-4% for academic institutions and 1-2% for the scientific community. For VCs directly focusing on OA (Figure 5.2), the proportion submitted by the scientific community and academia is higher (26%).

In addition, the scientific community involved in OA monitoring submitted several joint VCs, e.g. as part of the Global Ocean Acidification Observing Network (GOA-ON), (submitted in the 'Partnership' category). Therefore, many individual scientists are represented through that submission, and may not consider submitting individual VCs in addition to the one from GOA-ON.

As mentioned above, this analysis is based on the information provided in the VC submission, and only one choice is possible. As many VCs are implemented through partnerships of many different actors (even though not specifically indicating that it is a partnership), this does not always reflect all stakeholders involved in the VC. A survey sent out to the SDG 14.3 VC submitters in September 2018 included a more detailed question on stakeholder involvement. Out of 23 responses to the survey, 22 VCs involved scientists, 17 involved policy makers and 16 project managers (Figure 5.3). Nine VCs had citizen participation.

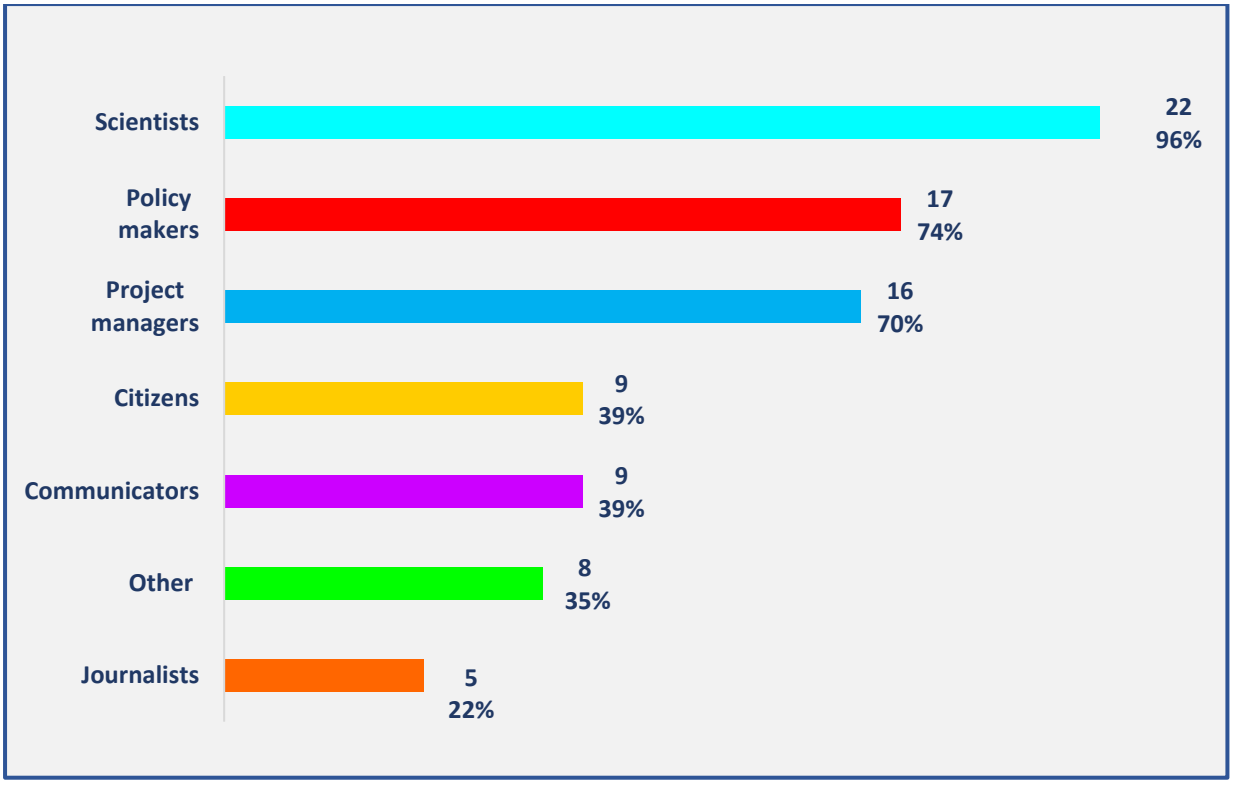

Figure 5.3: Stakeholders involved in the VC (out of 61 directly relevant VCs)

6- A timeline of deliverables from the SDG 14.3 VCs

Following Vierros and Buonomo (2017), the time line of deliverables connected to the SDG 14.3 VCs is shown in Figures 6.1 and 6.2

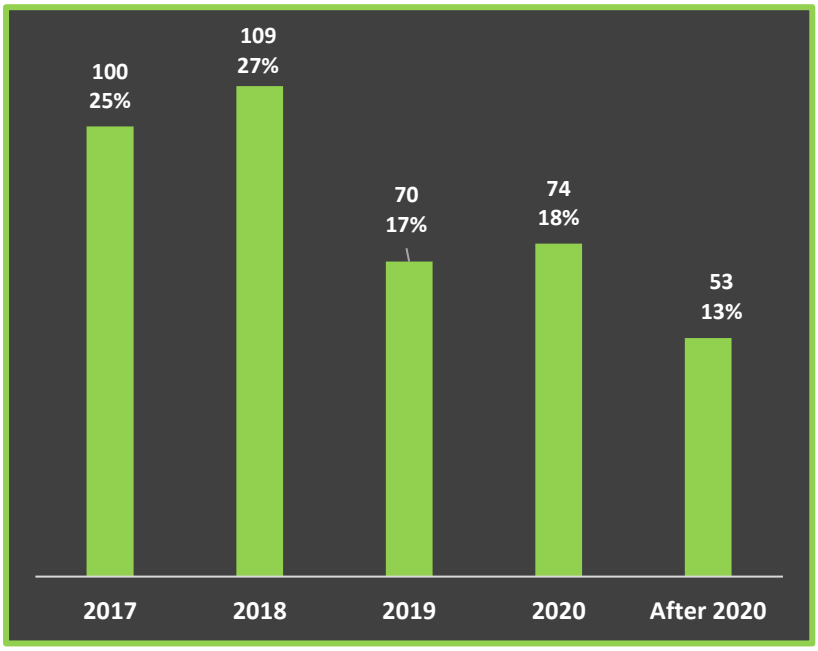

Figure 6.1: Timing of deliverables (all 240 initiatives)

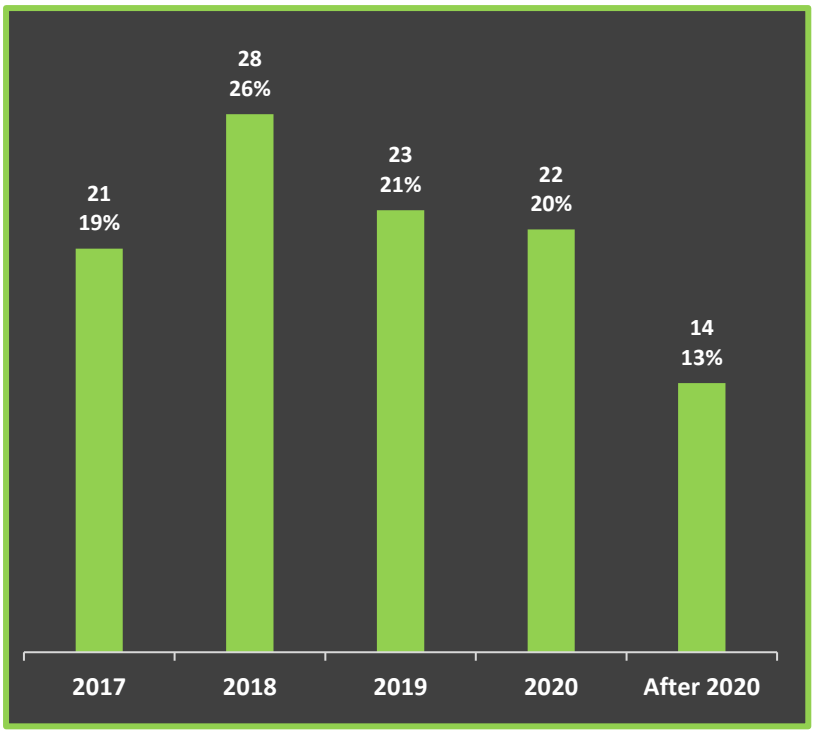

Figure 6.2: Timing of deliverables (VCs of direct relevance to OA)

Most deliverables connected to the SDG 14.3 VCs were planned for the years immediately following the 2017 Ocean Conference (2017/2018; Figure 6.1). The number of deliverables decrease in 2019 and 2020, and further decrease post 2020. Less than 20 % of the submitted VCs have long-term deliverables that extend beyond 2020. This trend may be indicative of lack of financial and/or technical means rather than lack of need or ambition to pursue activities beyond 2020, especially considering the SDGs 'deadline' of 2030. The UN Decade of Ocean Science for Sustainable Development (2021-2030) is also expected to help promote new VC submissions and will contribute to ensuring that this process remain energized and well managed. The analysis of all 240 submitted VCs and the 61 with a more direct focus on OA show similar results (Figure 6.2). In general, the community should be encouraged to continue their VCs after 2020 as a long-term goal for sustainability of their efforts whenever possible, and to make sure that significant progress is made by 2030.

7- Additional results from survey

A survey sent out to the SDG 14.3 VC submitters in September 2018 included a few more questions regarding the scope and progress of the VCs. 23 replies were received. A few interesting findings from these responses are listed below.

- All but one of these VCs are partnering with other organisations to accomplish their deliverables.

- The number of people directly working on the VCs ranges between less than 10 and over 100, with 6 of them involving less than 10 participants (Figure 7.1).

- All 23 indicated that their VC will continue beyond 2020.

- Only one VC is experiencing delayed progress, while the others are either experiencing few delays or achieving very good progress, with their VC on target (Figure 7.2).

- Five VCs indicate no major challenges while 17 are experiencing some challenges but are still confident that they will reach their deliverables. One response finds their VC to be very challenging, with the risk of not achieving their goals (Figure 7.3).

- Roughly half of the VCs estimate that they have between 60 to 100 % of the funds needed to deliver their VC as planned (Figure 7.4).

- Approximately half (48%) of these initiatives generate carbonate chemistry data that could be used to report against the 14.3.1 target indicator.

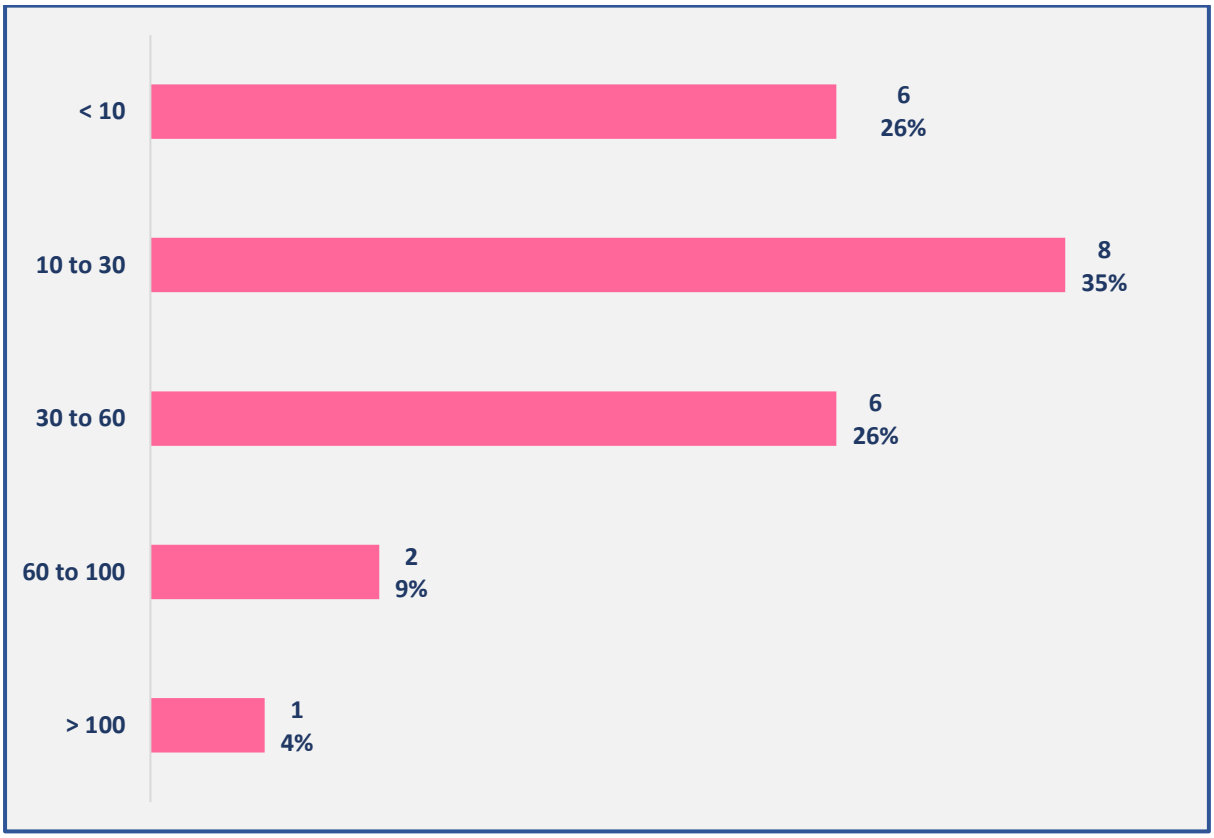

Figure 7.1: Number of people involved in achieving the VC (23 survey results)

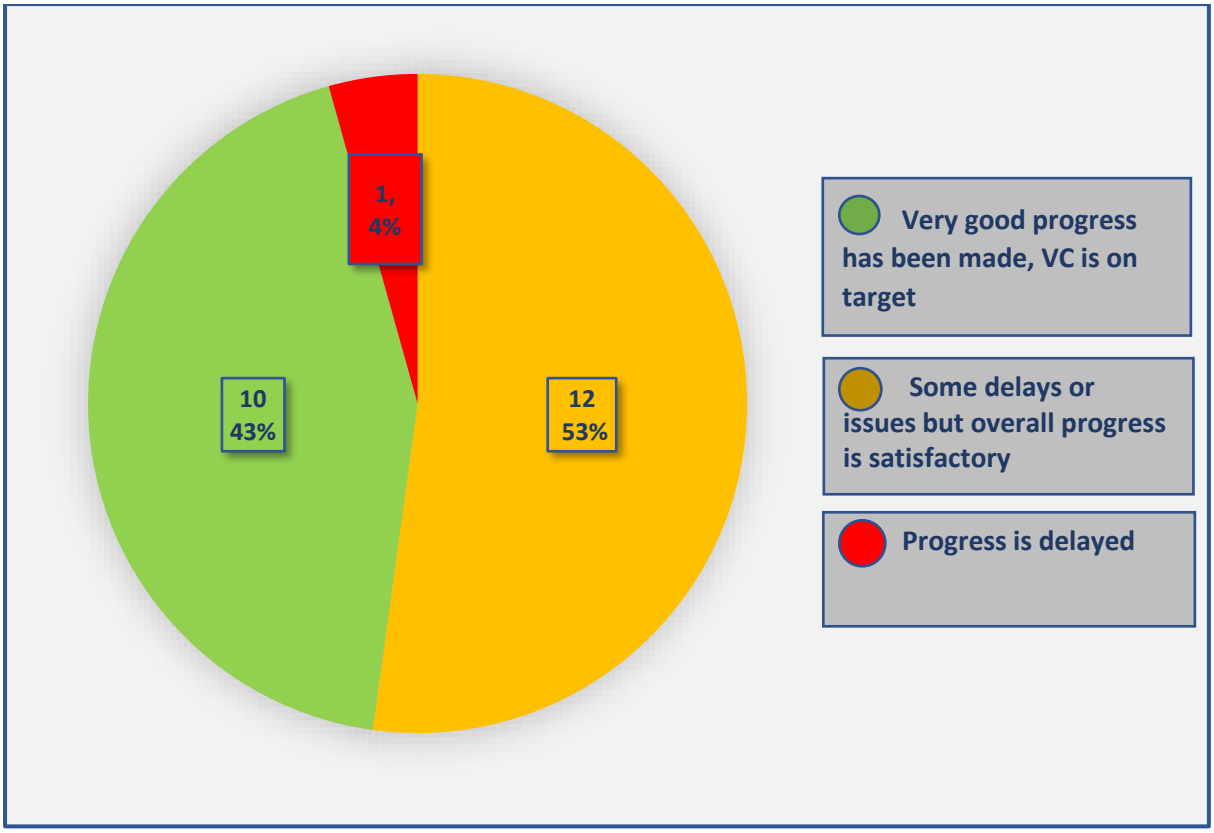

Figure 7.2: Progress of VCs, from June 2017 to September 2018 (23 survey results)

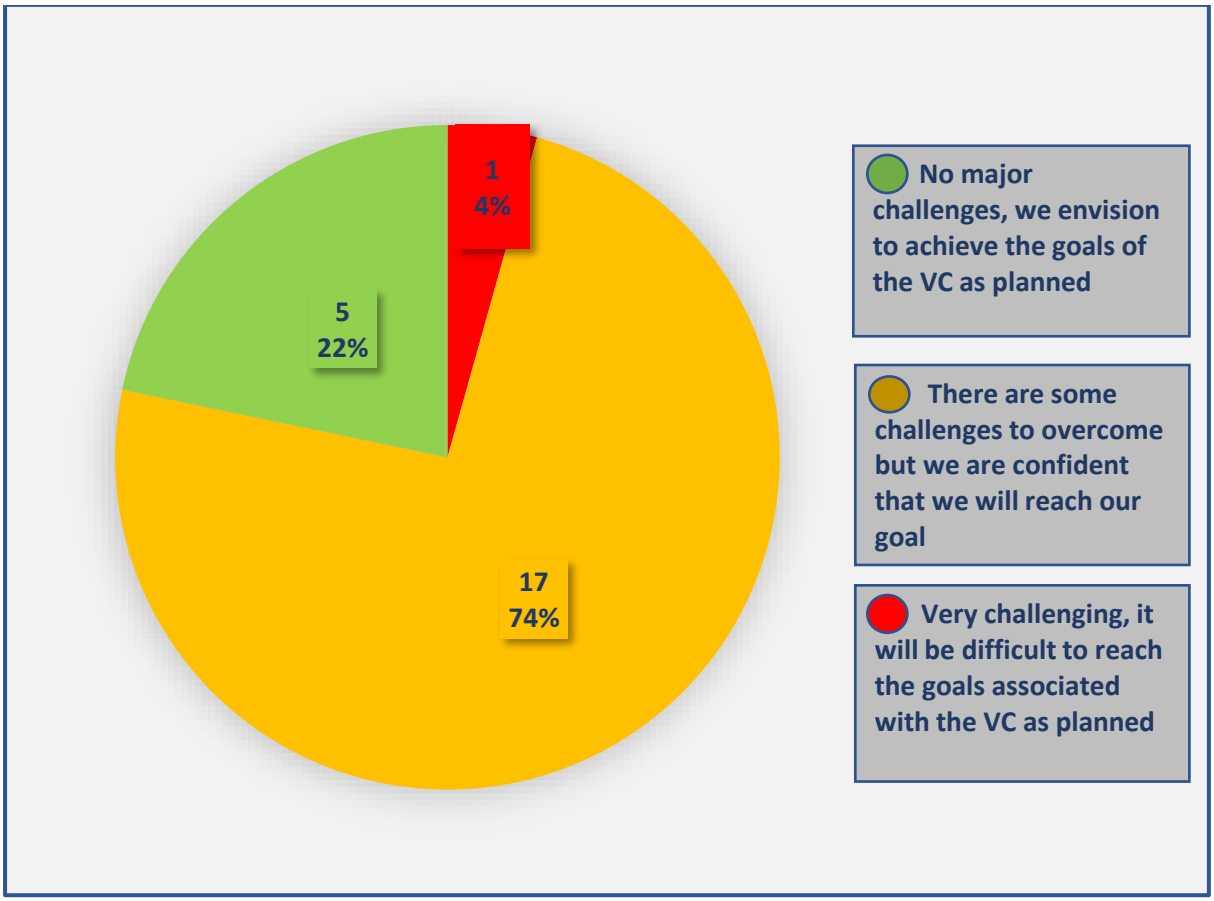

Figure 7.3: Challenges associated with VCs, from June 2017 to September 2018 (23 survey results)

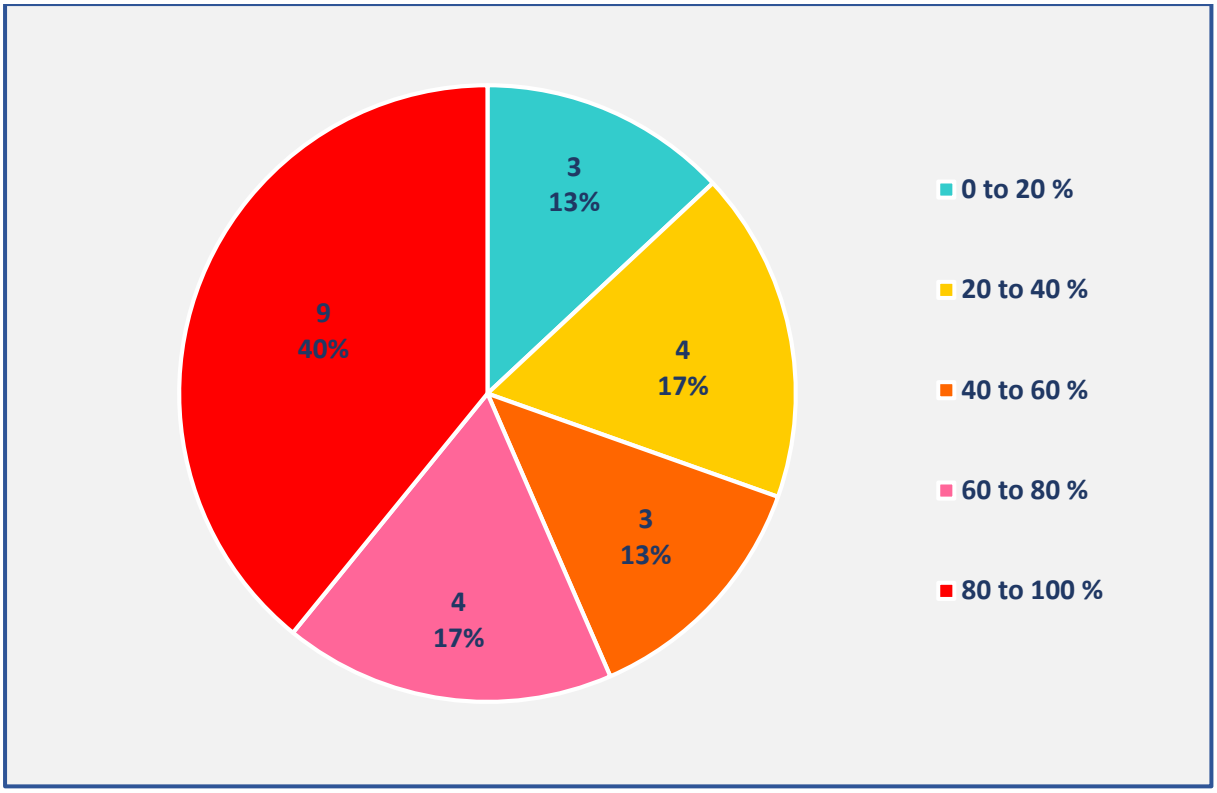

Figure 7.4: Access to funding for VCs (23 survey results)

8- Conclusions and next steps

In conclusion, 61 of the 240 VCs submitted towards SDG 14.3 to date are directly focused on OA, with 21 VCs focused solely on OA. Most VCs which directly focus on OA are related to monitoring, communication and risk assessment. When looking at the primary focus of these 61 VCs, most are on monitoring, risk assessment and capacity building, probably reflecting the scientific nature of the SDG 14.3 target. The main regions covered by the 61 VCs directly focused on OA are global, North Atlantic and North Pacific, and main submitters are governments, academia and the scientific community, again this is probably because SDG 14.3 is one of the more technical targets. Based on this analysis, new VCs on themes such as education, communication and adaptation, VCs which cover work in the polar regions and the South Atlantic, and VCs involving NGOs and UN entities are particularly encouraged. Furthermore, new VCs related to the implementation of the SDG indicator methodology 14.3.1 to measure OA must be encouraged.

As a lead up to the next Ocean Conference in 2020, the COA on OA plan to organize a series of webinars to provide a forum for community updates, highlight the work of a few VCs from each thematic focal area, try to identify opportunities for collaboration and coordination among initiatives, discuss a common strategy for the way forward, and encourage the community working on OA to submit additional VCs as well as report their updates on a regular basis, using the mechanisms put into place by the UN Department of Economic and Social Affairs. Members of the COA on OA are encouraged to spread the word among their networks in an attempt to promote new VCs, in particular to cover gaps identified through the analysis above. For example, calls on the IAEA OA-ICC news stream, the Ocean Acidification Information Exchange, and similar venues could be useful.

Actors on OA who could be specifically asked to submit new VCs include the Ocean Acidification international Reference User Group (OA-iRUG), the Arctic Monitoring and Assessment Programme

(AMAP), the Monegasque Association on OA (AMAO), the regional OA networks (LAOCA and OA-Africa, North Atlantic), the Commonwealth Blue Charter OA Action Group, the NOAA OA Program, IOC-UNESCO-led OA activities, the IAEA Ocean Acidification International Coordination Centre (OA-ICC) and IAEA Technical Cooperation projects on OA, and the Ocean Acidification Information Exchange.

9- References

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