



A review of the experiences of selected coral reef countries in addressing Aichi Biodiversity Target 10

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Executive Summary

Coral Reefs continue to be on a catastrophic trajectory if substantial action is not taken within an urgent timeframe. A recent IPCC report stated that coral reefs would all but disappear in a scenario of 2°C warming and up to 90% of coral reefs would be lost even if warming does not exceed 1.5°C. Ecosystems that are closely associated with coral reefs are also facing significant declines. Together these ecosystems play an important role in the broader sustainable development agenda, protecting the built environment, reducing wave energy, providing novel compounds for breakthrough medicines, contributing to GDP and with food security.

This report reviews experience and highlights lessons learned from the implementation of actions to address the CBD Aichi Target 10 *“By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.”* It draws on published reports and assessments as well as consultation with countries and other relevant stakeholders.

It was found that Aichi Target 10 succeeded in drawing attention coral reefs as a special ecosystem in crisis and provided an opportunity to have an entry point to focus effort and coordinate policy action in cross boundary pressures. Before the adoption of SDGs, Aichi Target 10 played an important role in being able to stimulate increased activity on marine conservation issues. It has provided leverage for regional and global engagement, and also provided a handle to help demonstrate the wider contribution being made by a range of national and regional initiatives. It has also instigated funding streams to support coral reef conservation work.

In assessments by the Secretariat of the Convention for Biological Diversity and others, Aichi Target 10 has consistently been identified as one of the targets with the lowest levels of implementation and the least progress. It has repeatedly been identified as a target that requires urgent, accelerated progress to prevent the continued decrease of live coral cover. In both the published assessments and in consultations with stakeholders, Target 10 has been criticized as being vague, ambiguous, complex, difficult to understand, non-quantifiable, open to broad interpretation and yet requiring transformational change at an institutional level. The unrealistic timeframe set to achieve this Target made it difficult to respond to and hindered rather than helped the widely recognized need for urgent implementation. These factors may also explain the low visibility of Aichi Target 10 and view that this did not become a common reference on the ground, but remained a tool for use at a higher policy level.

Despite having a broader intention to encompass ecosystems associated with coral reefs and other vulnerable ecosystems, the focus of implementation (although with some exceptions) and assessment has been on shallow, warm water coral reefs.

The multiple anthropogenic pressures addressed by Aichi Target 10 were often considered to be outside of the control and authority of the environment ministries. The need for cross sector, cross process, multilevel partnerships has been identified for successful achievement of Aichi Target 10 but identified as a continuing challenge by several stakeholders. Sustained access to human and financial resource also remained as persistent challenges.

The tools and guidance developed through the CBD processes to support countries in the implementation of Aichi Target 10 were perceived to be too late to be of use. Progress is still needed to improve the coverage and consistency of monitoring coral reefs and associated ecosystems as well as the indicators currently in use which are limited in scope and provide a retrospective assessment using data that is old as well as temporally and spatially patchy.

In the context of the post-2020 framework, most stakeholders consulted felt that there is a continued need for a dedicated coral reef target. A future target should be quantifiable and have an ambitious but realistic timeframe with a holistic view of coral reefs within broader marine system and clear cross-reference to other global and regional policy instruments and commitments relevant to coral reefs. The reduction in anthropogenic pressures other than climate related pressures continues to be necessary to give reefs a chance of surviving by supporting their health and resilience. It will be important to relate any follow up

target to a broader context of sustainable development agenda to help engage countries to protect their coral reefs.

Based on the proposed process and response of stakeholders consulted there is a role for ICRI to contribute to the development a post-2020 global biodiversity framework, within the context of the ongoing CBD process. The report presents four recommendations to ICRI:

- a. To establish an *ad hoc* committee to develop a global target for coral reefs in the context of the post-2020 global biodiversity framework;
- b. To articulate a plan of action to engage in the CBD process to develop recommendation for a coral target post-2020, consistent with the timeline and processes established by the CBD;
- c. To ensure alignment with other processes, including Agenda 2030, and build on existing regional and global coordination structures; and
- d. Make use of recent innovations in global monitoring and mapping to develop a quantifiable, actionable target and measure progress against the target.

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Abbreviations and Acronyms

AT	Aichi Target
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of the Parties
CORDIO	Coastal Oceans Research and Development in the Indian Ocean
CTI	Coral Triangle Initiative
DIPSR	Driver, Impact, Pressure, State, Response
EBSA	Ecologically and biologically significant area
EBV	Essential Biodiversity Value
FSM	Federated States of Micronesia
GBO	Global Biodiversity Outlook
GCRMN	Global Coral Reef Monitoring Network
GDP	Gross Domestic Product
GEF	Global Environment Facility
ICRI	International Coral Reef Initiative
IPBES	International Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
OSPAR	The Convention for the protection of the Marine Environment of the North-East Atlantic
OT	Overseas Territory
SACEP	South Asia Co-operative Environment Programme

SBI	Subsidiary Body for Implementation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCBD	Secretariat of the Convention on Biological Diversity
SDG	Sustainable Development Goal
SIDS	Small Island Developing States
SMART	Specific, measurable, achievable, responsive, time bound
SOI	Sustainable Ocean Initiative
SPAW	Protocol Concerning Specially Protected Areas and Wildlife, under the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region
SPREP	Secretariat of the Pacific Regional Environment Programme
TNC	The Nature Conservancy
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
WCMC	World Conservation Monitoring Center
WWF	World Wide Fund for Nature

1. Introduction

1.1. Objective

The objective of this report is to review experiences of selected coral reef countries in addressing the Convention on Biological Diversity (CBD) Aichi Biodiversity Target 10, including the implementation of Priority Action for Target 10 and to draw out lessons learned to inform the post-2020 process. The review will build on the previous work undertaken by the Secretariat of the CBD (UNEP/CBD/SBSTTA/18/INF/7/Rev.1) and work on the basis of the draft timeframe set out by the CBD for the post-2020 process.

The report will provide substantive inputs related to the discussion of a post-2020 global biodiversity framework within the coral reef community. The outcome of discussions at the fourteenth meeting of the Conference of Parties (CoP 14, November 2018) relating to the post-2020 global biodiversity framework will be very relevant to the next steps in the discussions within the International Coral Reef Initiative (ICRI) in terms of how to engage in the process, and when.

1.2. Background context

A vision for the future “living in harmony with nature” was set out by the Parties to the Convention on Biological Diversity (CBD) at their 10th Conference of the Parties in 2010. This Vision 2050 stated that “*By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.*” A Strategic Plan for Biodiversity 2011-2020 was adopted as the first stage towards achieving the vision, along with 20 global biodiversity targets, known as the Aichi Targets (CBD CoP Decision X/2). Within the CBD, a process has begun to consider the framework for global biodiversity strategy beyond 2020.

Warm water coral reefs are reported to support more than a quarter of all known marine life (Reaka-Kudla et al., 1997 in WWF, 2018) and provide food for over one billion people (Quaas et al., 2016). In fact, the ecosystem services of coral reefs and closely associated ecosystems have been demonstrated to contribute to 10 of the SDGs¹ including through protecting the built environment, reducing wave energy, contribution to GDP and significance to food security (ICRI, 2017).

Impacts of climate change such as elevated sea surface temperature, causing coral bleaching, mortality and disease (Pendleton et al., 2016); and ocean acidification are global stressors that threaten the functionality of certain ecosystems including coral reefs. These stressors are largely beyond the control of local and national management authorities. Local stressors, such as land based sources of pollution, overfishing and coastal developments can exacerbate the effects of global stressors – but can be regulated locally. There are a number of recent reports that show that these ecosystems continue to be on a catastrophic trajectory if significant action is not taken in an urgent timeframe.

- The IPCC 1.5 report stated that Coral reefs would decline by 70-90 per cent with global warming of 1.5°C, whereas virtually all (> 99 per cent) would be lost with 2°C warming (IPCC, 2018). The Living Planet report also stated that if current trends continued, up to 90% of the world’s coral reefs might be gone by mid-century (WWF, 2018).
- Annual bleaching events are expected to occur by the 2050s (UNEP, 2017) although impacts on coral reefs will not be uniform across the world (Pendleton et al., 2016; UNEP, 2017). The greatest impact is expected to be in areas where there is a combination of very high levels of dependency on coral reefs and where annual severe bleaching will happen soonest (Pendleton et al., 2016) of the countries considered in this report three, Saudi Arabia, Egypt and Papua New Guinea are projected to have annual severe bleaching events as soon as 2033 (UNEP, 2017).
- Mangroves protect coastlines, sequester carbon, and support fish nurseries. 30-50% have been lost over the past 50 years (WWF, 2018);
- Seagrass beds support fisheries, carbon sequestration, stabilizing sediments and provide nutrient

¹ The 10 SDGs identified by ICRI (2017) are SDG 1, 2, 3, 8, 9, 10, 11, 12, 13 and 14

Cycling; 29% of the known extent of seagrasses has disappeared since it was first recorded in 1879 (WWF, 2018).

This report focuses on reviewing the experiences that certain coral reef countries have had in addressing Aichi Biodiversity Target 10: *“By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.”* This target sits within Strategic Goal B of the plan to “Reduce the direct pressures on biodiversity and promote sustainable use.” The inclusion of a target that singled out coral reefs was something new in the 2011-2020 Strategic Biodiversity Action Plan and there had been no target similar to AT10 in the previous Strategic Plan under the CBD (Timpfe, Marquard & Paulsch, 2018).

It is worth noting that there are several Aichi Targets that are linked to coral reefs in addition to AT10. Marques et al (2014) reported that AT10 depends progress toward Aichi Targets 2, 3, 4, 5, 6, 7, 8, 9, 11 (addressing underlying causes and direct drivers of biodiversity loss), Target 14 (addressing ecosystem services), and Target 20. Timpfe, Marquard & Paulsch (2018) added Target 15 to this list with relevance to the blue carbon potential of mangroves and sea-grasses as associated coral reef ecosystems. Butchart et al., (2016) argued that achievement of Aichi Target 10 requires addressing the entire biodiversity crisis, and almost all elements of the other 19 targets. The text of the Priority Actions (CBD Decision XII/23 Annex) particularly highlight the links with AT11 and AT6².

Following the adoption of the Aichi Biodiversity Targets, a series of “quick guides” were produced by the Secretariat of the CBD to assist countries in their interpretation. The AT10 quick guide was published in 2013 (CBD, 2013). It highlighted that AT10 had particular urgency, which is why it had been given a deadline of 2015 – five years ahead of the other Aichi Targets. According to the guidance provided, the target was intended to trigger “rapid interventions” and “aggressive action” on local and regional anthropogenic pressures that can be regulated more easily than global drivers such as climate change and ocean acidification (CBD, 2013). The intention would be that by taking away some pressures, vulnerable ecosystems would have more chance to cope, adapt and ideally begin to recover.

The fourth Global Biodiversity Outlook (GBO) was published in 2014 and served as a mid-term evaluation of progress towards the Aichi targets. At this stage Target 10 was flagged as one of 5 targets where progress was not being made and additional accelerated action was required to reduce anthropogenic pressures (CBD, 2014; CBD/SBSTTA/22/5 §8; Tittensor et al., 2014).

In 2014, as a response to this lack of progress and in order to assist Parties, a set of “Priority Actions to achieve Biodiversity Target 10 for coral reefs and closely associated ecosystems” were agreed upon (Annex to CBD COP Decision XII/23). The aim of these priority actions was to support management action by Governments and other relevant organizations to enhance implementation toward achieving the target (Annex to Decision XII/23). Another important implementation tool, the indicators for measuring progress against the targets, were however not agreed upon until the thirteenth Conference of Parties in 2016 (CBD COP Decision XIII/28) a year after the intended deadline for AT10.

Further to CBD Decision X/2, progress made against the Aichi Targets by the Parties has been kept under review. The most recent update was presented to CoP14 taking place 17-29 November 2018, the results of which have been reflected in this report. The fifth Global Biodiversity Outlook will provide the final assessment on the implementation of the Strategic Plan for Biodiversity 2011-2020 and is due to be published in 2020 for consideration by CoP15 in October/ November of that year (CBD COP Decision XIII/29).

The 5th GBO assessment will draw on the 6th National reports submitted by Parties to the CBD by 31 December 2018, as well as regional and global assessments by the International Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) due in 2019 and any other relevant information to provide a basis for consideration of the post-2020 biodiversity framework (CBD/COP/14/9). COP 14 will consider both the direction of a post-2020 framework and the comprehensive and participatory process to deliver it. The

² For a description of the Aichi Targets see <https://www.cbd.int/sp/targets/>

timeline for the implementation of the 2011-2020 Strategic Action Plan for Biodiversity and the lead up to agreeing the next generation of target(s) for biodiversity is shown in figure 1.1.

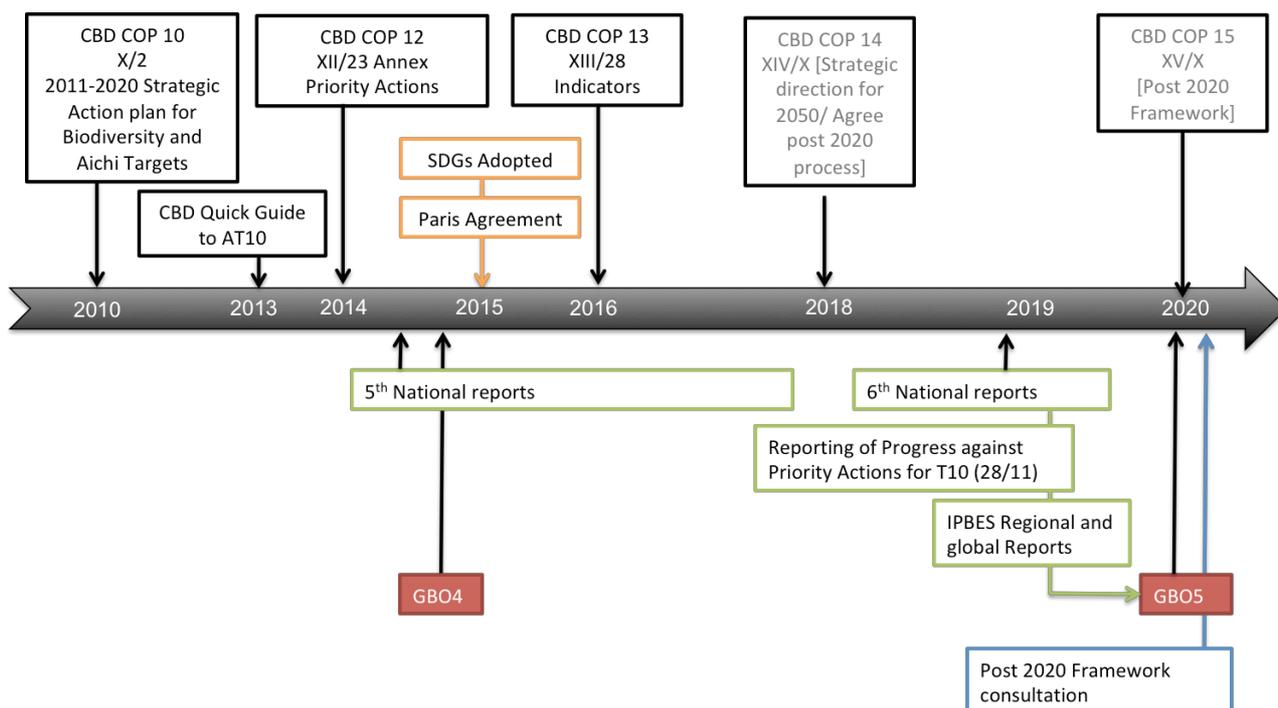


Figure 1.1: Overview of the timeline relating to the 2011-2020 Strategic Action Plan for Biodiversity and the post-2020 global biodiversity framework (based on information provided in document CBD/COP/14/9)

1.3. Scope of review

Thematic scope

This review of experiences relating to Aichi Target 10 has focused on warm water coral reefs and closely associated ecosystems. It is recognized however that Target 10 is intended to have a broader interpretation where coral reefs are identified as one example of ecosystems that are vulnerable to climate change and ocean acidification (CBD, 2013). Others vulnerable ecosystems referred to are cold-water coral reefs and shellfish beds and even terrestrial ecosystems that are near the limits of their extreme range (CBD, 2013). Some of the countries identified in the scope of this review have also taken a broader interpretation in the application of this target. In these cases, countries were asked to focus their reflection as relates to coral reefs and closely associated ecosystems. In cases where stakeholders identified cold-water coral reefs, experiences relating to these ecosystems were also noted, given that cold-water corals fall within the scope of the UN Environment Assembly Resolution on sustainable coral reef management (UNEP/EA.2/12, 2016) and within the work of ICRI as per the ICRI Decision on cold-water coral reefs (ICRI, 2004).

Geographic scope

Whilst coral reefs occur in the waters of more than 100 countries (UNEP, 2016), the current review focused on the 15 countries with largest coral reef areas according to Spalding et al., 2001: Indonesia, Australia, Philippines, France, Papua New Guinea, Fiji, Maldives, Saudi Arabia, Marshall Islands, India, Solomon Islands, United Kingdom, Micronesia (Federated States of), Vanuatu and Egypt. Limitations relating to the geographic scope of this review are noted in Annex 1.

1.4. Method and approach

The method and approach taken to conduct the review, including the limitations is presented in Annex 1.

1.5. Structure of the report

Section 2 provides brief information on the results in terms of the material identified and interviews held.

Section 3 presents the analysis of the reviewed documentation and consultation with stakeholders, drawing together conclusions from these different sources of information.

Section 4 considers the lessons learned from the implementation of AT10.

Section 5 draws out possible elements that may be useful in considering how coral reefs may be best addressed in a post-2020 global biodiversity framework.

Recommendations to ICRI are presented in section 6 and the bibliography in section 7. Annexes provide information on the methods and limitations (Annex 1); an overview of stakeholders consulted for this report (Annex 2) and highlights of emerging innovations, concepts and initiatives that could be of relevance to consider in further discussions (Annex 3). The synthesized contributions of stakeholder contributions are presented as an Appendix to this report. Please note that the contributions do not constitute a statement of policy, decision or position on behalf of any of the countries or organizations.

2. Results

This section provides information on the results of the identification of published material and also on the response to the stakeholder consultation.

2.1. Documentation

An overview of the documentation collated of relevance to AT10 for the purposes of this review is presented in section 7: bibliography. Links are provided to documents and other resources.

It is noted that there were a number of documents that would have been useful to inform the discussions on a post-2020 framework relating to coral reefs that were not finalized at the time of writing. These include:

- An 'Analysis of Global and Regional Policy Instruments Related to the Conservation and Sustainable Management of Warm Water Coral Reef Ecosystems' as requested by Member States in UNEA Resolution 2/12 (available in 2019);
- The outcome of the CBD notification requesting information on the implementation of Priority Actions to achieve Aichi Target 10 for coral reefs and closely associated ecosystems (deadline of 30 November 2018);
- Decisions of CBD COP 14 relating to the post-2020 process.

2.2. Stakeholder consultation

The report contains input from the following stakeholders received by 22 November 2018:

National contributions: Australia, Philippines, France, Maldives, United Kingdom and Egypt.

Other assistance and contributions were received from: SPREP, SACEP, OSPAR CORDIO, the GCRMN network, UN Environment Coral Reef Unit, the University of Guam (for FSM) WCMC, TNC and WWF.

Approximately one third of the stakeholders approached responded (see Annex 2).

As a result of the process further contact details have been developed opening up a possibility to continue gathering experiences from more of the countries identified, should this be considered useful.

3. Analysis

The analysis is presented in three sections: 3.1 looks at the outcomes of existing assessments, 3.2 considers the proposed process and timeline for the consideration of a post-2020 global biodiversity framework and 3.3 presents the experiences that have been gleaned through the stakeholder consultations conducted as a part of this report.

3.1. Consideration of previous assessments and other relevant information

It is the intention of this section of the analysis to consider the findings of previous assessments, both those undertaken within the context of the CBD and other assessments in the published literature that have relevance to AT10, Priority Actions and suitability of indicators

3.1.1. Reflections of previous published assessments on AT10, the priority Actions and Indicators

Mid-term evaluation of AT10

The fourth edition of the Global Biodiversity Outlook (GBO4) was released in 2014 as a mid-term evaluation of the Aichi Biodiversity Targets (CBD, 2014). Aichi Target 10 was found to be among the worst performing targets showing the situation worsening moving away from achieving Target 10. The report noted that significantly accelerated actions would be needed to reverse the trend (CBD, 2014; Leadley et al., 2014).

Only the first element of Target 10 relating to coral reefs was evaluated as part of GBO4. The second element relating to “other vulnerable ecosystems” was not evaluated due to there being insufficient information being available (Leadley et al., 2014). The authors of the assessment noted short duration of the original timeframe of the Target 10 up to 2015 and stated that this timeframe was insufficient to see changes in trends and so the analysis was extended out to 2020. (Leadley et al., 2014).

The assessment reiterated that there was a need to take urgent and compelling action to reduce greenhouse gas emissions to achieve the most optimistic scenarios of IPCC and address local threats to have a chance of achieving a positive carbon budget (Leadley et al., 2014). The assessment also cautioned that that human populations and anthropogenic pressures would continue to increase. Even when effective management actions could be put in place, the benefits of these actions may not be seen as a response by the ecosystem for years or decades (Leadley et al., 2014)

Development of the Priority Actions

In response to the findings of GBO4, Parties adopted Decision XII/23 in 2014, including an annex, which set out “*Priority Actions to Achieve Aichi Biodiversity Target 10 for Coral Reefs and Closely Associated Ecosystems*” (CBD, 2014). The Priority Actions updated the specific work plan on coral bleaching (Decision VII/5) adopted in 2004 and retained the focus on coral reefs and associated ecosystems as having important social and ecological relevance. The Parties are called on to develop national coral reef action strategies, or equivalent policies, strategies, plans or programmes, consolidating existing national initiatives, as platforms to mobilize inter-agency and cross-sectorial partnerships, as well as close coordination among national and subnational governments and with indigenous and local communities (§6 Annex to Decision XII/23). The decision then sets out a range of actions that could be included in these strategies such as capacity development, use of ecosystem based adaptation, the role of international and regional cooperation to support national implementation. Pursuant to decision XII/23, and as a contribution to the International Year of the Reef (IYOR 2018) a global coral reef portal has been developed under the coordination of the CBD Secretariat in order to facilitate the technical collaboration and voluntary information sharing on all aspects of the sustainable management of coral reefs and related ecosystem. The portal³ was launched on the 9 November 2018 (CBD Notification 2018-093) and intends to (a) showcase coral reef management efforts, in particular the implementation of the Priority Actions; (b) improve access to resources to help coral reef management; (c) illustrate the linkages between Aichi Targets and SDGs relating to coral reefs; and (d)

³ see www.cbd.int/coral-reefs

provide access to the work of other organizations/initiatives working on coral reef research and management. Support for the implementation of the Priority Actions was also expressed by the UN Environment Assembly, in §6 of Resolution 2/12 on Sustainable Coral Reef Management (UNEP/EA.2/12).

Despite these commitments, it has been difficult to find any documentation relating to or evaluating the use of the Priority Actions as set out in the Annex to COP Decision XII/23.

The remainder of this section focuses on information relating to assessment of Aichi Target 10.

Subsequent CBD assessments

Since GBO4 there have been a number of assessments and analyses carried out within the CBD context focusing on different aspects. The first type analyses the progress that countries have made to address Target 10 in their National Biodiversity Strategies and Action Plans and the progress reported at the national level. The second is a scientific assessment of progress made against the targets.

Analysis of progress made by countries to address Target 10: Interim analyses by the Secretariat of the CBD examined the contribution of the targets established by Parties and progress towards the Aichi Biodiversity targets have been conducted. Table 3.1 below shows the outcomes of the two most recent assessments of the contributions of national targets established by parties and progress towards the Aichi Biodiversity targets, in November 2016 and October 2018. **In both 2016 and 2018 the analysis indicated that AT10 has one of the smallest number of National Biodiversity Strategies and Action Plans (NBSAPs) with targets that are comparable in scope and ambition to AT10.** Where national targets have been developed, they tend to be general in nature with few referring to coral reefs or specifying other ecosystems vulnerable to climate change. Compared to other targets relatively few countries provided information related to this target. **It was a conclusion of both of these assessments (UNEP/CBD/COP/13/8/Add.2/Rev.1 and CBD/COP/14/5/Add.2) that AT10 was one target for which there were many NBSAPs without associated national targets or commitments.**

Table 3.1: Extract of the SCBD Analysis of the contribution of the targets established by Parties and progress towards achieving Aichi Target 10. The information presented in this table is from all NBSAPs that were available to the SCBD at the time of analysis, not limited to coral reef countries. The1) 2016 source: UNEP/CBD/COP/13/8/Add.2/Rev.1 Based on documentation reported by 21 November 2016. (2) 2018 source CBD/COP/14/5/Add.2 drawing on input from NBSAPs and 5th National reports received by 21 September 2018. Total number of Parties to the CBD = 193.

Year	2016	2018
Number of NBSAPs considered	122	159
Number of 5th National reports considered	179	191
% NBSAPs assessed that contained national targets or other commitments similar to AT10 in terms of scope and ambition	10	9
% NBSAPs assessed that contained national targets or similar commitments which are at a lower level than AT10 or which do not address all elements of the Aichi Target	47	48
% NBSAPs that do not include any national targets related to AT10	43	43
% National reports that suggested the target was on track	3	3
% National reports that suggested that progress was being made, but the target would not be met	33	33
% National reports suggested no significant change	23	23
% National reports indicating a deteriorating situation	7	7
% Reports that did not provide information for inclusion in the assessment	34	32

In terms of the coral reef countries relevant to this current report a review of available published NBSAPs⁴ showed that seven of the 15 countries make reference to AT10 in their NBSAPs. Of those countries that did not reference AT10, five had not yet been updated since the CBD Decision X/2. Only 4 of the 5 NBSAPs that have been revised since 2015 make reference to the SDGs. All but one of the countries mention coral reefs and climate change in their NBSAPs, but only seven make any reference to “vulnerable ecosystems” and five to “acidification”. In the 5th National Reports, five identify significant challenges in making progress towards achieving AT10. Others reported that whilst actions have been taken, the impacts of climate change are expected to increase, or the actions are not sufficient in order to achieve the target. In two cases, Australia and Indonesia positive progress was reported (aligning to the findings reported in the SCBD analysis below).

An overview of the CBD assessment of how Target 10 is represented by national targets and progress made at the national level is shown in Table 3.2 and Figure 3.1 below. The classification used was taken directly from the CBD assessment of how the Aichi Target 10 has been addressed within the national biodiversity strategies, and how progress has been assessed at the national level. With regards to the target, **only Indonesia and the Maldives are assessed as having national targets similar to the Aichi Target, but at a lower level or not covering all elements**. Six other countries have targets that are either significantly lower than the Aichi Target, or have little relevance. Five countries have not yet revised their NBSAPs to incorporate the Aichi Targets and for three (Australia, UK and Vanuatu), the CBD assessed as either having no target that related to AT10, or they had not yet incorporated the NBSAP into the analysis. With regards to the national progress, seven countries were identified as progressing towards the target, but not at a sufficient rate to meet it by 2020. Only one country (Australia) was identified as being on track to achieve the target, despite apparent contradiction that there was no available target.

Table 3.2: Overview of targets established by Parties towards achieving the Aichi Targets in preparation for COP14. The analysis is on the basis of 5th National reports and revised NBSAPs received by 21 September 2018. The analysis considers how aligned the National targets are to the Aichi Targets and also progress in addressing the target. The information for Aichi Target 10 is presented below. The criteria descriptions are those used in the CBD report (Source: <https://www.cbd.int/doc/nr/assessment-table-2018-09-21-en.pdf>)

Country	National target	National progress
Indonesia	National target is similar to the Aichi Target but at a lower level/does not cover all elements	Progress towards the target but at an insufficient rate
Australia	No target, * NBSAP received but not yet reviewed	On track to achieve the target
Philippines	National target is significantly lower than the Aichi Target	Progress towards the target but at an insufficient rate
France	The national target has little relevance to the Aichi Target	Progress towards the target but at an insufficient rate
Papua New Guinea	No revised or updated NBSAP received	Progress towards the target but at an insufficient rate
Fiji	No revised or updated NBSAP received	Progress towards the target but at an insufficient rate
Maldives	National target is similar to the Aichi Target but at a lower level/does not cover all elements	Moving away from the target
Saudi Arabia	No revised or updated NBSAP received	Progress towards the target but at an insufficient rate
Marshall Islands	No revised or updated NBSAP received	No information, * - National report received but not yet reviewed
India	The national target has little relevance to the Aichi Target	No information, * - National report received but not yet reviewed
Solomon Islands	The national target has little relevance to the Aichi Target	No significant change
United Kingdom	No target, * NBSAP received but not yet reviewed	Progress towards the target but at an insufficient rate

⁴ As published on <https://www.cbd.int/reports/search/> as of 15 October 2018

Micronesia (Federated States of)	No revised or updated NBSAP received	No significant change
Vanuatu	No target, * NBSAP received but not yet reviewed	No significant change
Egypt	The national target has little relevance to the Aichi Target	No significant change

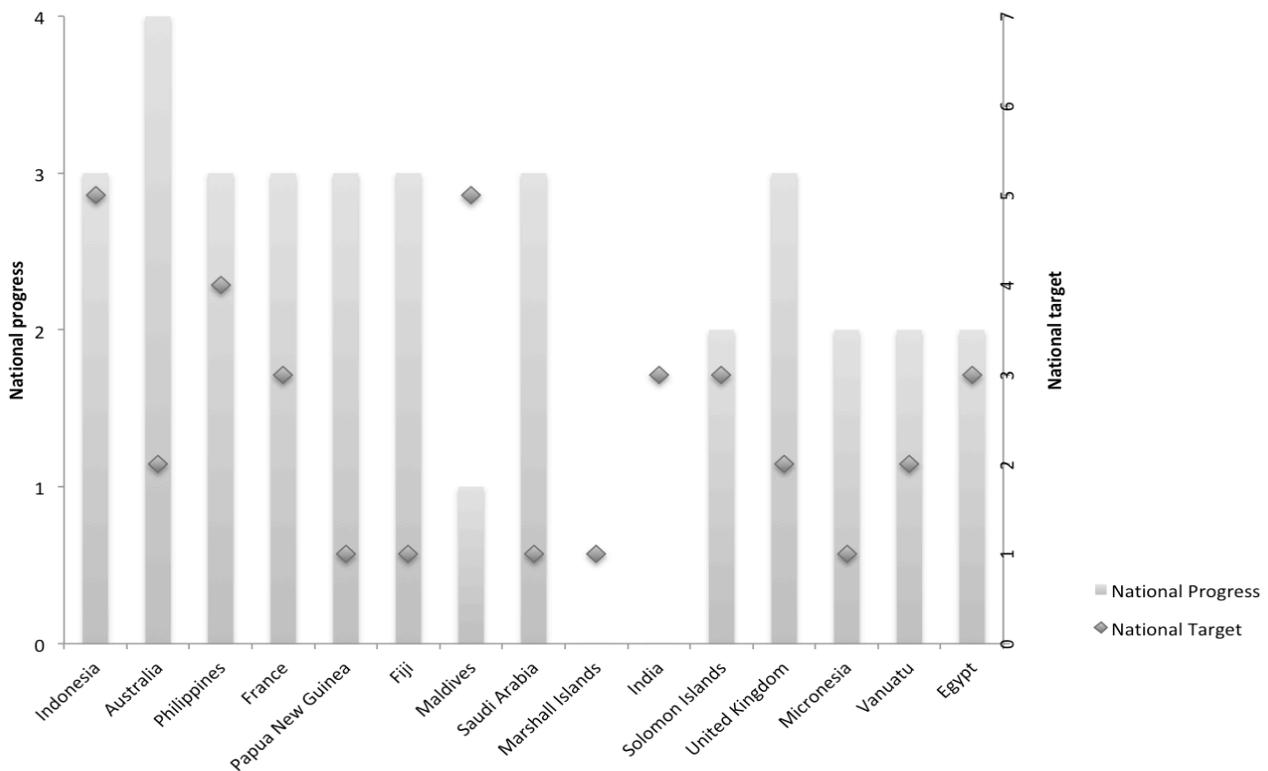


Figure 3.1 Graphic representation of the Secretariat of the CBD’s overview as to how aligned the National targets are to the Aichi Target 10 and also progress in addressing this target. On both axes 1 is low. The analysis is on the basis of 5th National reports and revised NBSAPs received by 21 September 2018. The criteria descriptions shown in the key are those used in the CBD report (Source: <https://www.cbd.int/doc/nr/assessment-table-2018-09-21-en.pdf>)

Key:

National Progress

- 0 No information, * - National report received but not yet reviewed
- 1 Moving away from the target
- 2 No significant change
- 3 Progress towards the target but at an insufficient rate
- 4 On track to achieve the target

National Target

- 0 N – No report received
- 1 G-No revised or updated NBSAP received
- 2 F-No target, * NBSAP received but not yet reviewed
- 3 E-The national target has little relevance to the Aichi Target
- 4 D-National target is significantly lower than the Aichi Target
- 5 C-National target is similar to the Aichi Target but at a lower level/does not cover all elements
- 6 B-National target is commensurate with the Aichi Target
- 7 A-National target exceeds the Aichi Target

Scientific assessment of progress: An update of the scientific progress towards selected Aichi Biodiversity Targets and options to accelerate progress was undertaken again by the Secretariat of the CBD and considered by SBSTTA in April 2018 (CBD/SBSTTA/22/5 + CBD/SBSTTA/22/INF/10). The focus of the assessment was on those targets with the least progress, including AT10 and (1) updated progress based on

scientific literature between 2014-2018 (2) considered options to accelerate progress and (3) made recommendations. The assessment supported the GBO4 conclusion that AT10 is not on track, and that current progress is not sufficient to meet the targets by 2020. It presented a situation where biodiversity continues to decline in particular referring to declines in coral cover and diversity. Pressures are increasing however the assessment indicated that management has been improved to address some pressures on ecosystems (CBD/SBSTTA/22/5 §9). Issues are highlighted around the need for governance systems to be better capable of addressing biodiversity in a coherent manner, integrate or mainstream biodiversity across all aspects of society and increase capacity of stakeholders to participate.

None of the options to accelerate progress referred specifically to AT10, however the options are indicated as being cross-cutting.

Much of the AT10-related research used by the assessment focused on coral reefs, although some studies referred to impacts of climate change on inland water systems. The update had a strong focus on recent progress in relation to coral reef status and noted the lack of new information at a global scale since 2014. On the pressures side, climate change has had the most attention in the scientific literature.

This assessment, like the GBO4 took a piecemeal approach and focused only on certain elements of the target.

On the basis of their consideration of this assessment SBSTTA adopted a Recommendation 22/4 for consideration by COP 14 which:

§7 “Urges Parties and invites other Governments, in accordance with national circumstances, and invites relevant organizations, indigenous peoples and local communities and stakeholders to take urgent action by 2020 on those Aichi Biodiversity Targets, or elements thereof, for which progress needs to be accelerated, by carrying out, among other things, the following actions, as appropriate:

[Including] h. For Target 10, enhance efforts to prevent continued worldwide decrease of live coral cover; “

Other assessments of AT10

The construction of the Aichi Biodiversity targets were examined by Butchart et al. (2016), who stated that “Target 10 is perhaps the most problematic to interpret [...] The vast majority of ecosystems (and conceivably all of them) will be impacted by climate change, so most could be argued to be vulnerable, which, in combination with the all-encompassing “multiple anthropogenic pressures” to be minimized, arguably means that achievement of target 10 requires addressing the entire biodiversity crisis, and almost all elements of the other 19 targets.” (Butchart et al., 2016 p456). Timpte, Marquard & Paulsch, (2018) supported these findings and added that AT10 also suffers from an unclear level of ambition.

An analysis of 154 documents to assess the nature of and extent of national implementation of the Aichi Targets in Canada found that quantifiable or at least semi-quantifiable targets area associated with higher number of implemented responses (Hagerman and Pelai, 2016). Butchart et al. (2016) stated that neither of the elements of AT10 were quantifiable, which could explain the low policy response to this target seen in the CBD analyses. The ambiguity of the wording, redundancy, lack of specified action and requirement of institutional transformation or change were also identified as contributing to low implementation of AT10 (Butchart et al., 2016; Hagerman and Pelai, 2016).

With respect to engagement in Canada, Hagerman and Pelai (2016) reported 49% of documents addressing the Aichi Targets were produced by federal and provincial government; 29% Environmental NGOs, 22% others (municipal government, Indigenous government, academia, industry). Whilst this study only focused on Canada, it seems to give some support to the view expressed by one of the stakeholders interviewed for this report who stated that the Aichi Targets did not have much up take outside of government administrations, their agencies working at the higher policy levels.

Box 3.1: Key messages from existing assessments of relevance to AT10

- Assessments undertaken by the CBD have found that there are many NBSAPs without associated national targets or commitments relating to AT10 and only 3% of national reports suggest this target is on track;
- As of yet no information was found regarding the status of implementation of the Priority Actions as set out in the Annex to COP Decision XII/23;
- Guidance and tools to support the implementation of actions related to Target 10 came late in the process. **Indicators were established after the 2015 deadline;** and
- Quantifiable or at least semi-quantifiable targets are shown to be associated with a higher number of implemented responses.

3.2. Process and timeline for developing a post-2020 framework

A proposal has been drafted for a proposed process to develop the post-2020 framework. The CBD Parties will consider the proposal at COP 14 (CBD/COP/14/9) in November 2018. It is clearly being put forward as a participatory process, with indications that there will be opportunities for contributing with input to the drafts through consultation at different scales and through written comment, workshops and thematic meetings, prior to the consideration for adoption by Parties at COP 15 towards the end of 2020 (see Figure 3.2). The first written consultation is under way. The initial notification was circulated by the CBD Secretariat in July 2018 requesting initial views on the scope and content of the post-2020 global biodiversity framework (Including the resource mobilization component) (Ref SCBD/OES/DC/RH/KNM/87538) and has a deadline of the 15 December 2018.

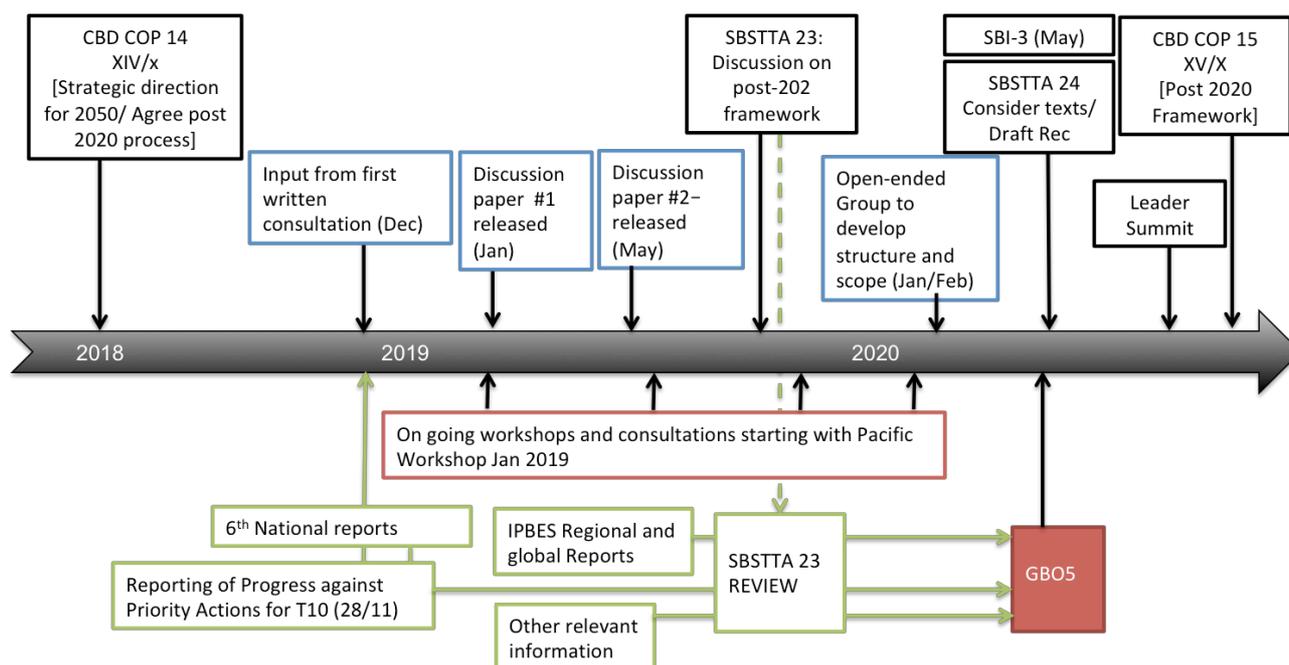


Figure 3.2: Draft timeline for assessments of the 2011-2020 Strategic Plan for Biodiversity and for the development of the post-2020 Framework between COP 14 and COP 15. Developed on the basis of information provided in CBD/SBI/2/17 Annex I and CBD/COP/14/9.

UNEP-WCMC has also developed an interactive timeline providing information on the various events leading to the adoption of a post-2020 global biodiversity framework which is available online at <https://post2020.unep-wcmc.org>.

Box 3.2 Opportunities for contributing to the Post-2020 process:

The proposed timeline presents a number of opportunities for ICRI to advocate for and mobilize the development and adoption of a post-2020 target on coral reefs:

- ICRI members have a unique opportunity to provide a strong recommendation for a new, quantifiable global target in the context of the post-2020 Biodiversity Framework. The author recommends that ICRI submit initial views on the importance of adopting a quantifiable, actionable global target by the 15 December 2018 deadline. Additional submissions are due in January 2019 and May 2019;
- Within the context of the planned CBD consultation workshops and to feed into these workshops, ICRI should consider sponsoring regional and global workshops on a post-2020 coral reef target and invite ICRI member countries and other relevant key CBD Parties and other stakeholders to participate to develop coherent input around the need and content for a coral reef related target;
- ICRI has an excellent opportunity to contribute new data and information to inform the development and adoption of a new, evidence-based, quantitative coral reef target, such as the Status of Coral Reefs of the World 2020 and the Allen Coral Atlas.

3.3. Experiences relating to Aichi Target 10

The information presented in section 3.3 is a synthesis of the information provided during the stakeholder consultation phase and reflects the views of those stakeholders (Appendix 1 to this report provides the full detail of stakeholder contributions by country/ organization).

3.3.1. Context

As would be anticipated there are very different national contexts within which the Aichi Targets have been applied. In consultations some stakeholders identified that there are national or regional processes in place that pre-dated the Aichi Targets or extend beyond 2020. Australia for example cited over 40 years of experience with management of coral reef areas and the Micronesia Challenge in 2006 established ambitious targets to 2020 for progress in reducing pressures on coral reefs and has significant momentum. The UK recently adopted a new 25-year environmental plan, the Maldives has set its national targets for 2025 and the Philippine Strategy and Action Plan sets a road map to 2028. Notwithstanding these variable timeframes some national representatives noted the benefit of globally negotiated targets in helping to provide a basis for national action and consistency of action over a longer time frame and across periods of political transitions.

Within the countries identified, there are different levels of social, economic and environmental dependence on coral reefs. It was suggested that it would be interesting to draw on assessments the level of social and economic dependence on coral reefs (e.g. Burke, 2011, see figure 3.3) as a way of ensuring engagement with those countries that are most dependent. Stakeholders also identified different needs in terms of how action is taken and the time that is required to establish new processes (cultural variation).

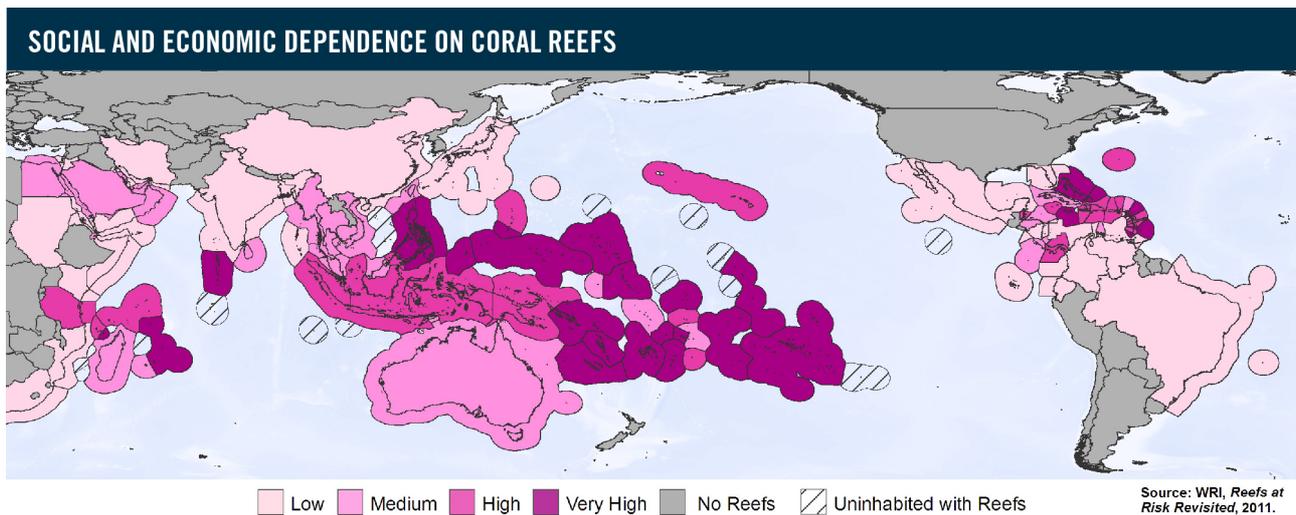


Figure 3.3: illustration of the social and economic dependence on coral reefs (source: Reefs at Risk revisited, Burke, 2011)

Some stakeholders noted that there has been a recent elevation of coral reef issues at a national and international level indicating an opportunity to strengthen action to support coral reef conservation. There was consistency across stakeholders in the identification of climate change and ocean acidification as global pressures that are outside the scope of an individual nation to address unilaterally, and for which there are mechanisms in place, for example the Paris Climate Change Agreement under the UNFCCC, where national contributions are committed. It was the view expressed by some stakeholders that in many countries that have the greatest dependence on coral reefs and are facing the highest impacts of climate change are also contributing the least in terms of carbon emissions. The anthropogenic pressures that are at play vary between countries, as does the significance of these pressures and the progress that has been made by countries to regulate them.

One of the regions that was not included in this review was East Africa. This is a region where there is a rapid increase in population size and an accelerating growth in the middle classes that is faster in Africa than in other regions and is expected to increase further in the next 30 years, a view supported by the 2017 revision of the world population prospects (UN, 2017). This acceleration in a context of poor governance has implications for the dynamics of multiple stressors/ anthropogenic pressures that were the focus of Aichi Target 10.

3.3.2. Interpretation

During the consultation there was variation seen in how countries interpreted the main purpose of the target. In several cases the target had been interpreted as an environmental management target, with focus on the management of local anthropogenic pressures. In other cases it had been interpreted as having a higher-level ambition, with focus on the global pressures such as climate change.

National stakeholders reflected differences in interpretation of the scope of the target in terms of the ecosystems to which AT10 was applied. This variation is in line with the discussion above on there being very different contexts in different countries and regions.

There were differences in the breadth of ecosystems that countries applied AT10 to, in some cases this was a non-coral context with extension to cold water and to terrestrial ecosystems (e.g. the UK application to woodland and heaths). In other cases there appeared to be a primary focus on coral reefs.

There was convergence between some stakeholders who had applied a broader ecosystem approach and incorporated other ecosystems associated with coral reefs. Australia and the Maldives for example considered the coral reef ecosystem in its broadest context, including for example sea-grass, mangrove forest, island systems and associated species.

One stakeholder highlighted the importance of building constituency among non-state actors, including the private sector as important to their interpretation of AT10.

3.3.3. Reflections on AT10

Positive role of AT10

The stakeholders interviewed noted that a number of important roles that AT10 has played. AT10 was successful in recognizing that there are different pressures in different places and there is space for these differences within the Target. There was also a benefit in that it focused multiple issues/ anthropogenic pressures within a context of climate change. The values of AT10 include in helping to provide a focus and context for cross boundary pressures; as well as enabling advocacy work to build understanding as to the role of strategic impact assessment and environmental impact assessment as tools for understanding and informing the management of anthropogenic pressures.

AT10 was also noted as creating value at the national, regional and global scale with regards to creating leverage or rationale to raise issues related to management of anthropogenic pressures on vulnerable ecosystems. In the national context, one stakeholder identified that negotiated targets and formal documentation such as the NBSAPs that carry a longer-term perspective can help provide consistency in biodiversity policy in transitions between governments. In some regions where national or regional mechanisms were in place, such as the Micronesian Challenge, global targets such as AT10 can help to elevate the regional actions as a contribution to the global effort. In the context of the UN Environment, AT10 helped put these issues on the agenda and enabled development of supporting policy within the context of the UN Environment Assembly, within UNEA Resolution 2/12 on the sustainable management of coral reefs, within which Member States call on each other to support implementation of AT10 and the Priority Actions and give UN Environment a strong mandate to work on issues relating to coral reefs and associated ecosystems.

Targets have also helped to instigate funding mechanisms through influencing funding streams. In the Caribbean, ATs had been used as justification for setting of GEF priority projects and catalyzing the Caribbean regional action plan for coral reefs. One stakeholder reflected that as a whole, Aichi Targets have been critical for driving biodiversity funding.

In 2010 at the time of the adoption of the Aichi Targets, there was a high awareness of the crisis facing coral reefs and a need to address this crisis. AT10 succeeded in giving special recognition to a special system, however it was noted that there were benefits in terms of increased visibility and awareness, but also challenges with singling out a particular ecosystem. There was no consensus on the benefit of a dedicated coral reef target amongst the stakeholders consulted. Some stakeholders felt that as a target highlighting a flagship ecosystem AT10 had the potential to provide an entry point to focus effort and coordinate policy action so that they can have wider benefits. It was also noted however that this was not how most countries had used AT10.

Challenges relating to the implementation of the target

This target was rather different in nature to the other targets and lacked any quantifiable component. The majority of the stakeholders interviewed felt that this target was not clearly articulated, containing several complex elements with a result that it is vague, difficult to understand, open to interpretation and not clear how to know when you were successful. It was the view of one stakeholder that the country level reality was that AT10 drifted past the 2015 deadline, without notice. There was strong agreement that one of the biggest challenges in the implementation of AT10 was that it was not a SMART target. Stakeholders recognized the political negotiation process associated with developing global targets introduced ambiguities. It was perceived that the way AT10 it is worded leaves it open to broad interpretation and so it is very difficult or even impossible to be able to measure progress or know if success has been achieved. Some stakeholders identified lack of a baseline as a challenge to implementation, without which you cannot know where you are, or where you need to get to. One of the criticisms identified was that this target was not able to or designed to change behaviour. There was a perception in some stakeholders that the Aichi targets were unveiled at a higher level and had not been sufficiently relayed to the operational level and not incorporated into daily working language. Increased awareness and community ownership was highlighted as a challenge,

requiring intensive information, education and communication to empower communities to engage in taking actions.

It was the view of one stakeholder that the most significant pressures of relevance to this target are not localized and could not be successfully addressed by actions taken at the local /national scale a perspective also shared by Pedleton et al. (2016) in considering consequences for reefs and people in a high-CO₂ world. Reduction in greenhouse gas emissions for example requires global action within the appropriate framework of UNFCCC. However it was noted that whilst small island developing states (SIDS) have little control over greenhouse gas emissions, they could manage local resources (Houk et al., 2015). With climate change on one side, one stakeholder highlighted the challenge for countries to reduce multiple stresses in the face of continuing increases in population size and economic growth.

There was a difference in the degree to which the countries interviewed reported that they had already regulated local anthropogenic pressures. In the Great Barrier Reef Marine Protected Area in Australia for example many of the localized pressures have been independently assessed to be well managed⁵. The focus there has now turned to other anthropogenic pressures that are out of the direct control of GBRMPA such as: climate change, land-based run-off impacting water quality, coastal development, and some aspects of direct use (particularly fishing). Similarly in Egypt, there were already longstanding regulations established for many anthropogenic pressures relating to pollution and environmental management, and now attention has turned to tourism pressure as an important set of pressures to address. In the Maldives there are some key pressures that are now well regulated, such as major fisheries, where as other issues such as waste management, construction, and coastal development that require further action.

Successful implementation of AT10 needs to be cross-sectoral and cross-jurisdictional, which requires bringing together partnerships, a challenge that is not unique to this target. Many of the actions required to address the anthropogenic pressures alluded to in the text of AT10 are not within the power of environment ministries with respect to enforcement or influence. Challenges were also identified in coordinating and communicating between different governance levels, for example from national to local actors at the level of field implementation. At the global level the challenge (in terms of climate change) was identified as the implementation of the Paris agreement. At the local level it was to bring stakeholders engaged in land-based activities to take into consideration the direct and indirect impacts of their activities on the marine environment, and on coral reefs in particular. One stakeholder provided an example of such a partnership that has been developed in Australia. **The Reef 2050 plan**⁶ brings together regional government (Queensland), National government, industry, science and traditional knowledge. A governance structure has been established along with advisory bodies⁷ and a mechanism for integrating data and monitoring programs⁸ NOTE: Reef 2050 plan was not a response to AT10 or the Priority Actions, but it happens to fit well. Development of the Reef 2050 Plan was driven by the World Heritage Committee⁹ and was informed by a strategic assessment of the Great Barrier Reef World Heritage area¹⁰.

One stakeholder suggested that if one was trying to do a risk assessment on which target to focus on and where to focus effort given limited resources, then AT10 would be the worst target to tackle, as a successful outcome relies on changes by other sectors and action beyond the national scale. One stakeholder with a regional perspective felt that the Aichi Targets had a heavy reporting burden without obvious benefit. Another stakeholder felt that targets with a number associated with them were more helpful to instigate

⁵ Refer:

- [Great Barrier Reef Outlook Report 2009](#) and
- [Great Barrier Reef Outlook Report 2014](#) and the associated
- [Independent Review of Management Effectiveness for 2009](#) and
- [Independent Review of Management Effectiveness for 2014](#).

⁶ <http://www.gbrmpa.gov.au/our-work/reef-strategies/reef-2050>

⁷ <https://www.environment.gov.au/marine/gbr/reef2050/advisory-bodies>

⁸ <http://www.gbrmpa.gov.au/our-work/reef-strategies/reef-integrated-monitoring-and-reporting-program>

⁹ <https://www.environment.gov.au/heritage/places/world/gbr/more-information>

¹⁰ <http://www.gbrmpa.gov.au/our-work/reef-strategies/strategic-assessment>

activity (e.g. AT11). Whilst there are examples of initiatives that clearly identify AT10 as a driver, including the International Year of the Reef (IYOR, 2018 (see ICRI 2016)), Several national and regional stakeholders consulted reflected that actions they were undertaking were not in response to AT10 directly, but that AT10 served to reinforce policies and actions that were already underway as a result of other established processes. A number of activities were identified that would also help countries deliver impact in line with AT10 but on a timescale that went beyond 2020. Within the Micronesian region, the Micronesian Challenge was identified by one stakeholder to have been a bigger instigator of action / change than the Aichi Targets and it is the Micronesian Challenge, that is the daily language and not the Aichi Targets.

There was some question raised in the stakeholder consultation about how the suite of targets has been used. In some discussions it was pointed out that the different targets could be considered independently and can only be achieved when tackled in combination – for example AT11 relating to protected areas, cannot be achieved without progressing AT6 relating to fisheries. However, another stakeholder observed that when considered all together the Aichi Targets are not seen to function as a coherent set.

Stakeholders also identified challenges in the timeline of the target

A 5-year timeline to 2015 was not feasible. Whilst targets need to be ambitious, this must be balanced with what is feasible. The need to recognize the time required to undertake structural transformation was also highlighted. The Philippines for example noted that the body responsible for implementation, had only been established in 2015. In addition the delay in the development of associated guidance and support would have hindered progress in implementation. The Priority Actions were available in 2014, the indicators and the Voluntary specific work plan on biodiversity in cold-water areas within the jurisdictional scope of the Convention¹¹ only in 2016, a year after the intended deadline. It was felt that the absence of indicators until late in the process was also a hindrance to the progress made against this target. More than one stakeholder also noted challenges with the metrics available to express when a system is functioning sufficiently. Whilst it is possible to show where there is coral that is alive and dead, it is still difficult to measure the condition of a reef. **It is important to consider what it means to have a healthy reef, why this is important (in terms of jobs or GDP but also from a strict biodiversity perspective). Our understanding needs to go beyond economic services – not just a total economic value, but also the role of coral reefs and vulnerable ecosystems in the economy and society.**

Human and financial resource constraints were identified as challenge

In many small island states, national delegates have to divide their time between their multiple responsibilities, which has implications for being able to maintain the momentum and consistency of effort required to bring about change. In remote regions of the world travel to participate in international meetings is particularly expensive and difficult when there are only a limited staff. In the face of these kinds of challenges it is difficult to start new initiatives. The UK noted a particular challenge given that UK warm water corals are within the UK Overseas Territories (OTs). There are challenges to support liaison and coordination of responses across the OTs (predominantly challenges of access to funding) as well as in providing appropriate support for capacity building, data management and data flows across the relevant countries, OTs and Crown Dependencies that constitute the UK as a Party to the CBD. UK OTs that have the UK ratification of the CBD extended to them do not always qualify for the funding streams to support CBD related work.

3.3.4. Reflections on the use of the Priority Actions for Target 10

There were a few national stakeholders that felt that the priority actions were of some use and gave guidance on the steps that could be taken, and how to prioritize actions that have a broader benefit. They were also considered to be helpful to emphasize the need to work across sectors. Others stated that the priority actions had not had much impact on established processes and approaches and had not been used as main basis for formulating or triggering actions. Some stakeholders shared that the priority actions had either not been widely used, and in some cases were not aware of their content.

¹¹ Decision XIII/11 <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-11-en.pdf>

Stakeholders representing other organizations reflected that the Priority Actions were an evolution of the CBD Priority plan of work on coral bleaching. They have been referred to and used within the process and there is some evidence of initiatives that can be traced back to some but not all of the Priority Actions. However not all organizations are using the priority actions and one commented on the fact that these priority actions had not been raised much in discussions with the countries.

It was also noted that the priority actions were only available midway through the 2011-2020 Strategic Action Plan for Biodiversity implementation process in 2014 and only one year before the AT10 2015 deadline.

3.3.5. Measuring progress

In discussion with stakeholders from the national perspective, issues relating to measuring progress of implementation most frequently came up when talking about challenges. These conversations are also reflected in this section.

Baselines: Some countries still lack baselines for their vulnerable ecosystems or for levels or types of anthropogenic pressures acting on them. Establishing a baseline was identified as being critical to be able to measure change over time and in being able to engage with other sectors when discussing actions to regulate action or change behaviour.

Monitoring: several stakeholders talked about challenges with monitoring, although the scope of the challenges varied. There was consistency in the concern that a lot of current assessment is being based on old data that were collected many years ago and giving a retrospective assessment. This is most extreme in looking at the global coral reef data set.

In some regions there are often many organizations working and collecting data, but it remains difficult to get an overall view of the status of coral health. An example was provided of the under-sampling of coral reefs for long term monitoring: the Pacific Island Region has over 27,000 islands, however the GCRMN dataset only found data for 75 islands. A bias was also noted in monitoring effort with more effort focused on a few well-established sites and gaps in more remote reef areas, again an issue particularly relevant to the South Pacific or other small island developing states, particularly since some of the healthiest reefs may be in the least monitored, more remote areas. Amongst the actions identified in the UNEA Resolution 2/12 is an action on supporting the development of coral reef indicators, monitoring and assessment through GCRMN (§14 UNEP/EA.2/12).

The currently available global data layer is made available by UNEP-WCMC although some of the data within this set is now more than 2 decades old and is at a relatively low resolution. The most recent global status of coral reefs was produced by GCRMN in 2008, although there are plans for a new global status report to be delivered in 2020. There are more recent regional status reports, including one published for the Pacific in 2018 (GCRMN, 2018). One stakeholder mentioned a new product that is in development, The Allen Coral Atlas. This will not be static layer, and will enable not only more frequent periodic updates, but also enable the detection of impact events such as bleaching, extent of health as it happens, as well as functioning as a 2020 baseline. It is anticipated that this will deliver substantial improvement in coral data and will support coral monitoring; it is expected to generate the type of data most useful for measuring the delivery of any new post-2020 coral target.

Data and information access/ Management: data sharing was identified as a problem by some stakeholders, within countries, between countries and between organizations and countries. In some regions, even if there are many organizations collecting data it is hard to get an overall view.

There has been progress in data sharing in the South Pacific region through the SPREP “Inform project¹²” a web based data and information portal that enables countries in the region s to improve availability of and access to data. Data agreements are in place to enable SPREP to store the data. The countries have ownership and regulate who has access to their data.

¹² SPREP Inform project: <https://www.sprep.org/sites/default/files/documents/publications/status-coral-reefs-pacific.pdf>

Indicators: Some stakeholders had the perspective that Indicator development has improved through efforts such as the Biodiversity Indicator Partnership. One stakeholder identified that the success/ failure on the usefulness of a target lies in whether there is a functioning policy feedback loop to show if there is a response in the state of the ecosystem as a result of an action or intervention. Several stakeholders commented on the fact that the indicators for the Aichi Targets were made available late in the process, and for AT10 this was after the initial deadline. More than one stakeholder stated that improvements are still needed with the current indicator suite relating to AT10 needs more work.

One stakeholder noted that live coral cover is a common measurement assessment, but there is a risk of only including this in the target as it does not reflect species diversity¹³. Coral reef diversity is critical to function. Changes in the community composition and diversity at species and genetic levels will have implications for function (increasing coral cover does not mean a functioning/ restored reef). An analogy is with forest cover – a forest may have high forest cover, but its fauna, particularly large mammals may have been eliminated.

In some cases countries, for example the UK, have developed their own indicators, and are looking to align these with indicators agreed under the CBD process.

Another stakeholder proposed essential biodiversity values (EBVs) as a possible approach to develop a common framework for reporting against coral reef related targets. The indicators that are currently in use are retrospective. However there is an argument that there is a need to develop early warning indicators to detect signs of change and facilitate proactive responses (Schmeller et al., 2018). EBVs were proposed by Pereira et al., 2013 (cited in Schmeller et al., 2018), as a conceptual framework to address this challenge. The concept has been considered within the CBD context (SBSTTA 17) as a first step towards being able to develop headline indicators of critical biodiversity change, although an initial suite of EBVs are still in development.

3.3.6. Reflections beyond 2020

The value of a dedicated coral reef target: **Most stakeholders felt that the continuation of dedicated coral reef target is still warranted in a post-2020 context.** It was felt that a target with a clear focus would help to heighten and maintain awareness at a time when there is a need for urgent action. Impacts are already being seen in coral reef ecosystems at 1 degree of warming, another mass bleaching event anticipated in 2019 and severe warnings as to the consequences for coral reefs if warming increases above 1.5 degrees.

Some stakeholders emphasized that **a holistic view of coral reefs within the broader marine systems needed to be stronger in the next generation of targets**, including needing to draw the correlation with other work areas/ conventions where there needs to be an alignment of effort (e.g. policy instruments relating to land based sources); ensure a holistic landscape to seascape management view – such as the Ridge to Reef management approach and a move away from sector based/ siloed management, which would require transformational change to structures and processes.

One stakeholder cautioned the need for a larger narrative, beyond just looking target by target to see what must happen next. A shift or transformation is needed to address the impact of multiple stressors and drivers. A shift that will require, amongst other things, sustainable financing mechanisms, creation of appropriate incentives, a broader strategy within a more cohesive framework.

Other stakeholders felt that it was helpful to distinguish between targets for terrestrial and marine environments due to different ownerships and interactions, although it was not necessary to have a focus on one particular ecosystem, such as coral reefs, over other vulnerable ecosystems.

The reduction in anthropogenic pressures other than climate related pressures continues to be necessary to give reefs a chance of surviving by supporting their health and resilience.

Links to existing national processes: It will also be important that the post-2020 framework can take account of the fact that some countries have national targets that are beyond 2020. Any major shift in direction could affect the possibility of being able to measure the progress resulting from actions being taken (lag time of response).

¹³ The GBR World Heritage Area is recognised for its diversity of species and habitats - <http://www.gbrmpa.gov.au/the-reef/biodiversity>

Links to other processes and tools: **Any input by ICRI must be made within the context of the ongoing CBD process to develop a post-2020 global biodiversity framework. It was also felt that there should be a clear cross reference to other global and regional policy instruments and commitments relevant to coral reefs.** There was question raised regarding how to make sure the different mechanisms, processes and commitments that are almost parallel, almost complementary can start coming together and become more mainstream.

The new targets need to be connected to UNFCCC Climate Change Agreement and there is need to achieve climate change goals. If these goals are not met, then coral reef cover will be significantly reduced and the benefits derived not sustained.

Alignment with the SDGs was considered as necessary, instead of creating completely new targets. Some elements of the UN Sustainable Development Goals (SDGs) (esp. related to biodiversity) expire in 2020. It is possible to envisage a parallel process for revision of these SDGs and the CBD biodiversity framework with a view that in 2030 these processes would be combined/ aligned, with CBD contributing biodiversity elements to a broader agenda. One stakeholder highlighted **it will be important to relate any follow up target to a broader context of sustainable development, SDG 1, 2 and 3 are as critical as SDG 14 and the inclusion of this broader agenda could help engage countries to protecting their coral reefs.** A large proportion of coral reef ecosystems (80%) are in developing countries where there are urgent food security issues and limited capacity/ resources. How can the new post-2020 framework help communities and governments adapt and to work in partnership across public and private sector, help them achieve the steps to adapt and avoid running duplicate processes. The new generation of targets will need to have appropriate resourcing, incentives or innovative financing mechanisms to support implementation. Synergy between different instruments could also help to achieve mainstreaming of reporting mechanisms.

The UNEA 4 in 2019 will consider an analysis of global and regional policy instruments and governance mechanisms related to the protection and sustainable management of coral reefs (UNEA Res 2/12). This was identified as useful to consider in the light of a post-2020 framework.

One stakeholder hoped that the next generation of targets will make clear links to tools such as EBSAs, EIAs, SEA (including with the application of the CBD Revised Voluntary Guidelines for the consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas (UNEP/CBD/COP/11/23), adopted by COP 11 in 2012 (CBD Decision XI/18).

Reflections on potential content or process: The post-2020-framework is seen as a 3-pronged approach with 3 main result areas (1) Policy commitment; (2) finance (3) Information, awareness and outreach – seen as 3 corners to a triangle and all connected with interdependencies between each corner if they are to succeed.

There was a strong message coming out of the stakeholder consultation that any targets beyond 2020 need to SMARTer. It was perceived that targets that were more successful were those that were specific in what they were asking for and how they could be tackled. There was a feeling that a target risks losing impact if it is too general. There was a discussion around the tensions between being “specific and measurable” vs taking a “systems management” perspective. Whilst it is clear that the CBD takes an ecosystem approach, from an environmental governance perspective it is important to have an enforceable and clear target with clear indicators that link together. It was suggested that it may be better to be specific in the text, rather than too broad and general resulting in text that is not easily implemented or measured. As an example, if there was a general headline target, it would then need to have clear elements within it.

One suggestion was that a target should apply the DIPSR approach to be able to detect change in pressures and change in status to give clear policy feedback loops and enable responses to be adaptive. The Indicators need to be disaggregated and track trends. The inclusion of a mechanism to help re-invigorate and sustain monitoring was suggested as a helpful part of a new target.

One stakeholder called for a need to be more prescriptive in which coral reefs should be protected in the coming decade. The Voluntary specific work plan (CBD decision XIII/11) encourages Parties to undertake actions, such as the identification of refugia sites, which is also relevant to shallow, warm water coral reefs, although needs more scientific work to identify these sites. There is also a link to the EBSA process as a process to identify sites of particular significance.

Any target should take account of how different countries could work with the target in a way that is suited to their particular context and capacity and support their sustainable development needs. Stakeholders suggested there should be suitable resourcing mechanisms associated with a target to enable countries to respond. Mechanisms such as sustainable financing mechanisms, appropriate incentives and the appropriate use of technologies were mentioned.

One potential new area suggested for consideration in a new target was that protection and reduction of pressures must be the baseline before restoration. It is more economical to protect existing coral reef ecosystems, than to restore. Governance structures should be established to ensure scarce funds are directed to the most appropriate and effective activities. Australia is looking to ICRI to update the 2005 Resolution on coral reef restoration. An ad hoc committee will progress this and look at the role of restoration in the context of a broader approach to protection and management. There is a lot of scope for new techniques and technologies to address restoration challenges, but it is necessary that these efforts are appropriate to the situation and a risk-based assessment is applied¹⁴.

The concept of applying the voluntary contributions concept was suggested by one stakeholder as interesting to consider for a post-2020 framework. This could comprise of a more general headline target and then Parties/ Observer organizations/ industry/ cities/ civil society would be able to make a commitment to help achieve the target. The risks of a voluntary contribution scenario include countries trying to do as little as possible/ re-label business as usual; and that it would be hard to aggregate reporting and bring it all together to see if/ how progress is being made. The opportunities include that it would allow for different approaches to be taken in different regions, it would avoid the “one size fits all approach” and could trigger countries trying to outcompete each other (race to the top).

¹⁴ GBRMPA is developing guidelines and supporting information on interventions to improve resilience of coral reef habitat in the Marine Park – the following drafts released for public comment-

- <http://elibrary.gbrmpa.gov.au/jspui/handle/11017/3341> and
- <http://elibrary.gbrmpa.gov.au/jspui/handle/11017/3342>

Box 3.3 Conclusion on experience regarding the implementation of AT10

The value of AT10 was that it succeeded in drawing attention to a special ecosystem that is in crisis and provided an opportunity to have an entry point to focus effort and coordinate policy action in cross boundary pressures. Before the adoption of SDGs, AT10 played an important role in being able to stimulate increased activity on marine conservation issues. It has provided leverage regional and global engagement, and also provided a handle to help demonstrate the wider global contribution being made by national and regional activities. It also instigated funding streams to support coral reef conservation work.

In assessments by the CBD and by others, AT10 has consistently been identified as one of the targets with the lowest levels of implementation and the least progress. It has repeatedly been identified as a target that requires urgent, accelerated progress to prevent the continued decrease of live coral cover (most recently in SBSTTA Rec 22/4 §7h). In both the published assessments and in consultations with stakeholders, AT10 has been criticized as being vague, ambiguous, complex, difficult to understand, non-quantifiable, open to interpretation and requiring transformational change at an institutional level in an unrealistic timeframe made it difficult to respond to and hindering rather than helping the widely recognized need for urgent implementation. These factors may also explain the low visibility of AT10 and view that this did not become a common reference on the ground, but remained a tool for use at a higher policy level.

Despite having a broader intention to encompass ecosystems associated with coral reefs and other vulnerable ecosystems, the focus of AT10 implementation (although with some exceptions) and assessment has been on shallow, warm water coral reefs.

The anthropogenic pressures addressed in AT10 were often considered to be outside of the control and authority of the environment ministries. The cross sector, cross process, multilevel partnerships that is required for the successful achievement of AT10 was identified as a continuing challenge by several stakeholders. Sustained access to human and financial resource remain as persistent challenges.

The tools and guidance developed through the CBD processes to support countries in the implementation of AT10 came too late, although it will be interesting to see the outcome of the information sharing on how the Priority Actions have been taken up. Progress is still needed to improve the coverage and consistency of monitoring coral reefs and associated ecosystems. The indicators currently in use provide a retrospective assessment using data that is old as well as temporally and spatially patchy.

In the context of the post-2020 framework, most stakeholders felt that there is a continued need for a dedicated coral reef target. A future target should be quantifiable and have an ambitious but realistic timeframe with a holistic view of coral reefs within broader marine system and clear cross-reference to other global and regional policy instruments and commitments relevant to coral reefs. The reduction in anthropogenic pressures other than climate related pressures continue to be necessary to give reefs a chance of surviving by supporting their health and resilience. It will be important to relate any follow up target to a broader context of sustainable development, SDG 1, 2 and 3 are as critical as SDG 14 and the inclusion of this broader agenda could help engage countries to protecting their coral reefs.

Based on the proposed process and response of stakeholders consulted there is a role for ICRI to contribute to the development a post-2020 global biodiversity framework, within the context of the ongoing CBD process.

4. Lessons learned from the implementation of AT10

The following lessons were drawn from the stakeholder consultations with representatives of the identified coral reef countries as well as from relevant regional organizations, regional initiatives and NGOs. In addition a number of emerging initiatives, concepts and innovations relating to coral reefs and including the Allen Coral Atlas, Coral Reef Coalition and the Global Coral Reef Fund are presented in Annex 3 to this report.

4.1. Value of the target

National and international commitments support each other.

Targets can help to provide consistency during transition between governments and enable a longer-term perspective, which is necessary for addressing environmental issues. There is value in having documents such as the Aichi Targets or NBSAPs that have been consulted upon and agreed.

Negotiated international commitments can provide a helpful foundation for national regulation and visa versa inform regional and global policy development. For example, in the Caribbean, it is thanks to the coral species listed in the SPAW Protocol to the Cartagena Convention that France has been able to strictly protect 16 species of coral in Guadeloupe, Martinique and St-Martin.

Whilst there are many examples of actions that have been taken in the countries of interest that are of relevance to AT10, it was notable that many of the stakeholders contributing to this report did not attribute the actions to being a response to this particular target.

One stakeholder expressed that AT10 was able to help bring focus to marine outcomes and there has been an increase in work in the marine environment since then.

Another stakeholder held the view that AT10 was enlightened in creating a target that enabled/ called for a broader approach and perhaps combining Targets e.g. a combination of AT10 + AT11 could give a good package.

Strategies and action plans relating to this target required consideration of all sectors and highlighted a continued need to improve national level policy coherence. Often priorities of different sectors within government can still be seen as competing rather than complementing. Some stakeholders identified environmental conservation as still having a low priority.

The role and importance of international cooperation and regional governance for achieving AT10 was clearly articulated in the Priority Actions (CBD Decision XII/23). There are a number of relevant initiatives to point to, for example through ICRI, the International Year of the Reef 2018, and the Sustainable Ocean Initiative, launched in 2010 and hosted by the SCBD as a platform to share experience and measure progress towards AT6, 10 and 11. The Global Coral Reef Partnership, was established in 2014 and brings together UN Environment and the Regional Seas Conventions and Action Plans to provide a legal framework for coordinating action. However, these initiatives were not referenced during the stakeholder consultations and there is perhaps opportunity to explore and strengthen the role of regional ocean governance further in the future post-2020 framework

4.2. The nature of the target

The urgency for coral reefs remains and warrants special attention. Transformational change is required.

There is a need to continue to build awareness, be specific and tangible, even prescriptive in terms of a future target. Not all stakeholders consulted shared the view that coral reefs should be singled out over and above other vulnerable and critical ecosystems. There was debate as to the level of specificity of a target. Perhaps a target would need to find a way to be very specific and quantifiable so it is easier to respond to, measure and enforce, without losing the necessary comprehensive, holistic, ecosystem perspective that is required to bring about change.

The wording and construction of the target is important for ensuring clarity of meaning and helping interpretation. In the text of AT10 it is easy to see that it is about coral reefs, but harder to see that it is about pressure reduction. For the target reduction to make sense it needs to put it in the context of coral reefs. The ecosystem status trend is important.

The timeframe of the target should be ambitious but not so much that it is infeasible and should recognize that there are time lags between taking action and detecting change in the ecosystem (Tittensor et al., 2014).

There is a question about how much guidance Parties should be given on how to address a target, it should perhaps rather be up to the country to interpret the target in the way that is most appropriate to help them address the challenges they face.

The Aichi Targets were very much targets drafted by governments for governments through a consensus negotiating process. They have not had much uptake outside of national administrations. There needs to be a way mainstream biodiversity into businesses, municipalities and civil society in order to change perspectives and trigger behaviour change. It may be possible to learn from (a) the UNFCCC Climate change target: a simple headline, easy to remember and repeat allowing countries to take their own direction to achieving it; and (b) Sustainable Development Goals under Agenda 2030, both of which have been gaining good traction within government but also beyond, even though the indicators are not yet completely clear.

According to some stakeholders there has been a disproportionate focus on the implementation of MPAs as a management solution in the current Strategic Action Plan. However any new marine target needs to go beyond MPAs to ensure that a broader biodiversity outcome is delivered. MPAs represent a single management action relating to biodiversity conservation and are often applied in coral areas, MPAs are however able to deal only with a subset of the pressures on the coral reefs and only for certain areas. MPAs are not however effective in addressing land-based sources for example, pollution, wastewater or climate change. Whilst there was clear recognition of the critical role of MPAs, there was a perspective that this disproportionality of focus identifies a deep problem in the current target framework.

4.3. Sharing ideas and experience

Exchange of ideas and experience is needed through the implementation process: ICRI was identified as providing an important forum for sharing experience and ideas at an international level and provides an opportunity to contribute a coherent and coordinated proposal to ensure coral reefs are sufficiently reflected in the post-2020 framework.

4.4. Measuring progress

The indicator suite identified for AT10 requires further development.

Whilst live coral cover is a common metric and important metric in itself, it does not reflect or measure diversity. Coral reef diversity is critical to function but recognized as still being difficult to measure in a cost-effective way. Changes in the community composition and diversity at species and genetic levels will have implications for function (increasing coral cover does not mean a functioning/ restored reef, any more than forest cover implies an intact, functional forest). An insight was shared on efforts underway to develop metrics for forest intactness and ecological integrity, which could provide useful lessons for coral reefs as well.

The lack of baseline, evidence or accounts to support the actions relating to removing pressures on coral reefs and other vulnerable ecosystems has been a major hindrance. This information is needed in order to provide proof and evidence to support the prioritization of important environmental actions in a cross sectoral context and move away from trying to convince on the basis of a precautionary approach.

Data sharing and data access also continue to present challenges although there are more and more examples of progress and good practice.

New, potentially game-changing technological developments should be supported by on the ground monitoring and expertise.

4.5. Resourcing and funding

Limited human and financial capital both remain challenges to be overcome identified as a barrier to addressing aspects of AT10 along with the need to build the financial case for coral reefs. The lack of consistent, sustainable funding for coral reef conservation has consequences for effort –a sustainable mechanism is needed for long term, consistent coordination of coral reef conservation and monitoring. One stakeholder described that lack of consistent investment in coral reef monitoring has led to gaps in effort and loss of previous investment, requiring high effort to re-start again. There is a clear message from consultation with stakeholders that the post-2020 framework needs to include consideration of associated financial mechanisms.

In October 2018, Monaco and Vulcan Inc. announced a seed funding phase for a new Global Fund for Coral Reefs, which will be linked to the post-2020 global target. ICRI donor countries should strongly consider contributing to the fund.

This is an exciting area of current development and there are a number of recent reports on this theme that relate to coral reefs, including:

- ICRI report on innovations for coral finance (ICRI, 2017);
- Funding the ocean: an online knowledge hub to track, inform and inspire ocean conservation philanthropy;
- Analysis of international funding for the sustainable management of coral reefs and associated coastal ecosystems (UNEP/ICRI/WCMC, 2018);
- The Coral Reef Economy: The business case for investment in the protection, preservation and enhancement of coral reef health (UN Environment et al., 2018)

Some particular questions that may be helpful to draw on including the consideration of availability vs accessibility of funding mechanisms. Whilst there appear to be a range of financing mechanisms available for coral reef conservation (UN Environment, ICRI, WCMC, 2018), there is a question about their accessibility. The ICRI (2017) report identified some challenges associated with seven mechanisms that appeared to have relevance to the current discussion that could reduce their accessibility:

- If there is a dependence on strong institutional and fiscal capacity
- If there are high initial transaction costs
- If there is a lack of evidence on / experience of financial performance
- Where there are gaps in legal and regulatory regimes
- If there is a need to develop capacity relating to financial strategy/ business in those responsible for management of natural resources.

5. Possible elements to take forward

The following section presents concepts and ideas drawn from the conclusions and lessons learned relating to experiences in the implementation of AT10. They are presented here to inform discussions as to how coral reefs may be addressed in a post-2020 global biodiversity framework. There was a need expressed to reflect a larger narrative and not just look to the next target, but the discussion should take into account the transformational shift required to address multiple stressors in a broader sustainable development context, including how to align with other mechanisms, processes and commitments.

5.1. Nature of the target

- a. The urgency for coral reefs remains and warrants special attention.
- b. There is a need for a stronger reflection of the holistic view of coral reefs within the broader marine ecosystem and the consequence for institutional structures and processes needed for a landscape and seascape management view;
- c. To be transformational there is a need for any target to be SMARTer, simply, clearly articulated and quantifiable. Quantifiable or at least semi-quantifiable targets have been shown to be associated with a higher number of implemented responses. Although there needs to be thought regarding how to manage the tension between 'specific and measurable' vs 'systems approach' which is capable of recognizing the inherent complexity. In the proposed preparatory process being considered by COP 14, the CBD have identified certain criteria that any targets in the post-2020 framework should meet (Source: CBD COP/S14/9 Annex 1; §6 revised proposed preparatory process for the post-2020 global biodiversity framework)¹⁵:
 - Targets should be ambitious, measurable, realistic and time bound;
 - Give indication of post-2020 capacity requirement, resource mobilization;
 - Promote gender equality;
 - Enhance cooperation and coherence among biodiversity conventions;
 - Give opportunity to enhance synergies in reporting against biodiversity conventions, Rio conventions and SDGs.
- d. One proposal was to consider whether the concept of voluntary contributions or nationally determined contributions could be helpful in the post-2020 framework; where a more generalized headline target would be agreed and Parties, other relevant organizations (private sector, civil society, etc.) could identify commitments that they will make as a contribution to achieve the target. This mechanism has been used for example in the context of UNFCCC (Brown Weiss, 2014);
- e. Any target must be useful for countries with very different political, social and economic contexts and capacities and recognize countries are at different phases of regulating anthropogenic pressures;
- f. Whilst AT10 was successful in recognizing that different pressures impact different countries, it may be helpful in the future generation of targets to help developing the tools for developing the necessary partnerships, drawing on experiences of multi-stakeholder engagement such as the "Great Barrier Reef blueprint for resilience" (GBRMPA, 2017) and the coral reef coalition, launched at CBD COP 14, bringing together eight international organizations to advocate decisive action to protect coral reefs;
- g. Possible components that were raised by stakeholders include:
 - The concept of appropriate restoration could be integrated into a new target, recognizing the value ecological integrity and intactness, ensuring that restoration should not be seen as a substitute for protection and effective management of in tact reefs. Any restoration techniques or technologies should be applied appropriately using a risk-based approach ensuring that protection and pressure reduction measures are in place as a pre-requisite before restoration efforts are attempted. As a useful first step to inform a broader debate would be an update to the 2005 guidance on the role of restoration in the context of a broader approach to the protection and management of coral reefs;

¹⁵ To be revisited following the conclusion of COP14

- How to consider the potential role of innovations relating to accelerated restoration techniques (e.g. coral fragmentation) and use of “super corals” that have been hybridized or genetically modified to increase thermal tolerance and resilience to the effects of climate change;
- How a new target could help strengthen coral reef monitoring, including drawing on appropriate use of technology and innovation to supporting coral reef monitoring and management, for example, the role of the new Allen Coral Reef Atlas, when this comes on line in 2020.

5.2. Relation to other processes

- a. Any post-2020 framework should be a continuation of the Aichi Targets or build from the existing suite commitments. Any major shift in direction could affect the progress of countries who have existing and on going national or regional processes that extend beyond 2020;
- b. New targets should build coherence with other international processes and commitments including
 - Relating to the UNFCCC climate change agreement, given the underlying need to meet these goals as a priority;
 - Connecting to the broader context of sustainable development e.g. through the SDGs and including SDG 1, 2 and 3 as well as SDG 14. The inclusion of this broader agenda could help engage countries to protecting their coral reefs. Interestingly only 4 of the 15 countries included in this review currently mention the SDGs in their NBSAPs.
- c. Actions to address multiple anthropogenic pressures need to be taken in the context of an increasing global population and identify regions where acceleration is likely to be fastest. The most recent population predictions suggest a global population of 8.6 billion by 2030 and 9.8 billion in 2050. More than half of this growth is expected to come from just 9 countries, including India, Tanzania, USA and Indonesia, all countries with coral reefs (UN, 2017). The report also highlights that by 2050 the populations of half of African countries will at least double (UN, 2017).

5.3. Tools and other enabling factors

- a. Inclusion of a mechanism to continue the development of coherent monitoring and metrics to improve the evidence base for decision-making and ensure functioning feedback loops between status and response. It should be noted that an implementation and governance plan for the GCRMN is being developed through a working group lead by UN Environment and ICRI and will be considered for adoption by the 33rd General Meeting of ICRI in December 2018. This will strengthen the network institutionally and establish data standards related to essential biodiversity variables in coral reef monitoring programmes. It also lays the foundation for the publication of a global coral reef status report in 2020;
- b. Any new target or element of the post-2020 framework should also consider how to enable implementation and make sure these enablers (financing, guidance, tools) are available for countries to make use of from the start of the implementation phase, for example the outcomes of the GCRMN status reports and future open access data management; the Allen Coral Reef Atlas resources, the Global Coral Reef Fund;
- c. It is important to stimulate the continued development of metrics that take into account the broader value and societal contribution of healthy ecosystems into developing metrics that are able to measure in addition to the huge steps that are being taken to measure live coral cover;
- d. There needs to be serious thought on how to develop a target that is possible to apply to different contexts, but can still interpreted coherently and resulting change tracked. It may be linked to changing how ecosystems are prioritized looking not at where countries have the biggest coral area, but more at dependence of countries on coral reefs, social and economic impacts of coral reefs and their associated ecosystems – why are they important and to whom;
- e. Recognizing that the challenges facing the conservation and sustainable management of coral reefs and associated ecosystems cross borders, sectors and jurisdictions, build upon the experiences from the 2011-2020 strategic action plan with regard regional cooperation and strengthen the role of regional governance mechanisms as a strategic lever to coordinate and act collectively to address the challenges of multiple anthropogenic stressors.

6. Recommendations

1. Establish an *ad hoc* committee as a mechanism to develop a global target for coral reefs in the context of the post-2020 global biodiversity framework: the proposed *ad hoc* committee would take the lead in developing a recommendation to the CBD post-2020 process regarding coral reefs and associated ecosystems. The first task would be to draft Terms of Reference for consideration of the ICRI General Meeting. Elements for the terms of reference could include:

- Identification of the lead and supporting ICRI members;
- Identification of a broader stakeholder consultation group to ensure sufficient engagement at the earliest possible stage including with relevant ICRI countries who are also Party to the CBD, if they are not included in the *ad hoc* committee as well as other stakeholders, such as private sector stakeholders;
- Preparation of a road map to identify the critical time points ICRI to contribute into the post-2020 process;
- Development of a proposal for intercessional coordination within ICRI to ensure contributions can be made within the timeframe set out by the CBD;
- Drafting of an ICRI briefing paper that would highlight critical points for coral reefs in a post-2020 global framework that ICRI members could share with their relevant CBD delegations for use in negotiations, drawing on sections 5 and 6 of this report;
- Draw on relevant groups, for example relating to possible sustainable financing/ mobilization mechanisms;
- Develop a text of a recommended target for consideration by the ICRI community.

2. To articulate a plan of action for ICRI to engage in the CBD process consistent with the timeline and processes established by the CBD: A process for the development of the post-2020 will be agreed at CBD COP14 in November 2018. The expectation is that this will be a comprehensive and participatory process. It is important that ICRI is aware of the outcomes of COP 14 and the process that will be decided upon to understand the best way to use the formal process and how the ICRI community can best contribute input to the process.

Workshops, consultation phases and reviews have been scheduled. An outline of the current proposal of the process has been presented as figure 3.2 and box 3.2 presented the following opportunities for ICRI to contribute to the development of a post-2020 target on coral reefs via the proposed process:

- Via the written consultations: ICRI has a unique opportunity to coordinate a consistent view across its member countries and other organizations on the need for a coral reef target, and a recommendation for the content of such a target by submitting a coordinated ICR response to the written consultation phases. The first phase has a deadline of the 15 December 2018, which would require a submission based on the outcomes of the ICRI General Meeting on 5-7 December 2018. There would also be opportunities to coordinate a written procedure within the ICRI community to respond to the discussion documents due January 2019 and May 2019;
- Within the context of the planned CBD consultation workshops and to feed into these workshops ICRI could sponsor regional and global workshops on a post-2020 coral reef target and invite ICRI member countries and other relevant key CBD Parties to participate to develop a coherent input around the need and content for a coral reef related target;
- There is an opportunity for ICRI to contribute new data and information to inform the development and adoption of a new, evidence based coral reef target, such as the Allen Coral Atlas, GCRMN Status of Coral Reefs of the World 2020 and any other relevant data, however with both of these products due to deliver in 2020, there would need to be a consideration of how this could be achieved to align with the proposed CBD timeframe.

3. To ensure alignment with other processes, including Agenda 2030, and build on existing regional and global coordination structures: To keep under review the outcomes of CBD COP 14 and the unfolding

process to identify opportunities for alignment with other processes that are seeking the same outcomes and identifying potential partnerships in order to ensure building coherent contributions to sustainable coral reef management and not diffusing effort. As an example, the Fourth session of the UN Environment Assembly (March 2019) will consider an analysis of global and regional policy instruments and governance mechanisms related to the protection and sustainable management of coral reefs (UNEA Res 2/12). This will be useful to consider in the light of a post-2020 framework.

In addition, some elements of the SDGs, especially those related to biodiversity, expire in 2020. It is possible to envisage a parallel process for revision of these SDGs and the biodiversity framework with a view that in 2030 these processes are combined/ aligned, with CBD contributing biodiversity elements to a broader agenda. This may help to get more ownership.

Identify regional and global coordination mechanisms and instruments that could help strengthen the coherent implementation of a post-2020 coral reef target.

Development of a proposed approach and content for how to address the challenges faced by coral reefs and their associated ecosystems and cold-water coral reefs in a post-2020 global biodiversity framework.

4. Strengthen monitoring, data management and indicator development to support future targets relating to coral reefs and associated ecosystems making use of recent innovations in global monitoring and mapping to develop a quantifiable, actionable target and measure progress against the target including through:

- Use of the GCRMN network to support coral reef monitoring and data management;
- The Allen Coral Reef Atlas;
- The potential for using other emerging technologies and innovations to further complement current monitoring efforts;
- how to further develop coral reef metrics and associated ecosystems, particularly in terms of going beyond live coral cover, that could be used across different processes that relate to coral reefs;
- How to ensure the resources are mobilized to support actions by countries relating to monitoring change, including via the new Global Fund for Coral Reefs and other funding mechanisms.

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Annex 1: Method/ Approach and limitations

The review was conducted in October and November 2018.

The Terms of Reference for the review called for consultation of published materials and contact with representatives from the fifteen identified coral reef countries. This section outlines the approach taken to collate documentation and liaise with relevant stakeholders. The limitations of the approach taken for the review and the steps taken to mitigate these limitations are also presented.

Review of relevant documentation

The first phase was a desk-based review of published material drawn from (a) CBD processes and (b) other reports and literature. Beyond foundational documentation and CBD decisions, the focus of the search was on material published since the 5th national reports by Parties to the CBD on their progress for implementing actions relating to the Convention, due in 2014; and the mid-term analysis of progress against the Aichi Targets published in the fourth Global Biodiversity Outlook also published in 2014.

Table A2: Overview of sources of information

CBD related material	National documents/ reports (including National Biodiversity Strategies and Action Plans (NBSAPs), 5 th National Reports; volunteer reports)
	CBD Decisions and Recommendations
	CBD meeting documents and notifications (Including for subsidiary bodies)
	CBD assessments, publications, guidance
Other publications	Peer reviewed research on to AT10 implementation or related issues
	Global assessments or reports
	Regional publications or evaluations
Other resources	Web resources or tools

Identification and interview of relevant stakeholders

The Terms of Reference for the review identify that officials and relevant experts and stakeholders should be consulted. A tiered approach was taken, with the effort focused on trying to talk to representatives of government departments or their relevant agencies that have been working with Aichi Target 10, or its associated issues.

The stakeholder analysis shown in Table A2 was used as the basis for identifying contacts. The regional and global contacts were also requested for assistance in identifying the most appropriate in country stakeholders.

Interviews were semi-structured to enable the respondents to express their experiences and issues that were of importance in their own context. The interviewer used the following themes to guide the discussion:

- The interpretation of AT10 in their country/ context;
- The stakeholder’s reflections on AT10;
- Reflections on the Priority Actions
- Challenges regarding AT10 and barriers;
- Lessons from working with AT10
- Thoughts on the post-2020 framework, particularly with regard the need for a follow up to AT10, and how that might look

Table A2: stakeholder analysis

Group 1: National stakeholders	<ul style="list-style-type: none"> • CBD focal point – Coastal and marine biodiversity or primary NFP; • ICRI focal points, in the case that the country has a nominated focal point; • Other contacts in national administrations or supporting government agencies; • Academic institutions that may be providing data/ evidence into the CBD reporting process.
Group 2: Regional perspective	<ul style="list-style-type: none"> • GCRMN network; • Regional conventions (SPREP, SACEP, etc.); • Regional initiatives (e.g. Coral Triangle Initiative, CORDIO); • Consultants operating in a regional context.
Group 3: Global perspective	<ul style="list-style-type: none"> • Relevant international/ intergovernmental organizations; • Relevant NGOs; • Consultants operating in a global context.
Group 4: other	<ul style="list-style-type: none"> • Private sector/ industry stakeholders; • Civil society stakeholders.

Limitations, consequences and mitigation

This section identifies several limitations with the approach taken for the review and, where it was possible steps that were taken to mitigate these limitations.

Limitation 1: Selection of countries that fell within the scope of the study was by area of coral reef.

Consequence: This resulted in a geographic bias, missing out the East African coast and Mesoamerica, as examples of regions where there is high social and economic dependence on coral reefs.

Mitigation: Made efforts to talk to regional initiatives and experts with broader geographic awareness to try and pick up any other relevant reflections.

Limitation 2: Short period of time to conduct the stakeholder consultation.

Consequence: It requires time to work through a series of contact points to reach the people that have the most appropriate knowledge. In small island states in particular, there is a high work load on the same individuals and it may take time to (a) make contact and (b) to schedule a suitable time.

Mitigation: Maximize the time available for consultation, allow for information to be fed in after production of the first draft. Propose in Recommendations the need to update the report following ICRI if more countries wish to contribute once they have seen an initial draft; Make use of networks within countries and regions to help access a wide range of contacts.

Limitation 3: Report was being prepared at the same time as Parties to the CBD are:

- (a) preparing their 6th National reports against measures taken for the implementation of the Convention and their effectiveness in meeting the objectives of the Convention. This round of reporting includes a special emphasis on final reporting against achievement of the Aichi Targets and are due 31 December 2018 (COP Decision XIII/27 Annex).
- (b) responding to notification SCBD/SPS/AS/JL/JA/JMQ/87674 from the CBD Secretariat requesting information from Parties, other Governments and other relevant organizations on the implementation of the Priority Actions to achieve Aichi Biodiversity Target 10 for coral reefs and other closely associated ecosystems.

Consequence: This timing impacted the capacity of stakeholders to respond to requests relating to this report as many of the target stakeholders are also responsible for the reporting process

Mitigation: Maximized consultation time, accepted written contributions if time was not available to talk;

Limitation 4: Existing assessments of AT10 have shown that it has not been well implemented with mid way progress showing a move away from the target, not towards. Trying to understand the reasons behind this require a high level of trust and some sensitivity as it may feel as though there is a level of failure.

Consequence: Difficult to achieve trust in a short period especially where there are not existing personal relationships and affects the quality and detail of response.

Mitigation: Make best use of existing networks and use of known contacts to help make introductions to new contacts; Use the ICRI Secretariat and principal contacts to help establish contact or support provide context.

Limitation 5: Information lag: Where no responses were received from countries, the report draws on published reports. In some cases these are now out of date (some of the 5th National Reports for example were published in 2014 and based on information that is older than that).

Consequence: Out dated information

Mitigation: Every effort was made to talk to stakeholders within the identified countries as the primary source of information. Where this was not possible, the most up to date information was used. References to the source material have been used so the age of information is transparent.

Annex 2: Overview of the consultation phase.

The countries highlighted have not yet been able to respond and so are not included in the analysis.

Correct as of 22 November 2018.

Summary: 75 people contacted; 22 responded

Country	Stakeholders
Indonesia	ICRI Focal point; CBD Focal point; GRMN focal point
Australia	GBRMPA (ICRI FP) Ministry of Environment (CBD)
Philippines	ICRI Focal point; CBD Focal point; GRMN focal point
France	ICRI Focal point/ Ministère de la Transition Ecologique et Solidaire
Papua New Guinea	CBD focal point
Fiji	ICRI Focal point; CBD Focal point; Contact identified by SPREP
Maldives	CBD Focal points (Ministry)
Saudi Arabia	CBD Focal point
Marshall Islands	CBD Focal Point
India	ICRI Focal point; CBD Focal point; assistance provided by SACEP
Solomon Islands	CBD focal point; Following up with contacts via ICRI Sec / SPREP/ CTI
United Kingdom	ICRI focal points/ Defra; JNCC; CEFAS
Micronesia (Federated States of)	Contact via GCRMN at Guam Univ. No response from CBD focal point
Vanuatu	CBD focal point; contact provided by UNEP-CRU
Egypt	ICRI Focal Point (NOI)/ also contacted CBD Focal point and ICRI Focal point in the Ministry.

Regional organizations

SPREP, SACEP, CORDIO, OSPAR, Coral Triangle Initiative, Micronesian Challenge

In addition the following organizations should be contacted in any follow up: PERSGA, Caribbean Environment Programme, Nairobi Convention.

Global organizations/ Initiatives

UN Environment, Coral Reef Unit; GCRMN network; CBD Secretariat; UNEP-WCMC; TNC; WCS, WWF

Annex 3: Emerging innovations, concepts and initiatives that could support a coral target in a post-2020 context

In addition to the innovation and technology mentioned during the consultation with stakeholders, there are a number of new innovations and initiatives that warrant mention in this report. This is not intended to be exhaustive, but picks up on activities or concepts either mentioned during the consultations or on the radar of ICRI. This report does not evaluate the role of these initiatives and innovations but presents them as a contribution to the discussion on how best to reflect coral reef ecosystems in a post-2020 global biodiversity framework. The experiences expressed by stakeholders are again noted here, urging the need that new developments and use of new technologies should be supported with relevant capacity development, education and dialogue to ensure that the product is appropriate for purpose and the intended benefits can be realized.

The Allen Coral Atlas

The Allen Coral Atlas¹⁶ draws on cutting edge technology to map all of the world's tropical shallow water coral reefs at very high resolution and with a frequency that has not previously been possible. It is the intention of the Atlas to develop a global baseline for live coral reef cover and develop a methodology to detect changes in coral reef health, such as bleaching events or recovery in real time, or near real time. The layer will be frequently updated and fully automated enabling alerts to be created when change happens.

The scope of coverage and the temporal frequency of this product has the potential to address many of the challenges faced in the implementation of AT10 and identified in the section 4.3 of this report. The Atlas product could result in:

- creation of a globally coherent baseline that could be used by all countries to support their national decision making processes as well as reporting against international commitments;
- a comprehensive overview of the state of the world's coral reefs;
- a shift to a leading edge indicator, and no longer relying on retrospective assessment but providing an alert system when change is happening;
- the opportunity for having a status indicator with a clear policy feedback loop and enabling responses to be adaptive;
- enable improved communication/ awareness raising about the coral reef crisis and solutions to the crisis.

Global Fund for Coral Reefs.

The mobilisation of resources to support the sustained capacity needs of long-term coral reef conservation and management within many developing and small island developing states was identified as having been a barrier to progress in the implementation of AT10. A Global fund for Coral Reefs was announced at Our Ocean 2018 as an initiative of Prince Albert II of Monaco and Vulcan Inc. and could be one mechanism to help facilitate action towards a post-2020 coral reef related target.

Consideration of mesophotic coral reefs

The occurrence and potential role of mesophotic coral reefs were brought highlighted in a recent report by UN Environment and GRID-Arendal (Baker et al., 2016). The report draws attention to the fact that light dependent corals are growing in depths down to 150m in clear waters. Given that these coral reefs occur in many locations where shallow water coral reefs are found, but they are not easily accessible and not detectable by satellite imagery and so their extent is not yet well known, nor sufficiently incorporated into marine policy and management discussions. There is however potential that these mesophotic coral reefs could act as refugia for coral species (Baker et al., 2016). Mesophotic coral reefs were not referenced in any of the documentation assessing AT10, nor in the consultations, but appears to be highly relevant to future considerations regarding a post-2020 framework.

¹⁶ see allencoralatlas.org

The Coral Reef Coalition.

A Coral Reef Coalition comprised of eight international organizations of was announced during the CBD COP14 in November 2018 to advocate for decisive action to protect coral reef ecosystems and make coral reef protection a global priority, including in the post-2020 global biodiversity framework to be adopted at COP15 in 2020. The eight organizations are the International Coral Reef Initiative, UN Environment, WWF, the Nature Conservancy, the Wildlife Conservation Society, Vulcan Inc., the Ocean Agency. It will be important to consider the role of this coalition in the development of a coral reef target in the post-2020 framework.

WWF is working with a small set of partner NGOs to explore new ways of working, on-ground and scaling up in particular regions, informed by the latest coral reef climate risk assessments and with a focus on working with communities that have the lowest levels of capacity for conservation work.

The International Seagrass Expert network¹⁷.

The International Seagrass Expert Network was recently established with the support of UN Environment and GRID Arendal. The network is intended to enhance scientific knowledge, consolidate management best practices and develop policy recommendations to raise the profile of the value of seagrass ecosystems through enhancing scientific knowledge, consolidating management best practices and developing policy recommendations to ensure that these ecosystems and the value they provide are incorporated into coastal management and decision-making processes for the sustainable management and conservation of seagrass. This network had a first meeting in June 2018 and could be helpful to engage with to ensure the connection to ecosystems associated with coral reefs.

Partnership for Regional Ocean Governance and the Marine Regions Forum¹⁸

The Partnership for Regional Ocean Governance was initiated in 2015 by UN Environment, the Institute of Advanced Sustainability Studies (IASS), TMG Think tank for Sustainability and the Institute for Sustainable Development and International Relations (IDDRI) to support all forms of regional governance recognizing the crucial role that regional organizations, mechanisms and instruments play in enabling cooperation to deliver sustainability of the oceans. The first Marine Regions Forum will take place in October 2019 with the aim to to develop effective cross-sectoral regional governance concepts for the protection and sustainable use of the oceans.

¹⁷ <http://nbnf.no/en/2018/06/establishing-an-international-seagrass-experts-network/>

¹⁸ <https://www.prog-ocean.org/our-work/prog-marine-regions-forum/>