

# Fisheries and the Targets of the Global Biodiversity Framework - Opportunities, Challenges, and Concerns





**FISHERIES AND THE TARGETS OF THE GLOBAL BIODIVERSITY  
FRAMEWORK – OPPORTUNITIES, CHALLENGES, AND CONCERNS**

IUCN-CEM FISHERIES EXPERT GROUP  
EUROPEAN BUREAU FOR CONSERVATION AND DEVELOPMENT  
2023

## LIST OF AUTHORS

**Charles, Anthony** – Vice Chair IUCN-CEM Fisheries Expert Group; Professor in the School of the Environment and the Sobey School of Business, Saint Mary's University, Halifax, Canada

**Garcia, Serge M.** – IUCN-CEM Fisheries Expert Group

**Kirkegaard, Eskild** – Vice Chair IUCN-CEM Fisheries Expert Group; Independent Consultant

**Rice, Jake** – IUCN-CEM Fisheries Expert Group; Chief Scientist Emeritus with Fisheries and Oceans Canada

## ACKNOWLEDGEMENTS

The following experts have contributed material, ideas, and references, during virtual discussions, by email, or at the request of the authors of this report: Hugh Govan, Jason Link, Abigail Lynch, and Ernesto Penas. In addition, editorial help and coordination was provided by Maximilian Schwarz and Jacopo Pasquero. We wish to express our gratitude for their generosity and patience.

Contributions were progressively assembled by Jake Rice. Many contributions touched on specific Global Biodiversity Framework Targets. In the progressive review process, many FEG members reviewed specific sections of the report, commenting and editing them, adding material and references as needed. Consistency across chapters was ensured by Jake Rice and Maximilian Schwarz.

The elaboration of this report was supported by the Nordic Council of Ministers and the European Bureau for Conservation and Development (EBCD).

The cover page picture is the sole property of the Convention on Biological Diversity (CBD) and has been used in this report following the Global Biodiversity Framework communication guidelines on the CBD website.

### **Disclaimer:**

The designations employed and the presentation of material in this report do not imply any opinion whatsoever on the part of IUCN, CBD, FAO, EBCD, the sponsors of the Fisheries Expert Group of the IUCN Commission on Ecosystem Management, or any of the institutions to which the authors and collaborators are affiliated.

### **Suggested Citation:**

Rice J., Garcia S.M., Charles A., Kirkegaard E. (2023). *Fisheries and the Targets of the Global Biodiversity Framework - Opportunities, Challenges, and Concerns*. IUCN-CEM-FEG & EBCD, Brussels, Belgium.

## TABLE OF CONTENTS

Acronyms .....	6
Introduction .....	8
Target Summaries .....	10
Target 1 – Marine Spatial Planning and Management Processes .....	18
Target 2 – Restoration of Degraded Ecosystems .....	22
Target 3 – Marine Protected Areas and OECMs.....	29
Target 4 – Protection and Recovery of Threatened Species .....	36
Target 5 – Sustainable Harvesting and Trade .....	40
Target 6 – Alien Invasive Species.....	47
Target 7 – Reduce Pollution and its Impact.....	50
Target 8 – Impacts of Climate Change and Ocean Acidification.....	52
Target 9 – Management of Wild Species is Sustainable and Benefits People.....	55
Target 10 – Manage Areas For Sustainable Use .....	61
Target 11 – Restore and Enhance Nature’s Contributions to People .....	67
Target 12 – Urban Areas.....	71
Target 13 – Equitable Benefit Sharing from Marine Genetic Resource.....	73
Target 14 – Integration of Biodiversity in Decision-Making .....	75
Target 15 – Businesses and Biodiversity .....	79
Target 16 – Sustainable consumption choices .....	84
Target 17 – Biodiversity and Benefits from Biotechnology .....	88
Target 18 – Subsidies.....	91
Target 19 – Financial Resources Mobilized .....	94
Target 20 – Capacity Building .....	100
Target 21 – Data, Information and knowledge for decision-making.....	103
Target 22 – Inclusive, participatory governance and decision-making.....	107
Target 23 – Gender Equality.....	112
Glossary.....	115

## ACRONYMS

<b>ABFM</b>	Area Based Fisheries Management
<b>ADLFG</b>	Abandoned, Lost and Discarded Fishing Gear
<b>APEI</b>	Areas of Particular Environmental Interest (used by International Seabed Authority)
<b>BBNJ</b>	Biodiversity Beyond National Jurisdiction
<b>CBD</b>	Convention on Biological Diversity
<b>DPA</b>	Densely Populated Areas
<b>DSI</b>	Digital Sequence Information (regarding genomes and genetic resources)
<b>EBSA</b>	Ecologically and Biologically Significant Areas (used by the Convention on Biological Diversity)
<b>EEZ</b>	Exclusive Economic Zone
<b>EFH</b>	Essential Fish Habitat
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization
<b>FPIC</b>	Free, Prior, and Informed Consent
<b>GBF</b>	Global Biodiversity Framework
<b>GFCM</b>	General Fisheries Commission for the Mediterranean
<b>ICES</b>	International Council for the Exploration of the Sea
<b>ILK</b>	Indigenous and Local Knowledge
<b>IPBES</b>	Intergovernmental Platform for Biodiversity and Ecosystem Services
<b>IPLC</b>	Indigenous Peoples and Local Communities
<b>IUU</b>	Illegal, Unreported or Unregulated fishing
<b>KBAs</b>	Key Biodiversity Areas (used by the International Union for Conservation of Nature)
<b>MGR</b>	Marine Genetic Resources
<b>MPA</b>	Marine Protected Area
<b>NbS</b>	Nature-based Solutions
<b>NBSAPS</b>	National Biodiversity Strategies and Action Plans
<b>NCP</b>	Nature's Contributions to People

<b>OECM</b>	Other Effective [Area-based] Conservation Areas
<b>PSSAs</b>	Particularly Sensitive Sea Areas (used by the International Maritime Organization)
<b>RFMO</b>	Regional Fisheries Management Organization
<b>SAI</b>	Serious Adverse Impacts
<b>SDG</b>	Sustainable Development Goals
<b>SEA</b>	Strategic Environmental Assessment
<b>SOFIA</b>	State of the World Fisheries and Aquaculture (used by the FAO)
<b>SSF</b>	Sustainable Fisheries Framework
<b>SU</b>	Sustainable Use
<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VME</b>	Vulnerable Marine Ecosystem

## INTRODUCTION

In December 2022, the Plenary of the Convention on Biological diversity approved the Kunming-Montreal Global Biodiversity Frame (Hereafter, GBF). This framework lays out four Goals to be achieved by 2050:

- GOAL A – The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050 [...];
- GOAL B – Biodiversity is sustainably used and managed and nature’s contributions to people, including ecosystem functions and services, are valued, maintained, and enhanced, with those currently in decline being restored, supporting the achievement of sustainable development for the benefit of present and future generations by 2050;
- GOAL C – The monetary and non-monetary benefits from the utilization of genetic resources and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably [...];
- GOAL D – Adequate means of implementation, including financial resources, capacity-building, technical and scientific cooperation, and access to and transfer of technology to fully implement the Kunming-Montreal Global Biodiversity Framework are secured and equitably accessible to all Parties [...];

These Goals are supported by 23 Targets to be achieved by 2030, to reflect and indicate progress being made towards each of the Goals.

It was an intent of Parties in negotiating the GBF that each Target be general for all types of ecosystems on the planet, and for all industry and commercial sectors that use or impact biodiversity. This generality has the important property that it ensures the universality of ambition to achieve the Goals in all the ways that Humanity interacts with Nature. However, it means that each Target has components that require interpretation for application to various contexts. Such scope for interpretation is present at a high level, whether the environmental setting is terrestrial or aquatic, and whether the use is directly extractive or one that impacts biodiversity indirectly. It continues to be present as the settings are unpacked – from “aquatic” to marine, coastal or freshwater; from “consumptive use” to fishing, hunting, forestry harvesting or gathering.

The CBD was well aware of the need for interpretation and provided [Guidance on Interpreting each Target](#). This guidance is clear and useful, but remains at a high level, interpreting each Target still for global intent and meaning, with little content on unpacking the Target for different kinds of ecosystems and different types of uses of and impacts on biodiversity.

Some members of the IUCN/CEM Fisheries Expert Group (FEG) were present during various phases in the negotiating of the GBF, including the final Plenary, following the discussion and negotiations of specific text for each Target. During the final Conference of Parties Plenary, some leaders in fisheries policy and management from Parties, RFMOs, and other fisheries interests approached FEG and expressed the desire to have some expert guidance on the GBF specifically for policy makers and managers in fisheries on all scales. The guidance could explain what aspects of each Target had implications specifically for fisheries, where existing fisheries governance processes could take on the intent of each Target, and where fisheries would need to engage with other governance and management bodies to contribute most effectively to achievement of each Target.



This document was prepared by FEG in response to those requests. For each of the 23 Targets, the full text of the Target is presented, and each phrase in the Target relevant for fisheries and/or aquatic ecosystems is interpreted specifically in the contexts of fisheries on small to large scales, and for aquatic ecosystems, when appropriate differentiating freshwater, coastal and open marine systems. This phrase-by-phrase information on each component of a Target is followed by a brief summary of the major opportunities and challenges that the Target offers for fisheries policymakers and managers. Many opportunities are to advance initiatives that have already been part of fishery agendas since the Ecosystem Approach to Fisheries and the Precautionary Approach were embraced more than two decades ago<sup>1</sup>. Likewise, many of the challenges fisheries may encounter when acting on the Target are also familiar but gain prominence from the Target.

Fisheries agencies and organizations are not the only perspective interested in how the GBF could be applied in fisheries. Some conservation advocacy groups are likely to interpret text in the Targets as justification for fishing pressure to be severely restricted or fully excluded from places and time of operating, even when the fisheries meet usual standards of sustainability. Consequently, for each Target there is also a brief summary of key ways in which the text could be used by strong critics of fisheries to push for such increasing of restrictions, even on sustainable fisheries.

The target audience for this report is the community of fisheries managers and policymakers and may be of interest as well to the fishery sector itself and fishery stakeholders. The team of FEG members working on each Target focused on presenting clear messages particularly for fisheries managers and policy makers, building jointly on their familiarity with the expert scientific literature and the knowledge systems of Indigenous Peoples and local communities, and on their own extensive experience as expert advisors to, and in some cases members of, the policy and management communities. From that knowledge and experience, for each Target a small number of emergent messages for policymakers are extracted, and comprise the following section of this Report. For the Targets with high relevance to fisheries, these emergent messages are presented in three bullet form summaries. The first covers the opportunities the Target presents to fisheries and fishery authorities to access additional resources and expertise needed to accelerate actions that have already been recognized as parts of in the Ecosystem Approach and Precautionary Approach for Fisheries. The second bullet usually summarizes new challenges presented to fisheries by the respective Target, in order to further and more effectively manage the impact of fisheries on biodiversity. Finally, the third bullet summarizes the threats to fully sustainable fisheries that could be promoted by aggressive interpretations of the Target by fishery critics. Those sets of bullets are followed by the more extensive treatment of each Target, still in the context of policy and management and with links to key Agreements on which actions might be built, rather than as an academic treatment with literature citations.

IUCN-CEM-FEG would like to thank the Nordic Council for funding the preparation of this report, the EBCD office for logistic support and preparation of the final document, and all the individual FEG members who contributed to the drafting teams for each Target.

---

<sup>1</sup> <https://www.fao.org/in-action/globefish/publications/details-publication/en/c/338508/>; <https://www.fao.org/in-action/globefish/publications/details-publication/en/c/346126/>

## TARGET SUMMARIES

### TARGET 1 – MARINE SPATIAL PLANNING AND MANAGEMENT PROCESSES

- Fisheries interests must be meaningfully and fully engaged in integrated spatial planning and management processes at all relevant scales, but spatial planning and management are well established in fisheries.
- If fisheries interests are well prepared and fully engaged, spatial planning processes provide fora where the benefits to communities, economies, and ecosystems from well-managed fisheries can be showcased to audiences unaware of the benefits that the fisheries are providing.
- Spatial planning processes only become threats if fisheries are institutionally excluded from meaningful participation in them, choose not to engage, or are not supported adequately enough to make clear, evidence-based inputs.

### TARGET 2 – RESTORATION OF DEGRADED ECOSYSTEMS

- Target 2 represents an opportunity to strengthen the Ecosystem Approach to Fisheries, by increasing focus on stock rebuilding and habitat protection and restoration, better recognizing the interdependence of species and habitats, and between them and the overall health of the ecosystem.
- Engaging local fishing communities in the planning and implementation of restoration projects can promote co-management approaches, enhance local stewardship of fisheries resources, and create economic opportunities aligned with sustainable fishing practices.
- Potential challenges from Target 2 could arise from inappropriate application of terrestrial conservation concepts to marine ecosystems; scepticism among some conservationists that well-managed sustainable fisheries do not result in ecosystem “degradation”, disproportionately burdening fisheries with restoration constraints, and inadequate resources available to effectively take the opportunities offered by Target 2

### TARGET 3 – MARINE PROTECTED AREAS AND OECMS

- Inclusion of OECMs in Target 3 presents an opportunity for fisheries to illustrate and strengthen the Ecosystem Approach to Fisheries, through a more systematic use of Area-based Management Tools, and with baselines, targets, indicators, and monitoring that are routine in well-managed fisheries showcased as components of “best practices” for spatial conservation.
- Fisheries will be challenged by claims from some protected area proponents of being inherently incompatible with the intent of Target 3, arguing that even areas sustainably fished do not support sufficiently undisturbed biological communities and habitats. Fisheries monitoring must extend to all species, not solely commercial species, to counter these critics.
- Applications of Target 3 favouring Protected Areas over OECMs has potential to displace fisheries from areas long used by the fisheries. Displacements could be particularly severe impacts on small-scale fisheries and livelihoods, in coastal and any densely populated areas where the 30% target may be difficult to reach.

#### **TARGET 4 – PROTECTION AND RECOVERY OF THREATENED SPECIES**

- Target 4 provides an opportunity for fisheries jurisdictions to obtain increased resources for monitoring of fishery catches, particularly for full observer coverage and catch reporting, to increase compliance and improve evidence of misreporting, and records of catches of non-target species.
- This target creates an incentive for greater engagement of fisheries experts on bodies conducting the assessments of risk of extinction of marine or freshwater species or developing the recovery plans for listed aquatic species.
- Fisheries may be assigned a disproportionate burden in reducing pressures on protected species, because of unavoidable bycatches of protected species, and because other pressures may be harder to manage for reliable reduction in pressures on the listed populations.

#### **TARGET 5 – SUSTAINABLE HARVESTING AND TRADE**

- Target 5 should impose little burden on policymaking for fisheries that have been improving their sustainability through the Ecosystem Approach, and the Target can justify allocating sufficient resources for implementation of such policies and actions.
- The explicit acknowledgement of “respecting and protecting customary sustainable use by indigenous peoples and local communities” shifts the burden from small-scale fisheries and communities who struggle to preserve their existence and ability to maintain catches, to imposing accountability on national and regional authorities for the well-being and sustainability of the small-scale fisheries and communities.
- Fisheries agencies and experts need to participate fully in meetings and technical workshops where sustainability benchmarks are being set for any ecosystem properties likely to be affected by fisheries, and to develop effective metrics for evaluating the sustainability of data-poor fisheries.

#### **TARGET 6 – ALIEN INVASIVE SPECIES**

- For open marine ecosystems and for large-scale fisheries, alien invasive species are rarely an issue, and the Target has few implications for such fisheries.
- For lacustrine, riparian and some coastal areas, alien invasive species potentially may pose a threat, by disrupting the fish communities traditionally supporting fisheries, with serious impacts on customary small-scale fisheries. Alternatively, highly invasive species could provide a new, and sometimes very productive, resource to support small-scale fisheries and livelihoods.
- These dual possibilities for lacustrine, riparian and some coastal areas mean that the provisions of Target 6 to deter introduction of alien invasive species are important, to prevent disruption of native fish populations and communities, but where invasive species have become well-established, efforts to manage or eliminate them should take into account impacts on any fisheries harvesting those populations.

#### **TARGET 7 – REDUCE POLLUTION AND ITS IMPACT**

- Target 7 is indirectly beneficial for fisheries, through promoting the reduction in pollution of all systems, including aquatic ones, with concomitant benefits to healthier, more productive, and more diverse fish populations and ecosystems.

- The major direct implication for fisheries is the intent to reduce abandoned, damaged, or lost fishing gear. This requires fisheries to be more responsible with their fishing gears, but if successful reduces entanglement of such gears in ongoing fishery operations, and removes a frequent criticism that fisheries generate marine debris.

#### **TARGET 8 – IMPACTS OF CLIMATE CHANGE AND OCEAN ACIDIFICATION**

- Progress on this target will benefit fisheries, through slowing the reduction in productivity and changes in distribution of fish populations supporting fisheries. However, these benefits will accrue slowly and for the present fisheries must continue to develop strategies to adapt to ongoing changes in fish stocks and ecosystems due to climate change. Fisheries have been challenged to conduct the necessary monitoring, analyses and modelling to support such adaptation strategies, and these demands on fisheries and fishery experts will increase.
- Few of the climate mitigation actions necessary to achieve Target 8 will make major demands on most fisheries, although there is a growing criticism that fisheries with bottom contacting gears disturb seabed sediments and release carbon dioxide sequestered in the sediments. Evidence on these points is incomplete and some is contradictory, but the profile of the debate is growing quickly.
- With terrestrial sources of protein-rich foods often having high carbon emissions compared to well-conducted fisheries, there may be an increased demand for fish from aquaculture and capture fisheries, increasing the need for effective management of these fisheries and culture facilities.

#### **TARGET 9 – MANAGEMENT OF WILD SPECIES IS SUSTAINABLE AND BENEFITS PEOPLE**

- Both Target 9 and Target 5 justify fisheries jurisdictions and participants to lobby for additional resources for efforts to improve the sustainability of the socio-economic (9) and bio-ecological (5) aspects of fisheries and recognize that fisheries do indeed contribute broadly to human well-being on all scales.
- Target 9 recognizes an expanded range of benefits from fishing, from supply of food and revenue, to making major contributions to employment and well-being of communities, families and cultural identity of communities and Indigenous Peoples, legitimizing their role in fisheries governance and decision-making.
- The main possible threats to fisheries from Target 9 are indirect, with fishery critics trying to interpret “customary sustainable uses” as preventing small-scale fisheries from both adopting new technologies and fishing for markets rather than subsistence consumption. Such interpretations continue the marginalization of such communities and fishery participants economically and socially.

#### **TARGET 10 – MANAGE AREAS FOR SUSTAINABLE USE**

- Target 10 brings in two relatively new terms (and possibly concepts) becoming widespread in terrestrial uses of biodiversity but not common in fisheries: “Sustainable Intensification” and “Natures Contributions to People”. Both are readily compatible with the Ecosystem Approach to Fisheries but could lead to mis-understanding and complex policy dialogue, if the terms bring with them interpretations suitable for terrestrial food production and other uses, but which require adaptation for applicability in many fisheries. Thus, fisheries must engage with the setting where

these terms and concepts are being developed and strategies for action explored, to ensure interpretations are appropriate for aquatic systems.

- Target 10 increases the need to spatially map the areas important for fisheries and aquaculture, ideally assessing the past, current and future (potential) footprint of fishery activities. Such mapping is needed to better assess potential conflicts among ocean uses and between uses and biodiversity protection, to have the evidence necessary to represent fishery interests in discussions about the sustainability of the cumulative uses of all areas where fisheries occur.
- Target 10 is likely to be the Target where discussions of “Blue Solutions” for the biodiversity crisis are discussed. Many fishery critics are using that phrase to apply negative pressure on all forms of large-scale fisheries (and other uses of biodiversity), and fishery jurisdictions need to become more engaged in those dialogues to present a more balanced view of fisheries as already being “Blue Solutions” to hunger and poverty.

#### **TARGET 11 – RESTORE AND ENHANCE NATURE’S CONTRIBUTIONS TO PEOPLE**

- The most obvious opportunity for fisheries will be that Target 11 greatly strengthens the justification for widespread application of EAF. Target 11 also strengthens the justification for keeping objectives for social and economic outcomes at a priority comparable to biodiversity objectives, contrary to the push by some protectionists for biodiversity objectives to have priority over any other objectives. Target 11 does not reverse the prioritization but sets all types of goals on a level playing field, to be addressed according to the GBF “as a whole”.
- It is that “according to the GBF as a whole” that may present the greatest challenge to implementing Target 11. Individual Targets tend to be taken individually in policy and implementation discussions, and fisheries will be challenged to keep the dialogue appropriately holistic and inclusive.
- The phrase “Nature-based solutions” is often presented as a package of measures, intended to collectively be a “solution” provided by natural processes to some aspect of degraded ecosystems and/or people under stress. There is a need to counter interpretations that argue this should mean that Nature should be perturbed as little as possible so it can provide its “solutions”, and extractive uses like fisheries interfere with the solutions. The phrase can be interpreted far more broadly, but again, fisheries jurisdictions have to engage in the often terrestrially dominated dialogues where “Nature-based Solutions” are being further unpacked, to ensure that more inclusive interpretations are adopted.

#### **TARGET 12 – URBAN AREAS**

- Target 12 offers to fisheries an opportunity to advocate for a better coastal environment and to participate actively in planning processes for healthy coastlines and their uses. A lack of participation of the fishery sector in such processes will leave fisheries very vulnerable to increasing displacement and exclusion by other developing economic sectors and urban sprawl.

#### **TARGET 13 – EQUITABLE BENEFIT SHARING FROM MARINE GENETIC RESOURCES**

- Capture fisheries are unlikely to be affected directly by activities under this Target, at least not in the near future. At this stage of progress in genomics, digital-sequence information, and related research, potential impacts on aquaculture are unknown but could be large in the medium term.

Consequently, aquaculture and fisheries should at least stay abreast of major developments in this area.

- The knowledge of fishers, particularly small-scale fishers, could be of value to researchers in this area, and they should be aware of their rights to compensation for sharing their knowledge, should they choose to do so.

#### **TARGET 14 – INTEGRATION OF BIODIVERSITY IN DECISION-MAKING**

- Target 14 clearly gives Fisheries Management Agencies at the relevant levels of government primary responsibility for managing the ecosystem effects of fisheries. They have to *collaborate and integrate* with the actions of other environmental and economic Ministries, but the lead for policy development and implementation lies with *fisheries* jurisdictions. This could be important in contexts where other Ministries are seeking increasing authority over many aspects of biodiversity and its uses.
- Target 14 also provides a call to accelerate progress on the initiatives fisheries have been undertaking for decades to mainstream biodiversity into the business and operations of fisheries management.
- This Target contains lists of activities relevant to the Target that provide some advantages to fisheries. The Target encompasses familiar initiatives such as eco-certification, but also may prompt calls for activities such as fisheries to become part of, and/or subject to, strategic environmental assessments and environmental impact assessments, which could be very demanding for fisheries.

#### **TARGET 15 – BUSINESSES AND BIODIVERSITY**

- Target 15 is directed at the “business” of uses of biodiversity and the value chain to the consumer. As a sector that has strong regulatory authorities, its implications for large scale fisheries are primarily for how the later steps in the fisheries value chain can take actions that improve both sustainability and consumer awareness of the importance of sustainable seafood. Many of these steps are already well-established in well-managed fisheries, and their greater use should contribute to existing goals for fisheries.
- Target 15 does have provisions in multiple places that call for greater equity in access to uses of biodiversity and sharing of benefits from such uses. In fisheries, where licence limitation and other tools for managing effort can be very important, these provisions could cause serious challenges to established management regimes, if pursued aggressively by interests that did not feel they had equal opportunity for access to fishery licences or comparable permits to fish.

#### **TARGET 16 – SUSTAINABLE CONSUMPTION CHOICES**

- Almost all the specific actions called for or suggested by Target 16 are rarely within the mandate of fisheries management authorities, nor are they traditionally undertaken by the fishing industry. However, the general types of initiatives consistent with Target 16 would all be beneficial to fisheries, through better education of consumers about the value of fishery products, greater consumer demand for documentation of the sustainability of fishery products in the market, and a demand for a lower overall footprint of the food sector on the planet.

## **TARGET 17 – BIODIVERSITY AND BENEFITS FROM BIOTECHNOLOGY**

- This target has few implications for capture fisheries on any scale.
- For aquaculture, some biotechnology research is undoubtedly underway, but from FAO sources, biotechnology seems to be far more advanced in crop and livestock production than in fish culture. The regulatory frameworks to protect biodiversity from release or escape of biotechnology products into the wild are being developed to protect terrestrial ecosystems, and their effectiveness and relevance in aquatic systems may require review, as biotechnology expands its role in aquaculture production.

## **TARGET 18 – SUBSIDIES**

- The WTO Agreement on Fisheries Subsidies, which was adopted at the 12th Ministerial Conference (MC12) on 17 June 2022 would address the intent of Target 18 well, for actual subsidies, if the Agreement is implemented effectively.
- Target 18 is broader in scope than simply reducing harmful economic and financial subsidies, encompassing “incentives” generically to include socio-cultural, moral and/or institutional incentives as well as financial ones. Given the challenges to gain consensus on how to differentiate harmful from constructive financial subsidies in fisheries, it may be an equal, if not larger, challenge to gain consensus on harmful and non-harmful socio-cultural, moral and/or institutional incentives. Fisheries must be part of any legitimate governance dialogue on such differentiations, to ensure the outcomes are appropriate for efforts to ensure the security of fisheries and fishery-dependent livelihoods.

## **TARGET 19 – FINANCIAL RESOURCES MOBILIZED**

- Many aspects about the amount of financial resources necessary to mobilize for GBF implementation are not directly relevant fisheries, although the call for very large increases in funding devoted to research and management to enhance biodiversity and reduce pressures and impacts is as welcome in fisheries as in any other sector, and fisheries have made substantial progress in developing collective actions among harvesters, processors and the supply-chain to make fisheries more efficient and sustainable.
- A major threat of Target 19 for fisheries comes from endorsement of a number of financial instruments aiming to make those using biodiversity pay far more for the privilege of using a natural resource and require those damaging it to pay for damage. Depending on how such instruments are adopted and applied, they could result in much greater costs being imposed on capture fisheries, simply for the right to fish. Fisheries interests need to be fully engaged in governance processes working to implement these non-standard financial instruments that may be part of “resource mobilization”.
- A second potential concern for fisheries regarding Target 19 is that Environmental Non-Governmental Organizations can be one of the vehicles for resource mobilization, and well-financed ENGOs unfriendly to fisheries may gain much greater profile in policy and public dialogue regarding fisheries.

## **TARGET 20 – CAPACITY BUILDING**

- Target 20 is crucial to the success of conservation and sustainable use of biodiversity, in fisheries or any other sector. However, nothing in the content of the Target differs from what are generally accepted approaches to building capacity, knowledge, technological, and governance capabilities that are well-established in fisheries.
- As long as capacity-building does not become donor-controlled and over-ride the interests of communities and jurisdictions receiving the capacity building efforts, Target 20 poses many opportunities and little threat to fisheries.

## **TARGET 21 – DATA, INFORMATION AND KNOWLEDGE FOR DECISION-MAKING**

- For fisheries of fully developed economies, Target 21 is an endorsement of current practices and offers opportunities to continue to improve the accessibility of information systems, mechanisms to share information, monitoring and assessments, and integration of the knowledge of Indigenous Peoples and local communities. It also highlights the need to compare the performance of available management tools and options.
- For fisheries in less economically advantaged areas, there are major challenges both in acquiring the necessary resources and capacity for collecting, analysing and sharing the types of information referenced in the Target, and for gaining greater respect for the other forms of knowledge of Indigenous Peoples and local communities, that has often allowed fully sustainable fisheries to thrive for generations, yet may be culturally proprietary and not appropriate for sharing without restrictions on uses.
- The potential pressures on fisheries could come from critics of fisheries using phrases in the Target make unrealistic demands on data quantity and quality before accepting the information as sufficient for decision-making, and for “best available information” regarding ill-defined objectives for biodiversity or properties of biodiversity that are inherently difficult to quantify. These threats can be managed proactively through engagement with appropriate marine scientific bodies.

## **TARGET 22 – INCLUSIVE, PARTICIPATORY GOVERNANCE AND DECISION-MAKING**

- The provisions of Target 22 are familiar to fisheries jurisdictions and fisheries, and the Target presents opportunities to showcase progress already made on bringing previously marginalized groups into fisheries governance processes, and to increase the role of Indigenous Peoples in all aspects of fisheries. None of these initiatives may be complete, but progress is being made broadly in the parts of the world where fisheries management is adequately resourced.
- Fisheries may encounter two quite different challenges from Target 22. Special interest groups with skill in advocacy tactics can use this Target to demand greater inclusion of themselves in fisheries decision-making processes and influence outcomes in ways that disrupt sustainable fisheries. Also, in areas where fisheries are managed through complex assessment models and harvest control rules, meaningful incorporation of knowledge from Indigenous Peoples and local communities may prove difficult, even with a sincere will to do so.

## **TARGET 23 – GENDER EQUALITY**

- The importance of gender equity is well-recognized in the fishery policy sector, but not necessarily implemented in practice. Indeed, practically one cannot show full and equitable participation of



women and girls in *all* aspects of fisheries, but acknowledgement of their many roles in fisheries overall has improved. Some barriers to full gender equality are operational, as some roles in fisheries and fishing vessels have not been designed to be equally welcoming to men and women and are changing very slowly. There are also still aspects of gender differentiation embedded in some cultures, and these must be addressed above the scale of individual fisheries. However, Target 23 should offer little that is conceptually new to fishery governance, even if the impediments are difficult to overcome.

## TARGET 1 – MARINE SPATIAL PLANNING AND MANAGEMENT PROCESSES

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE THAT ALL AREAS ARE UNDER PARTICIPATORY, INTEGRATED AND BIODIVERSITY INCLUSIVE SPATIAL PLANNING AND/OR EFFECTIVE MANAGEMENT PROCESSES ADDRESSING LAND- AND SEA-USE CHANGE, TO BRING THE LOSS OF AREAS OF HIGH BIODIVERSITY IMPORTANCE, INCLUDING ECOSYSTEMS OF HIGH ECOLOGICAL INTEGRITY, CLOSE TO ZERO BY 2030, WHILE RESPECTING THE RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES.

This Target calls for all ocean and coastal areas to have processes in place for both fully integrated spatial planning for uses of the ocean (and lands), and for management processes that can implement the outcomes of the spatial planning processes. It further suggests that if past planning actions were considered sufficient, and if the management processes were considered sufficiently effective, possibly the management processes alone would be sufficient for the intent of the Target. The stated intent of Target 1 is to halt loss of areas of high importance for biodiversity by 2030. Although 2030 seems an ambitious target date, the data received strong support during negotiations. The Target does not mention any of the acronyms referring to areas that have met various criteria for the presence of features of high importance for biodiversity, such as EBSAs, VMES, KBAs, PSSAs and APEIs, intentionally to avoid a long negotiation of all the acronyms that would have to be included to satisfy all participants in the negotiations. Areas with any of those designations are all open for consideration as areas of high biodiversity importance. The need for special consideration for areas important to Indigenous People and local communities is explicitly present in the Target language, but how that special consideration is to be accommodated is not specified.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **All areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes**

The adjectives describing the desired nature of spatial planning processes call for processes that are now fairly standard when governance systems have the capacity for conducting spatial. Little new is introduced by listing them in the Target. However, ensuring that the planning processes are fully biodiversity inclusive, rather than just partitioning an area among usage sectors, may require modification to the planning approaches taken in some areas.

The addition of the phrase “and/or effective management processes” may be more problematic in the marine realm, however, because the term is not defined in the Target. It can readily be argued, for example, that all Regional Fisheries Management Organizations (RFMOs) and fishing nations have “management processes” in place, but it can also be argued that many are not effective (overfishing is widespread), or fully participatory, and, with jurisdiction solely over fisheries, they are not integrated with other sectors. Regional Seas Organizations are more multisectoral in scope, but many of them do not yet have capacity for comprehensive spatial planning, and few are linked directly to “Management processes”. Greater clarity on what “management processes” are and are not consistent with the intent of the Target will be needed quickly.

In addition. the real challenge from this phrase is that ALL areas should have undergone these participatory and integrated planning and/or management processes and had their outcomes implemented by the end

of this decade. This will require very large amounts of capacity building for many areas of the ocean and coasts, and with the BBNJ Treaty only months old, even governance processes to oversee such planning still have to be developed for Areas Beyond National Jurisdiction. In addition, all nations suffer from budget constraints and establishing priorities for action is unavoidable. As a consequence, achieving fully effective planning and management processes on 100% of the oceans, coasts and freshwater area may not be possible by the target date.

### **Bring the loss of areas of high biodiversity importance close to zero by 2030**

Most sectors active in the ocean have criteria and processes for identifying areas of high biodiversity and have made substantial progress in applying their criteria and identifying such areas in much of the world's ocean and coastal areas. This pre-positions the ocean to have the areas of high biodiversity importance identified fairly readily. Where assessments have been done of the status of biodiversity in areas meeting the various criteria for high biodiversity importance, many are found to have their biodiversity features in decline, but few, if any, have actually been fully lost. Therefore, the letter of the phrasing may be achieved by 2030, with complete losses of such areas at or near zero. However, with many areas having important biodiversity features in ongoing decline, with little evidence that the declines will cease in the near future, the spirit of the Target will not be secure for many areas of the ocean. Particularly, as the Target refers to "loss" generically, and not total loss, it can be interpreted as saying that any reduction in the size of the area meeting the criteria for high biodiversity importance is a loss, making achievement of the Target challenging even by 2050, let alone by 2030.

### **Including ecosystems of high ecological integrity**

Even though there is substantial debate in the expert literature about exactly what characterizes "high ecological integrity," almost all the sectors that use the ocean and its resources have criteria for identifying areas of high biodiversity importance, and most of those sets of criteria include features that would be considered indicative of high ecological integrity, such as the CBD EBSA criterion on Naturalness. This phrase does not present any new challenges for application in the ocean.

### **Respecting the rights of Indigenous Peoples and Local Communities**

This acknowledgement of the need for special consideration of Indigenous People and Local Communities (IPLCs) is found in several of the GBF Targets. It will be more fully discussed in the context of Target 22, but in this case, adds little to the Target that is not already under discussion in marine spatial planning and management. This is not saying that the rights and needs of IPLC are already fully addressed and accommodated by all uses of the ocean in all parts of the ocean. However, including the phrase in Target 1 is unlikely to prompt many discussions that are not already happening between regulatory bodies and the IPLC communities.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

The greatest opportunity for fisheries from Target 1 is simply the opportunity for greater security of operations in the medium and longer term. It requires fisheries interests to be meaningfully and fully engaged in the planning and management processes. If fisheries are engaged and these processes reach conclusions that have consensus among all the participating perspectives, fisheries can plan their operations knowing when, where to operate, and key aspects of how they will be able to operate. This may require accepting some spatial restrictions on available fishing areas and times. However, if the planning and management processes follow best practices, all the evidence supporting the final spatial and temporal arrangements will be available to all participants and form the basis for the options considered and accepted or rejected. If fisheries are full partners in these processes, they will then be engaged in how the evidence is interpreted and applied, increasing the likelihood that their interests will

be reflected in the final outcomes. Such a process becomes a forum where the benefits to communities, economies, and ecosystems arising from well-managed fisheries can be showcased to larger audiences who may be unaware of the benefits that the fisheries are providing. Once accepted, these arrangements will be secure until the next planning cycle of integrated assessments and review of spatial arrangements. That gives fisheries a more stable planning environment, rather than frequently facing challenges to impose more and more restrictions on fisheries, and erosion of their area of potential operations, as critics of fisheries try to pursue partisan agendas.

This greater security can be particularly important for long-established small-scale fisheries, where there have been many cases of displacement of these fisheries to allow alternative uses of the space and resources. Even where the planning and management processes promise employment of some community residents in these alternative uses, the changes in how livelihoods are provided for when new uses of their traditional areas displace the small-scale fisheries can fundamentally alter the cultures and opportunities in ways the communities have not chosen. Ensuring the rights of Indigenous Peoples and local communities are respected in these planning and management processes, as per the final provision in the Target, can be a step towards giving these communities actual tenure over the marine, coastal and freshwater areas and resources which have historically supported their communities and cultures.

In addition to helping to protect fisheries of all scales from critics of the footprint of fisheries driving an erosion of the area and time available for fishery operations, good spatial and temporal practices can help to mitigate and reduce likelihood for conflicts among sectors that simply cannot operate in the same places and times without interfering with each other's operations. As new uses of the ocean for renewable energy, intensive aquaculture production, leisure and recreation, and other uses increase, many of these new uses simply make it difficult or impossible for sustainable fisheries to operate efficiently. Partitioning an area in space and time to accommodate these new and growing uses may result in some compromises in the scope of fishery operations. However, the processes will also constrain and make clear the nature and rate at which those alternative uses can grow, again potentially resulting in greater security for fisheries in the medium term.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Integrated spatial planning and management processes in their own right do not pose threats to fisheries, as long as fisheries are accepted as full partners in the processes and have the capacity to participate effectively. In objective, evidence-based dialogue, sustainable fisheries can make strong cases for their place as legitimate and responsible users of ocean areas and resources. The processes only become threats if:

- a) fisheries are institutionally excluded from meaningful participation in the processes,
- b) fisheries are not aware of, or choose not to engage in. the processes, yet the outcomes impact the future opportunities for fishing,
- c) fisheries are not supported adequately enough to make their inputs clear, evidence-based, and effective.

Each of these is an avoidable threat, as long as fisheries ensure the ocean governance activities acknowledge their rights and the benefits they produce, invest in capacity building, and devote time and resources to ensure they are well prepared and well represented in the processes.

#### **5. SYNTHESIS**

Marine spatial planning is widespread but far from universal across the world's marine, coastal and freshwater areas. It can be resource demanding to conduct, but even narrative information can be used

to provide a general view of how multiple activities can be conducted in an area, while keeping ecosystem impacts sustainable. Fisheries interests need to ensure they are well prepared and fully engaged in the spatial planning processes. However, when those conditions are met, marine spatial planning can play a valuable role in supporting the longer-term tenure and security of sustainable fishery operations.

## TARGET 2 – RESTORATION OF DEGRADED ECOSYSTEMS

### 1. BRIEF INTRODUCTION TO THE TARGET

TO ENSURE THAT BY 2030 AT LEAST 30 PER CENT OF AREAS OF DEGRADED TERRESTRIAL, INLAND WATER, AND COASTAL AND MARINE ECOSYSTEMS ARE UNDER EFFECTIVE RESTORATION, IN ORDER TO ENHANCE BIODIVERSITY AND ECOSYSTEM FUNCTIONS AND SERVICES, ECOLOGICAL INTEGRITY AND CONNECTIVITY.

This Target is highly relevant to fisheries. Inland, coastal and marine systems are explicitly mentioned in the Target. Restoration is an integral part of the CBD (1992) Convention (Article 8f) which seeks to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies. As the Convention specifies, this applies both to marine and inland ecosystems.

On the one hand, human-induced habitat degradation likely results in a decline in ecosystem functions and services, and resilience, potentially affecting provisioning services, fisheries production, and food security for billions of consumers and dependent human communities. On the other hand, although ocean ecosystems are rarely included among the most degraded ecosystems on Earth, many inland water ecosystems and densely populated coastal and riparian areas are severely degraded by multiple uses. Fisheries and extensive coastal aquaculture can be among the significant impacting sectors. They should therefore be involved in 1) promoting global restoration of biodiversity and habitats (to improve their productivity); 2) assess and adjust their performance (as needed) to reduce, mitigate, or eliminate their impact; and 3) to ensure that restoration strategies do not inequitably or unjustifiably impact the sector livelihoods and the global food security.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Degraded**

The CBD Guidance for Target 2 indicates that habitat degradation is the result of human-induced processes that result in a decline in biodiversity, ecosystem functions and services, and resilience. It states that degradation can take many forms and can be measured in different ways.

This definition applies to resources as well as habitats. Indeed, environmental degradation has also been defined as a process where humans have exceeded a resource's natural replacement rate and the available supply has begun to shrink, and as a process of depletion or destruction of a potentially renewable resource such as wildlife, by using it at a rate faster than it can be naturally renewed.

Depending on the degrees of impact and reversibility of the modifications, an area and/or the resources it contains, may be considered degraded, damaged, or destroyed; depending on whether the impact is small, large but reversible, or large and irreversible. By analogy to a "degraded forest", a degraded fishing area would be an area that delivers a reduced supply of goods and services, maintains only limited biological diversity, has lost the structure, function, species composition and/or productivity normally associated with the types of resources expected at that site.

#### **Effective restoration**

Restoration is defined in the CBD Glossary as the return of an ecosystem or habitat to its original community structure, natural complement of species, and natural functions. As a mirror image of

degradation, restoration may also be defined as the process of actively managing the recovery of an ecosystem that has been degraded, damaged, or destroyed, with various objectives and a diverse set of actions. From that perspective, degraded Essential Fish Habitats, and Vulnerable Marine Ecosystems, might be restored, using spatial tools such as OECMs and MPAs.

The general principles of restoration guiding the [United Nation Decade on Restoration](#) stress that restoration: 1) Contributes to global goals the Sustainable Development Goals (SDGs) and the goals of the Rio Conventions (e.g. on climate change); 2) Promotes inclusive and participative governance, social fairness, and equity from the start and throughout the process and in its outcomes; 3) Includes a continuum of restorative activities, combining spatial and non-spatial tools in the area; 4) Aims to the highest level of recovery for biodiversity, ecosystem health and integrity, and human well-being, i.e., providing benefits to nature and people; 5) Addresses direct and indirect causes of degradation, like unsustainable extractive activities, pollution (and resulting climate change), perverse incentives, unsustainable consumption patterns, and disrespect for sustainable practices; 6) Incorporates all types of knowledge and promotes their exchange and integration; 7) Is based on well-defined and measurable ecological, cultural and socio-economic objectives in the short-, medium-, and long-term; 8) Is tailored to the local ecological, cultural, and socio-economic contexts, viewed within the broader ecological and seascape contexts, equitably accounting for societal and local needs and capacity; 9) Includes monitoring, evaluation, and adaptive management throughout the restoration process and beyond it. This requires measurable objectives, planning, targets, baseline data and indicators, milestones, surveys, and recurrent performance assessment; and (10) Is enabled by supporting legal, financial, and policy overarching or specific frameworks.

*Effective* restoration is a restoration that adapts, evolves, and reaches the restoration target. It needs appropriate implementation resources and long-term monitoring. Management action and monitoring may be minimized if the restoration measures eliminate the factors causing the degradation, but the socioeconomic and political costs of eliminating the drivers may be high, and reversibility must be reasonably ensured. Because restoration is a long-term process, the [CBD Guidance](#) specifies that the restoration target does not require areas to be fully restored for the corresponding area to be counted against the 30% restoration area target, but effective restoration activities must have been initiated (). It should be noted that measuring the effectiveness in reaching the objective to restore 30% of the degraded areas implies that the extent of such areas is already determined at global level and is possible to down-scale to every State's jurisdiction. This is already challenging on land and even more in the ocean.

### **Connectivity and integrity**

An area with high ecological integrity is one which has a composition, structure, function, and ecological process close to that of a natural ecosystem. Connectivity ensures the exchanges across space that are needed for maintenance of life cycles. Both considerations are important in the design of restoration activities.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Opportunities**

Target 2 represents an opportunity for the fishery sector to demonstrate its long-standing action for maintenance and rebuilding of stocks and protection of essential habitats, and to take stock and respond to the justified criticisms regarding many unsustainable fisheries through taking corrective action in policies and management, and in building-up the information needed for decision-making. It is a welcome opportunity to demonstrate the many past experiences, particularly for the inland fisheries sector usually confounded with the terrestrial realm.

Target 2 presents a number of opportunities for fisheries to further implement and to highlight actions already taken in fisheries Policy and management:

### **The UN Decade on Restoration**

The United Nations Decade on Ecosystem Restoration 2021-2030 is a rallying call for the protection and revival of ecosystems all around the world, for the benefit of people and nature. It aims to halt the degradation of ecosystems and restore them to achieve global goals on biodiversity conservation and ecosystems health, and consequently on people's livelihoods and adaptation to climate change. For the fishery sector, it represents a timely opportunity to increase focus on the concept; to realise the potential benefits for fisheries and, to illustrate the efforts already undertaken on habitats protection and stocks rebuilding.

For inland waters and fisheries, the UN Framework Convention for Climate Change (UNFCCC) that recognizes the importance of protecting, conserving, and restoring water and water-related ecosystems; the UN Water Action Agenda ; and the Water Conference Freshwater Challenge aimed at leveraging the support needed to bring 300,000 km of rivers and 350 million hectares of inland waters under restoration by 2030, provide, together with the GBF, an unprecedented opportunity for this sector.

### **Stock rebuilding and ecosystem restoration**

Fisheries aim to maintain resources as close as possible to (and possibly slightly below) their maximum level of productivity. Small departures from that target are usually easily corrected by management actions (combining input and output controls and incentives). Larger, chronic departures from the target require formal rebuilding plans, establishing a special fishing regime for the duration of the rebuilding process, often implementation controlled by law and enforcement. The rebuilding of target stocks to sustainable levels of abundance are opportunities to contribute to ecosystem restoration but cannot be equated with it. Increasing the broader protection of biodiversity and actively advocating against negative impacts of other sectors would also contribute to ecosystem-level restoration.

The above considerations apply to inland waters and fisheries as well as to coastal and marine ones. Terrestrial and inland water ecosystems are so intricately connected that it is necessary to consider their protection (and recovery) together. However, the specificities of freshwater habitats and species need to be fully accounted for integrated watershed management, remembering that protection of even large parts of the terrestrial system does not guarantee protection of the downstream freshwater ecosystems.

### **Habitat restoration**

Essential Fish Habitats (EFHs) include floodplains, wetlands, lagoons, mangroves, seagrass beds, coral and boulder reefs, kelp forests, algal beds, and other habitats that serve as nurseries, spawning grounds, or feeding areas for fish. By restoring these habitats, fisheries can benefit from improved fish abundance and productivity and increased resilience of fish populations to fishing and climate change. Target 2 on ecosystem restorations represents therefore an opportunity for fisheries long-term sustainability. In areas undergoing restoration, fishing often is significantly reduced or eliminated, for example in Vulnerable Marine Ecosystems (VMEs) in deep-sea ecosystems, and fisheries recommencing when the restoration target is reached must avoid repeating any damaging practices that contributed to the initial degradation.

### **Strengthening the application of the Ecosystem Approach to Fisheries (EAF)**

The Restoration Principles listed in Section 2d of the CBD guidance are very similar to those underpinning the EAF, and the effective implementation of Area-Based Management Tools, and they apply both in terrestrial and aquatic systems. Target 2 represents, therefore, an opportunity to strengthen EAF, by increasing the fisheries management focus on stock rebuilding (or rehabilitation) and habitat protection



and restoration, better recognizing the interdependence of species and habitats, and between them and the overall health of the ecosystem. In addition, in fisheries management, genetic diversity and sub-population structure are rarely identified and taken into account, resulting in the risk of eliminating the less resilient strains of target species. Restoring habitats may contribute to the conservation of fish genetic diversity and subpopulations, restoring connectivity within life-cycles, maintaining gene flows and the integrity of meta-populations, potentially increasing resilience to climate change and other stressors. Finally, the involvement and positive contribution of a fishing area in a broader ecosystem restoration could be a positive additional consideration in seeking eco-certification for the fishery.

### **Engagement of local communities**

Target 2 may involve engaging local communities, including fishing communities, in restoration efforts. Involving these communities in the planning and implementation of restoration projects can promote co-management approaches, enhance local stewardship of fisheries resources, and create economic opportunities aligned with sustainable fishing practices.

### **Additional support to decision-making**

Target 2 also justifies fisheries experts providing additional information for decision-making, often not included in standard stock-specific fisheries advice. The opportunities in policy and management listed above imply some related opportunities for the sector to improve the information it has at disposal to support decision-making. For example:

- a) Making and updating a national inventory of overexploited stocks requiring rebuilding; of the areas they occupy; and the ecosystems to which they belong.
- b) Developing formal plans for rebuilding stocks and protecting habitats as part of ecosystem rehabilitation or restoration (if conditions are met).
- c) Assessing/mapping the spatial footprint of fisheries and consider areas that might be set aside for habitat restoration with sufficiently augmented protection measures. This may require particular focus on pelagic fisheries.
- d) Considering in the process the trade-offs of the short-term costs and longer-term benefits of enhanced restoration compared to expected outcomes of business-as-usual.
- e) Coordinating the action of the Ministers of fisheries and environmental Ministries, when relevant, around restoration plans, related information systems, human and technological means, and financial sources.
- f) Checking the stakeholders' group used in fisheries management to see if they are broad enough to cover ecosystem issues like restoration.

### **Challenges**

In addition to the opportunities to make further progress on initiatives already considered good practice for fisheries, there will be some important challenges for fisheries to meet. The GBF targets were designed to be ambitious, and they are therefore challenging. Some key challenges ahead relate to 1) the adaptation of essentially terrestrial conservation concepts to marine ecosystems; 2) the need to demonstrate that well-managed sustainable fisheries do not result in ecosystem "degradation"; and 3) the need to identify the additional resources needed to effectively take the opportunities offered by Target 2 (together with related targets).

### **Adaptation of terrestrial concepts to the marine domains**

Restoration principles were developed mainly in forestry and wetlands i.e., on terrestrial environments. However, terrestrial and marine conditions are extremely different. The fishery sector must help clarify the differences and their implications for management, and specifically for restoration of fishery stocks

and habitats. Inland and coastal fisheries share many characteristics including human population density, importance of local communities and small-scale fisheries, positive and negative impacts of economic development, land-based degradation and contamination, and historical progressive domination on non-fishery sectors. These fisheries also share opportunities and problems of restoration and rehabilitation. Further from the coastal areas, in the deeper open ocean, the opacity, geographical extension, fluidity, connectivity, and tri-dimensional characteristics of the deep shelf, slope and beyond, over seamounts and abyssal plains, call for particular attention the dangers in extending terrestrial assumptions to the deep aquatic systems, and requires proactively adapting them to these different environments.

This challenge affects both conservation and fisheries management. The problem is mainly that restoration theories in the ocean need to account for the peculiarities of ocean ecosystems, as the uncritical “transposition” of terrestrial approaches may lead to failures. Rigid and static conservation boundaries are unlikely to work well. Corridors, for instance, will be more diffused, meandering, mobile and changing, and hence much less predictable than on land. The differences may be less perceptible or consequential for restoration in coastal and bottom habitats than in the pelagic domain, but evidence on this needs to be evaluated carefully before general conclusions are drawn.

### **Clarifying the difference between the impact of sustainable use and degradation**

In the opening narrative on this Target, it was noted that there may be many definitions of “degradation”, implying different levels of modification of ecosystem “integrity”. Overexploitation of target stocks, Significant Adverse Impacts (SAIs), and damage on essential or critical habitats, could be considered by some conservation constituencies as “ecosystems degradation”, calling for restoration. The very broad interpretation of “degradation” could lead to considering all major fishing areas as areas needing ecosystem restoration, negatively affecting the image of fisheries, and potentially affecting their societal license to fish, consequently reducing food security.

Even when operating at sustainable use levels, fisheries impact the ecosystem structure, affecting the biomass of target and non-target species and at least some habitat features. In well managed fisheries, particularly under the EAF, these impacts are usually reversible within an acceptable time frame. However, stringent and narrow definitions of “sustainable use” (different from the CBD Article 2 definition) could set unattainable standards for most fisheries, making present efforts to rebuild overfished stocks and essential habitats appear insufficient. Meeting such stringent expectations for “sustainable” would threaten sea-food production and, as a consequence, increase demand for terrestrial food production systems which are often more “destructive” for biodiversity than fisheries.

### **Disproportionate burden on fisheries**

Even in areas truly ecologically degraded by multiple ecosystem use (e.g., combining coastal development, contamination, land-based pollution, tourism, etc.) data about fisheries are often more abundant and of higher quality than those available from less well-monitored sectors. In addition, management of fisheries may be more institutionalized and have relatively lower political support than some other causes of degradation. As a consequence, may fisheries attract more attention, and be easier to target at for corrective action, resulting in fisheries bearing a disproportionate burden of measures to address the general degradation, even when fisheries may not be the primary cause, particularly in densely populated inland and coastal areas. This threat could increase more with the blue economy paradigm), promoting many sectors to increase their presence in the ocean.

### **Means of implementation**

As usual with all international policy initiatives, reaching the new objectives and targets requires additional implementation means to increase the information available for decision-making; and improve

governance and management processes. Needs are most pressing relative to the broader considerations needed regarding biodiversity conservation, beyond recovery of target species and protection of essential fish habitats. This challenge also is general and affects equally both fisheries and conservation. If anything, fishery management systems may often be in a more favourable situation as they are usually centrally supported, even though chronically underfunded. However, the needs and opportunities presented by many small-scale community-based systems receive token recognition if acknowledged at all, just as is the case for many remote conservation systems.

In many cases, the remoteness of small-communities and SSFs, their lack of financial and political power, and inequitable access to decision-making and appealing institutions, may lead to a disproportionate burden in the allocation of costs and benefits. This situation also suggests adding the "disproportionate burden" challenge explicitly for SSF, particularly when confronted with the interests of more powerful rural or urban constituencies with better capacity to oppose costly corrective policies.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

##### **Areas sustainably used by fisheries might be coined as “degraded areas” with overly prescriptive management implications**

Sustainable use of aquatic resources implies some level of ecosystem change as resources are affected by harvest, and there is a trade-off between degrees of ecosystem change and intensification of sustainable use. Stocks sustainably used or impacted by fisheries and the areas in which they occur should not be considered as “degraded” as long as the impacts of the use are readily reversible. This interpretation is in line with UNCLOS, which considers “sustainable use” means that the resources and their use are sustainable, and the use impact is reversible.

From this perspective, however, overfished stocks, driven below their safe biological limits, and hence subject to significant adverse impact (SAI), may be considered degraded. By extension, the areas they occupy might also be considered “degraded”, calling for restoration regimes. Similarly, fisheries using gears with significant contact with the bottom, like trawling and dredging, impact habitats. Essential Fish Habitats (EFHs) and Vulnerable Marine Ecosystems (VMEs) are usually intended to be protected from SAIs by impacting gears, but many of these areas are not effectively protected, and their restoration may be logically called for.

##### **The term restoration may be interpreted as excluding other terms and concepts commonly used in fisheries for similar concepts, like rebuilding and rehabilitation**

“Rebuilding” is usually the process of management (and its outcome) which leads to increase a depleted stock at least to the level at which it could produce its Maximum Sustainable Yield (MSY), as required in UNCLOS. It usually implies the use of a specific set of measures that may include gear and catch controls, and protected areas, combined in a legally controlled rebuilding regime. The term “rehabilitation” does not seem to be commonly used in marine fisheries management. In inland fisheries, however, rehabilitation was defined as the process of making an area productive again under conditions that correspond to societal needs. From that angle, fisheries may decide to restore areas they exclude from their footprint (eliminating the fishery stress in these areas) or rehabilitate areas for their sustainable use. Although restoration of degraded areas close to initial conditions might still be possible in some remote and lightly populated areas, rehabilitation might be the most likely strategy in densely populated ones.

The concept of ecosystem overfishing refers to a status in which ecosystem structure and functions have been degraded beyond acceptable levels. The level of “degradation” is a function of the fishing (and other) pressures. However, there is no global agreement on the degree of “degradation” that might be

acceptable. Were “acceptable levels” determined by likelihood that the ecosystem alterations were reversible, there would be some objective standard for “degradation”. However, to the extent that “acceptable” change in ecosystem structure and functions is a societal choice, there is no guidance on societal choice.

**Fisheries’ potential impact on connectivity has not been well researched, and lack of knowledge could be used to restrict fisheries as having potential to reduce connectivity, with weak or no evidence**

The impact might be small in the pelagic ecosystem as the movement of water masses (and planktonic propagules) is not affected by fishing. Such impact might be more important on the bottom where intense bottom impact and stock fragmentation might interfere with migratory patterns. Fisheries may affect “integrity” to some extent e.g., modifying the composition/structure of the food chain.

## **5. SYNTHESIS**

Fisheries has a long history of rebuilding overfished stocks and has learned many lessons from the successes and failures of those efforts. Those experiences and lessons preposition fisheries to contribute substantially Target 2. However, few of the terms used routinely in fisheries rebuilding map directly onto the language in the Target, presenting many opportunities for misunderstandings and disagreements about what actions are appropriate to fall within the target, and what outcomes are necessary to meet the intent of the Target. This is a particular concern because most fishery rebuilding strategies start at the species and population level and work outward, whereas Target 2 focuses that the ecosystem scale and works down towards plant and animal communities and species. Few if any genuine incompatibilities are seen between the initiatives of fishery jurisdictions for stock and ecosystem recovery and the initiatives envisioned under Target 2. However, the ecosystem scale challenges of rebuilding in aquatic systems that have had the abundances of a number of species reduced by fishing or habitat changes, are large. Substantial dialogue in the near future between fisheries experts and experts in terrestrial systems may help both in exchanging information on tools used by each perspective and building understanding and good will among the full community, who are all working towards similar outcomes in different types of systems.

## TARGET 3 – MARINE PROTECTED AREAS AND OECMS

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE AND ENABLE THAT BY 2030 AT LEAST 30 PER CENT OF TERRESTRIAL AND INLAND WATER, AND OF COASTAL AND MARINE AREAS, ESPECIALLY AREAS OF PARTICULAR IMPORTANCE FOR BIODIVERSITY AND ECOSYSTEM FUNCTIONS AND SERVICES, ARE EFFECTIVELY CONSERVED AND MANAGED THROUGH ECOLOGICALLY REPRESENTATIVE, WELL-CONNECTED AND EQUITABLY GOVERNED SYSTEMS OF PROTECTED AREAS AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES, RECOGNIZING INDIGENOUS AND TRADITIONAL TERRITORIES, WHERE APPLICABLE, AND INTEGRATED INTO WIDER LANDSCAPES, SEASCAPES AND THE OCEAN, WHILE ENSURING THAT ANY SUSTAINABLE USE, WHERE APPROPRIATE IN SUCH AREAS, IS FULLY CONSISTENT WITH CONSERVATION OUTCOMES, RECOGNIZING AND RESPECTING THE RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, INCLUDING OVER THEIR TRADITIONAL TERRITORIES.

The Target is explicitly and highly relevant for inland, coastal, and marine areas, and within them, for the recognition and promotion of area-based management tools, including protected areas (PAs) and other effective area-based conservation measures (OECMs).

The Target refers to ecosystem services (which includes food provision), to sustainable use, and to the rights of IPLCs, which includes their rights to traditional livelihoods and systems of use. In addition, the other effective area-based conservation measures (OECMs) are explicitly intended to include conservation areas established by economic sectors (cf. CDB Decision 14/8). The Target is therefore relevant for small-scale fisheries but also larger-scale ones as long as the areas in which they operate demonstrably comply with the OECM criteria.

### 2. ANALYSIS OF THE TARGET CONTENT

The [CBD Guidance](#) indicates that the Target is based on two premises: 1) Effectively managed and representative PAs and OECMs can contribute to safeguarding habitats and species' populations, and for delivering important ecosystem services and multiple benefits to people; and 2) PAs and OECMs encompass a large range of protection/use regimes from strict protection (no use) to sustainable use, as defined in the CBD Guidance. CBD Decision 14/8 encourages States to implement OECMs in economic sectors, including the fishery sector. It can be noted that the joint concern about "protected areas or areas where special measures need to be taken to conserve biodiversity" was already present in the Founding text of the CBD Convention (Art. 8a, 8b).

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **The 30 percent target**

The 30% figure is a global target applying to the whole Earth and all ecosystems. States are encouraged to strive to meet that target to the extent they can. The target may be seen as particularly challenging in densely populated areas, which are often the areas most in need of biodiversity conservation. However, every State may consider aiming at the level of coverage most appropriate and feasible for its local conditions. The quantitative target is also qualified by qualitative considerations regarding effectiveness (capacity to reach all its multidimensional objectives, cf. Point (f) below) and equity (in distribution of costs and benefits; see also Targets 12, 13).

#### **Particular importance to biodiversity and ecosystem services**

Another qualitative consideration is that the areas to be counted are particularly important for biodiversity and ecosystem services, and include a high diversity of species, threatened species, threatened biomes, and habitats important for the continued provision of ecosystem functions and services. It is probably impossible to find any ocean areas that is irrelevant for biodiversity conservation and not contributing to some ecosystem services. However, many areas particularly important have been already identified, as EBSAs, VMEs, Particularly sensitive Sea Areas (PSSAs), etc and other areas of importance to specific biodiversity components (e.g., birds, mammals, rays and sharks, etc.). Ecological representativeness and connectivity are elements justifying the “importance” of the areas.

### **Ecosystem functions and services**

Ecosystem functions and services have been well-defined in the [Millennium Ecosystem Assessment](#). Food provision is a major service used by fisheries which play a major and unique role for its delivery to people. Ecosystem functions are responsible for the production of biomass and diversity, and they condition the resources resilience to human-induced and threats. They are therefore also important for fisheries and their sustainability.

### **Effective governance and management**

Governance and management are central to the target. Beyond achieving the spatial coverage target of 30 % by 2030, the need to improve the areas’ effectiveness is stressed; Effectiveness is defined in CBD Guidance as achieving the expected long-term positive outcomes. Effectiveness usually requires active actors buy-in, equitable participation, recurrent monitoring, multi-disciplinary analyses, and sufficient resources (including capacity-building) to sustain such activities. Measuring effectiveness also requires empirical or model-based baselines or explicit targets regarding biodiversity and human dimensions (cf. also Targets 9, 10). Equitable governance refers to equity in the recognition of actors, the access to processes (e.g., from assessment to enforcement), and the distribution of costs and benefits of the action (CBD, 2018, and Targets 21 and 22).

### **Recognizing indigenous and traditional territories [...] and rights of indigenous peoples and local communities**

These two elements are present in two different places in the target but are very closely linked. Indigenous peoples and local communities often own, occupy, manage activities, and conserve biodiversity in their indigenous and traditional territories, with often significant long-term biodiversity outcomes. Formal recognition of these areas and rights, and the free, prior, and informed consent (FPIC) of the authorities concerned, when making decisions about these areas, have been shown to increase their stakeholders’ buy-in and facilitate conservation.

### **Fully consistent with conservation outcomes**

The CBD Guidance indicates that some types of protected areas and OECMs allow for limited types of non-industrial, traditional, cultural, activities, such as hunting, fishing, gathering and tourism. These activities should be sustainable and consistent with conservation objectives and expected outcomes. This explanation does not provide a lot more interpretational insight than the Target itself. In brief, it says that States and other legitimate authorities should ensure that activities allowed in the area should not impede the realisation of the expected outcomes, or in other words, that the social and economic objectives adopted do not conflict with the ecological objectives.

The “consistency” may be obtained within different balances between protection and sustainable use. On the one hand, total protection can only be consistent with no-use and that would be the consistency expected in strictly protected MPAs. On the other hand, partial protection, accepting some level of use with sustainable and reversible impacts, would be consistent with the social and economic objectives of

OECMs or of Type VI MPAs. As a consequence, “consistency” is achieved differently in different types of conservation areas. As long as the outcomes are consistent with the respective definitions and criteria.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

#### **Opportunities**

Effective implementation of Target 3 would benefit from effective implementation of also Target 1, 2, 9 and 10.

As was the case for Target 2 this Target is a first opportunity for the inland waters’ biodiversity and fisheries, usually confounded with the terrestrial realm, to be specifically considered in their own right. Many of the opportunities listed below for the fishery sector represent also challenges.

#### **Illustrate and strengthen the Ecosystem Approach to Fisheries (EAF)**

EAF has been adopted since 2001 in FAO but has been sluggish in its implementation. Target 3 represents an opportunity to showcase all the cases in which Area-based Management Tools (ABMTs) are already successfully used to help sustainability of fisheries. It offers an opportunity to boost EAF application through a more systematic use of Area-based Management Tools where appropriate, to complement the non-spatial tools already widely used for fisheries management and conservation. This is particularly relevant for RFMOs and States in which progress in EAF implementation has been slow. Strengthening EAF may be undertaken through the following activities:

- a) Inventory of conservation areas used in fisheries, by type, by sub-sector, by ecosystem, and types of surveillance systems. The inventory would refer to the type of governance and its degree of participation and equity.
- b) Identification of additional areas, where appropriate, to be put under conservation regimes to meet the target.
- c) New resources survey and programmes to assist the sector maintain or develop new, viable, and compatible activities out of the MPAs and OECMs, where necessary.
- d) Assessment of the potential effects of intensification of fishing outside of conservation areas, particularly on species-at-risk, due to fisheries displacement.
- e) Need to review, from an ecosystem perspective, the status of fisheries operating in “areas of importance for biodiversity and ecosystem functions and services” and enhance their broader sustainability where necessary.

#### **Improve recognition of current fishery tools and benchmarks**

The spatial and non-spatial tools currently used in fisheries conservation and management, as historical or modelled baselines, targets, indicators in the various bioecological and socioeconomic dimensions of monitoring, might be showcased as components of “best practices” for the newly adopted OECMs. Many of the indicators used in fisheries are not yet integrated in the indicators recognized by CBD Parties for the GBF, opening an opportunity for the sector to correct the oversight through active participation in the GBF process.

#### **Reinforce traditional management and tenure systems of IPLCs**

These systems have been in used sometimes for centuries and are differently recognized (or disregarded) by States. Target 3 gives a strong opportunity to identify and strengthen these systems, significantly improving participation of Indigenous People and other local communities to governance and management processes, including decision-making, aiming at more responsive and effective locally-driven management.

### **Better define what areas are already covered by what measures**

Numerous area-based management measures exist today, that may be considered for Target 3. However, their status and effectiveness are not always clear, and Target 3 provides an opportunity for the sector to clarify and strengthen where appropriate, its ABM management. For example, GFCM and the EU have banned trawling in areas below 1000 meters in the Mediterranean. This is a legally binding prohibition covering 70% of this sea area but poses many questions. How much protection is really offered by this measure? What other risks remain and what additional measures might be needed, above and below 1000 meters depth? What other complementary measures are in place, and how effective are they?

Both in EEZs and ABNJ, most fisheries can benefit from identifying fishery closures meeting OECM criteria or upgrading them to meet such criteria and count against the 30% objective.

### **Contributions to Target 3 in the pelagic ecosystem and in RFMOs**

The pelagic ecosystems are fluid, mobile, inter-connected, tri-dimensional, and not easily bounded. The simple application of the terrestrial static and bi-dimensional concepts is not satisfactory. However, tri-dimensional, and mobile alternatives raise a number of unresolved thorny technical and operational issues. Target 3 opens an opportunity for the sector to examine the issues for more appropriate ABMTs.

RFMOs are states-based organizations and as such have authority and mandate to establish and enforce fishery-ABMTs in the High Sea, including protected areas and OECMs. Some RFMOs have started looking at the issue but no decisions regarding OECMs have been made yet. The GBF is an opportunity for all RFMOs to seriously consider a greater use of ABMTs in their ecosystem approach to management.

### **Challenges**

Although fisheries have a long history of using spatial management tools in many management contexts, some aspects of Target 3 present challenges for at least some fisheries and some jurisdictions. Many of the challenges for the fishery sector in contributing to Target 3 are common to other targets like Targets 2, 5, 9, etc. In addition, if any of the threats from misinterpretation or aggressive over-interpretation of the Target listed in the Threats section were to come to pass, these would be substantial challenges to fisheries. There are several challenges that must be addressed in any case.

#### **The challenge of densely populated areas**

In densely populated areas, a 30% coverage of protected areas is a major challenge, with efforts to attain the percentage potentially threatening livelihoods and food security. In poorly managed areas, however, the opposite threat is that of fisheries collapse under overfishing. The challenge for the fishery sector is to 1) demonstrate the broad effectiveness of the closed areas that match OECM objectives; 2) to upgrade, where possible the closed areas that could match OECMs objectives with an affordable conservation effort; and 3) overall, to contribute to the process needed to balance protection and sustainable use in densely populated areas (cf. also Target 12).

#### **The relation and potential tension between SU and conservation**

This tension was already perceptible in CBD (1992; Art. 8, 10). An important challenge in Target 3 is to ensure that sustainable use (SU) by fisheries is consistent with conservation objectives or expected outcomes, in MPAs and OECMs, obviously, but also around them. The issue was touched on in Section 2f of this target. The terms “conservation” and “sustainable use” are well defined by the CBD. The requirement for consistency between conservation and use is already evident within these definitions. In effective management processes, the management plan would have considered the equitable balance and consistency between the conservation and sustainable use objectives and the measures applied could be adjusted by adaptive management. Consistency is a two-way property; 1) in a PA, use strategies and



objectives compromising the expected outcomes of conservation ought to be tightly limited or eliminated; 2) in an OECM with conservation as primary objective, the same actions could be justified; 3) in an OECM with sustainable use as primary objective, conservation rules that would result being inconsistent with the expected SU outcomes, could be either eliminated (losing the OECM label) or strengthened, reinforcing the conservation objectives. Ultimately that area may become a PA; and (4) conventional fishery closures with no expected outcome than conserving the targeted species and essential habitats, are not appropriate in Target 3, but can be considered under Targets 9 and/or 10 for their outcomes and not for their coverage.

### **The recognition of the OECM status**

How OECMs gain status and recognition in parts of the ocean with multiple uses will be complex. Although Decision 14/8 calls for all relevant sectors to establish or identify OECMs, it is hard to see how navigation, oil and gas, military, and renewable energy sectors fit with the “artisanal” context of the relevant part of that Decision. It is more logical to think that although highly-impacting sectoral activities might be found incompatible with OECM criteria on a case by case basis, and hence not be allowed within them, more generally OECM status should certainly be considered within the areas in which such activities operate, if they operate in ways that meet the criteria. It can also be expected that as OECMs identification will progress, the more likely compatible and non-compatible categories of activities will progressively emerge.

### **The stiff opposition of many IPLCs to have their community-managed areas referred to as PAs or OECMs**

This opposition, clearly manifested during the GBF negotiations, suggests that a third type of conservation areas might be later distinguished from other more centrally governed areas in Target 3. [The CBD Secretariat guidance](#) refers to these areas and their importance for Target 3 fulfilment but recognize that any reference to these areas in the Target must get the Free, Prior and Informed Consent (FPIC) of the IPLCs concerned. The perspective of being considered together with PAs and OECMs obviously may be seen as a threat to local governance, but it may also represent an opportunity for IPLCs to obtain further and stronger recognition of their existence and authority, through their role in international agendas. In any case, any reference to indigenous and traditional territories” in Target 3 would require a Decision of the CBD COP, and probably a process of identification of the areas meeting specific and relevant criteria.

### **The lack or scarcity of environmental and biodiversity data to set empirical baselines for monitoring and performance assessment**

Because of this information gap, generic ecosystem models may be used with caution to establish such baselines e.g., referring to virgin” systems or to their state at a given time in the past. The value of such baselines depends on the model quality (e.g., the accuracy of its ecological, social, and economic dimensions and their relationships) including the validity of the assumptions. Using questionable assumptions may lead to prescribe unreasonably restrictive benchmarks for conservation and sustainable use in fisheries.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Target 3 interpretation could be overly restrictive**

This could be the case if the Target were interpreted exclusively from the protection perspective rather than the broad conservation perspective including sustainable use. This would reduce the attention to the need to: 1) maintain some ecosystem services (e.g., food provision and security); 2) respect the rights of indigenous and traditional and local communities to maintain their traditional sustainable livelihoods while conserving biodiversity); and 3) ensure sustainable use (see Point (a) below). Other challenges relate to the need to use model-based benchmarks, and to avoid dangerous generalisations.

An additional possible overly restrictive interpretation of the Target is introduced -possibly involuntarily-- by the CBD Secretariat on-line guidance suggesting that only “non-industrial” activities might be used within protected areas and OECM. However, CBD Decision 14/8 never refers to sub-sectors and is silent on “industrial” activities of any kind, and sectors are asked to contribute OECMs after matching them with the criteria, on a case-by-case basis.

### **The past occurrence of overfished stocks in an ecosystem or fishing ground**

Such past occurrence might be used by fishery critics to argue against recognizing OECMs in that area even if they meet the CBD criteria; an argument that has already been used. Even strict MPAs are rarely set-up in pristine areas and the requirement, for a fishery OECM, is that it produces (or will soon produce) broad, positive biodiversity outcomes, beyond the target stocks maintenance, irrespective of past history.

### **The nature and types of areas possibly identified as OECMs**

It may wrongly be assumed that areas used for sustainable fisheries management may not be included in Target 3. Decision 14/8 in CBD (2018) is very clear in this regard, however, and calls explicitly on economic sectors to identify areas in which they protect biodiversity, and which demonstrably meet the OECM criteria. As a consequence, the fishery sector is entitled and indeed invited to consider its closed areas case by case against these criteria, and to enhance their biodiversity protection performance as much as compatible with their sustainable use.

### **Definition of “consistency”**

A challenge for fisheries is to ensure that aggressive definitions of “consistency” are not used to limit *de facto* the meaning of “sustainable fisheries” to subsistence, low impact, fisheries. This would exclude from the OECM category all other closed fishing areas, even if sustainably used and producing long-term biodiversity outcomes. This interpretation is clearly confusing PAs and OECMs requirements, contradicting CBD Decision 14/8 on OECMs. The Target adopted by CBD Parties does not refer to any type of sector or sub-sector. However, the [guidance](#) provided on the GBF website might be interpreted as meaning that industrial fishing or even commercial small-scale fisheries are not allowed in PAs and OECMs accounted for in Target 3. While this prohibition may be logical in strictly protected MPAs, it is not prescribed in Decision 14/8 for OECMs that recognizes the dual purpose of OECMs in both conservation and sustainable use and requires a case-by-case identification against OECM criteria. In any case, it could be considered that if, within certain types of potential OECMs, some types of industrial fishing might be considered as incompatible with the OECM criteria, there are no reasons to not establish *bona fide* OECMs inside industrial fishing grounds, protecting the designated area from inconsistent impacts and improving biodiversity conservation in the fishing ground.

“Consistency” can be understood from two perspectives. First, even in cases where OECM criteria have been met, inclusion in Target 3 may be questioned by conservationists due to concerns regarding the ineffectiveness of governance and management in meeting the biodiversity conservation objectives. Second. Identified OECMs might also be questioned by the sector itself if not efficient in meeting these objectives, at the lower possible cost. The threat is that the expression “consistent with conservation” is taken as meaning that conservation objectives are always overriding, which is clearly required for MPAs but not for OECMs.

## **5. SYNTHESIS**

The relationship between MPAs and OECMs has been present since the expression “other effective [area-based] conservation measures” was negotiated in Nagoya in 2010. Target 3 is welcomed because it acknowledges the contribution that closed areas used by fisheries can make to effective conservation. In fact, 100% of fished areas would be sustainably used if Targets 3 and 10 were achieved. However, as long

as unsustainable fisheries are widespread, the debate on how to improve them will continue. However, tests have shown the OECM criteria are both robust to incomplete information, and effective in identifying areas that address particular conservation concerns relative to background ecosystem status. Well-managed fishery OECMs have, therefore, the potential to play a significant role in delivering all three pillars of the CBD Convention, namely: preservation of biological diversity; sustainable use of its components; and fair and equitable sharing of the benefits from the use of genetic resources.

## TARGET 4 – PROTECTION AND RECOVERY OF THREATENED SPECIES

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE URGENT MANAGEMENT ACTIONS, TO HALT HUMAN INDUCED EXTINCTION OF KNOWN THREATENED SPECIES AND FOR THE RECOVERY AND CONSERVATION OF SPECIES, IN PARTICULAR THREATENED SPECIES, TO SIGNIFICANTLY REDUCE EXTINCTION RISK, AS WELL AS TO MAINTAIN AND RESTORE THE GENETIC DIVERSITY WITHIN AND BETWEEN POPULATIONS OF NATIVE, WILD AND DOMESTICATED SPECIES TO MAINTAIN THEIR ADAPTIVE POTENTIAL, INCLUDING THROUGH IN SITU AND EX SITU CONSERVATION AND SUSTAINABLE MANAGEMENT PRACTICES, AND EFFECTIVELY MANAGE HUMAN-WILDLIFE INTERACTIONS TO MINIMIZE HUMAN-WILDLIFE CONFLICT FOR COEXISTENCE.

This Target is highly applicable to marine, coastal and freshwater systems. Risk of extinction of species is a concern in all those types of systems, and assessments against criteria for risk of extinction are being conducted for whole groups of aquatic species, such as the IUCN-sponsored evaluation of all elasmobranchs against the [IUCN Red List criteria](#).

Although only in highly exceptional cases, such as whaling in past centuries, has direct exploitation of fish stocks resulted in extinction (or near extinction) of targeted species, several phrases in the Target may be open to a range of interpretations that affect the scope of application of the Target in fisheries on all scales. These include “halt human induced extinction of known threatened species”, “actions for [...] recovery and conservation of [threatened] species”, “significantly reduce extinction risk”, “maintain and restore the genetic diversity [...] to maintain their adaptive potential” and “manage human-wildlife interactions to minimize human-wildlife conflict for coexistence{.

Essentially all of these phrases, and the Target as a whole, are applied in many red-listing reports on aquatic species assessed as endangered or threatened, despite the lack of a single common interpretation for them. In this background of lack of consensus on many of the key phrases, often fisheries are listed as one of the major threats to the species, and one more readily amenable to control than many of the other threats. This is the case not just for species targeted by fisheries, but bycatches in fisheries and entanglement in gear are also listed as major threats to many red-listed seabirds, marine mammals, and other aquatic fish and invertebrates.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Halt human induced extinction of known threatened species**

The straightforward phrasing does release managers from trying to counter natural ecosystem threats to species survival. However, with human activities impacting many ecosystem processes in aquatic as well as terrestrial systems, partitioning natural and human-induced pressures on declining species is rarely straightforward.

#### **Recovery and conservation of [threatened] species**

Interpretation of the intent this phrase can be straightforward as well. However, diverse interpretations of how much improvement in stock status constitutes “recovery”, and disputes about the role of sustainable use in “conservation” (see Target 9), provide ample scope for difficulties and disagreements in application.

### **Significantly reduce extinction risk**

As phrased, this outcome should be the direct consequence of the phrases presented immediately above. However, with overall net extinction risk difficult to measure in aquatic systems, and a regularly increasing number aquatic species being evaluated against risk of extinction criteria, demonstrating the Target is being met will be challenging.

### **Maintain and restore the genetic diversity [...] to maintain their adaptive potential**

Genetic diversity is poorly quantified for almost all marine and most freshwater species. However, fisheries, particularly intense and selective fisheries, have been documented to select for several life history features, such as smaller size at age and earlier maturation age, *de facto* demonstrating that fisheries can reduce genetic diversity and affect adaptive potential.

### **Human-wildlife interactions to minimize human-wildlife conflict for coexistence**

This has been largely a terrestrial concern, when people undertake activities that increase the likelihood of negative interactions between wildlife and people, such as keeping garbage in ways that attract bears or increase predator populations to sizes that create risks for cattle or people. It has rarely been an issue in aquatic systems, but certainly is possible.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Information collection and research**

Target 4 provides an opportunity for fisheries jurisdictions to obtain increased resources for monitoring of fishery catches. Full observer coverage and catch reporting has always been desirable to achieve fishery goals. It can increase compliance and improve evidence of misreporting. When observer and harvesters record of catches of non-target species, the information is valuable in multispecies management and the ecosystem approach to fisheries. The calls to halt extinctions and reduce extinction risk create a much more urgent need for full and accurate recording of *all* catches, strengthening the rationale for budgetary allocations to catch monitoring that fisheries always wanted for their own purposes.

In a similar vein, fisheries jurisdictions and industry participants have several reasons to want better information on the genetic diversity of fish and aquatic invertebrate populations, *inter alia* for better delineation of stock boundaries for management, and to understand the adaptive potential of stocks. Requests for research support to study genetic diversity of aquatic populations, particularly but not exclusively of targeted species produce evidence of progress on this Target and improve knowledge of these factors relevant to fisheries management. Novel management concepts, such as balanced harvesting, can also benefit from this work through showing that, for whatever fishing mortality rate is adopted for a target population, impact on genetic diversity is likely to be less than that from any other harvesting strategy.

In terms of potential research themes, there have also been challenges to the robustness of some criteria used routinely in red-listing, particularly the decline criterion. Additional research projects testing the robustness of the decline criterion and other red-listing criteria experimentally and in simulations, for life history parameters more common in aquatic species than in terrestrial macrofauna, would reduce potential for listing false alarms, and also improve fisheries management.

Fisheries experts are often not members of the bodies conducting the assessments of risk of extinction of marine or freshwater species, or developing the recovery plans for listed aquatic species. This Target creates an incentive for greater engagement of fisheries experts on those bodies, and not just academic experts in fish biology and population dynamics.

## **New management approaches or policies**

Fisheries management authorities have included stock structure in management for all of modern fisheries management, and reduction in bycatches and incidental mortality of fishing gears have been goals of fisheries management for decades. This Target may trigger improvements in the measures used to pursue those aspects of fisheries management, by stimulating improvements in catch monitoring and population modelling.

This Target may also make it feasible to leverage additional funding to support development and use of gears that have lower rates of bycatch or likelihoods of entanglement of other megafauna species. It can also empower fishery managers to assess greater penalties for violation of bycatch or entanglement limitations, improving effectiveness of existing policies, and strengthening those policies when provisions are weak.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **The by-catch issue**

It is rare for fisheries to be able to totally avoid some bycatch or incidental mortality of non-target species. Fishery critics could lobby for extremely punitive penalties for harm or death of even small numbers of a threatened or endangered species, and become a significant burden or deterrent to fisheries that are actually well managed.

### **Asymmetry in sector's information**

In many assessments of species at risk, a number of factors may be identified as threats. Fisheries are often disadvantaged in such assessments when effective catch monitoring provides much more information about actual impact of fishing on the threatened or endangered species than is available in impacts of other pressures that might actually be much greater threats to the listed species.

### **Recovery plans**

Fisheries may face additional disadvantages when recovery plans are developed. Even when factors like habitat degradation or climate change are much greater threats to species at risk, fisheries may be more readily managed than these other causes of the species' decline, and be forced to bear a disproportionate burden in reducing impacts on a listed species.

### **Freshwater fisheries**

Freshwater fisheries may find Target 4 particularly problematic, when there are species listed as at risk because of endemic and very limited distributions. Even when locally abundant, such species commonly receive a high level of protection within their limited area of occurrence, because rebuilding potential is inherently very limited as well. This could mean bycatch restrictions are very stringent on any fisheries in the lake or watershed. If the listed species is common in the body of water and the risk of extinction arises from the very limited range of the species, local communities dependent on fish catches that include the listed species may be prevented from harvesting a food supply important to their well-being.

### **Dynamics of the listing process**

Over the past couple of decades, dynamics between CITES and fisheries jurisdictions including FAO often have been difficult. A basis for cooperation has been developed (e.g. [here](#)) but such agreements are often vulnerable to come apart over details of implementation. Similar tensions have been present in some national risk of extinction listing bodies, and the FAO-CITES cooperation agreement may be a model for application more widely.

### **Cases requiring special attention**

Small scale fisheries may be affected by this Target when the fisheries are in geographically restricted environments, such as lakes or small watersheds, or in localized marine features such as small reefs or mangroves, and when a species at risk designation is based on restricted distribution in the area fished. Even with the listed species has a wider distribution, the difficulties in comprehensive monitoring of small-scale fisheries may make it difficult to present evidence that it is not impacting a listed species detrimentally.

Considerations regarding Biodiversity Beyond National Jurisdiction (BBNJ) do not increase or alleviate the general considerations above, beyond the generic challenges of effective monitoring of distant-water fisheries.

Climate change is particularly relevant to fisheries accommodating Target 4. Climate change poses an additional threat to marine populations that is much harder to document than impacts of fisheries, resulting in fisheries being used as scapegoats for declines which may not be due to fishing. In addition, many reference points for fisheries have been estimated from data three or more decades in the past, and climate change may have reduced the historical productivity of those populations. This may not play a major role in establishing the risk of extinction of a species, but can result in setting unachievable targets in recovery plans aiming at historical reference values. The unrealistic rebuilding targets, in turn, may lead to lasting restrictions on fishery harvests that could be fully sustainable on the now smaller populations, and the fisheries themselves being blamed for the lack of full recovery of the fish stocks. In addition, climate change is resulting in range changes to many species which may result in red-listed species beginning to appear in areas where fisheries have not previously encountered them, and do not have the gears or awareness needed to avoid catching them, and suffer penalties for activities that had previously been fully acceptable.

## **5. SYNTHESIS**

Species at risk considerations are familiar to fisheries, and both challenges and ways to address them are well known. Target 4 presents few new considerations but adds emphasis to the need to ensure all feasible measures to minimize fishery impacts on listed species are implemented effectively. It also adds greater urgency to ensure fishery experts and fishery authorities engage in all aspects of assessing aquatic species against the criteria for risk of extinction, and recovery teams for listed aquatic species. It could also be used strategically by entrenched critics of fisheries to present sustainable fisheries in a negative light, for impacts on listed species that neither increase the risk to the species nor impede recovery.

## TARGET 5 – SUSTAINABLE HARVESTING AND TRADE

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE THAT THE USE, HARVESTING AND TRADE OF WILD SPECIES IS SUSTAINABLE, SAFE AND LEGAL, PREVENTING OVEREXPLOITATION, MINIMIZING IMPACTS ON NON-TARGET SPECIES AND ECOSYSTEMS, AND REDUCING THE RISK OF PATHOGEN SPILL-OVER, APPLYING THE ECOSYSTEM APPROACH, WHILE RESPECTING AND PROTECTING CUSTOMARY SUSTAINABLE USE BY INDIGENOUS PEOPLES AND LOCAL COMMUNITIES.

Target 5 is the closest Target in the Global Biodiversity Framework (GBF) to Target 6 in the Aichi Biodiversity Targets, which was commonly referred to as the “Fisheries Target”. In the lead-up to the GBF, the CBD Parties decided the GBF would not have any sector-specific targets. Instead, Target 5 would lay out the same sustainability provisions and standards for all direct and extractive uses of biodiversity. Nevertheless, it used the text in Aichi Target 6 as the source of several of the key phrases in GBF Target 5, with small modifications only to increase their scope from just aquatic species to all biodiversity components in direct use. These common phrases include:

- a) use, harvesting and trade of wild species is sustainable, safe, and legal,
- b) preventing overexploitation
- c) applying the ecosystem approach

One provision of Target 5 substantially expands the standards of a similar provision of Aichi Target 6:

- a) minimizing impacts on non-target species and ecosystems

Two Provisions do not have direct parallels in Aichi Target 6:

- a) respecting and protecting customary sustainable use by indigenous peoples and local communities
- b) reducing the risk of pathogen spill-over,

As the GBF Target 5 is intended to apply to all uses of wild species, all components of it should be relevant to fisheries. Where common phrases are present between the GBF Target 5 and Aichi Target 6, it can be taken as reinforcement that the outcomes intended by Aichi Target 6 remain similar in the GBF. Many of the provisions in Aichi Target 6 were identified in its [CBD Implementation Plan](#) such as “*building upon existing initiatives such as the Code of Conduct for Responsible Fishing*” and “*Actions taken to reach this target would help to ensure implementation [...] of the United Nations Convention on the Law of the Sea and [the 1995 Agreement on] Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.*” Fisheries has already been on this course for several decades. That does not mean there is no potential for surprises as the GBF is implemented, and various perspectives begin to evaluate fisheries against this Target.

Aside from its similarities and differences from Aichi Target 6, GBF Target 5 has one overarching feature that makes it stand out from much other recent work on sustainability. The GBF separates the treatment of “sustainability” as it contributes to (or unsustainable practices reduce) the well-being of biodiversity and Nature (Target 5) from “sustainability” as it contributes to the well-being of communities and Humanity (Target 9). This independent consideration of the biodiversity and human well-being aspects of sustainability is inconsistent with the longstanding, if oversimplified, conceptualization of “sustainability” as a balanced trade-off between negatively impacting the species being used by an amount that is not



seriously disruptive, to increase the well-being and wealth created by those making the uses of biodiversity.

In more current conceptualizations, as reviewed in the [IPBES Sustainable Use Assessment \(SUA\)](#), sustainability is acknowledged to actually have always been a multi-dimensional concept taking into consideration the impact of uses on the species being used, but also impacts on other ecosystem components and impacts on physical habitats; and the benefits of wealth / revenue generated through use, also encompasses the amount and quality of employment created, the well-being of resource-dependent peoples and communities, and the equity in both access to uses and distribution of the costs and benefits arising from the uses (IPBES SUA Chapter 2). These seven dimensions are interconnected in ways that make it impossible to address any one of them without potentially altering status on any or all of the others. Consequently, the notion of optimal trade-offs between a single bio-ecological dimension and a single human dimension of sustainability is no longer viable but remains widespread in practice. It is replaced with the need to find management strategies and options that do not perform poorly on *any* of those seven dimensions and allow inclusive and equitable governance processes to decide where, among the dimensions, improvements in outcomes are most necessary (IPBES SUA).

Target 5 is complex enough that it has phrases that together may capture all the environmental dimensions of sustainability, and Target 9 is complex enough that it may capture the human dimensions. Nevertheless, by separating them into different Targets, the likelihood that each set will have separate planning, separate monitoring, and separate evaluation is sufficiently high that coherence of preferred strategies and measures may be elusive or missing altogether. Failure to explicitly acknowledge the multidimensionality of sustainability, and address the inter-connectedness of *all* dimensions, may undermine success of the GBF as a whole.

## **2. ANALYSIS OF THE TARGET CONTENT**

All phrases under this Target are relevant for fisheries. The most relevant ones follow.

### **Use, harvesting and trade of wild species is sustainable, safe, and legal**

Note that this phrasing specifies “wild species”. One of the points that will need to be resolved during implementation is how this will be applied to species that do occur in the wild, but also have been taken into aquaculture facilities and are grown under controlled conditions, usually with at least feed and water circulation being augmented by the facility operators. It would unquestionably apply in full to capture fisheries harvesting fish from the wild populations. It is less clear which parts of the Target, if any, would apply to aquaculture activities and products.

The addition of “trade” in the opening part of the Target does expand the application of the Target compared to the Aichi Target 6, to maintaining these standards all along the product value chain. That is an important expansion of the scope of the topic, but will not be a new demand on most commercial fisheries, where chain of custody and provisions to control transfer of fish or fish products among vessels has been an important part of fisheries agreements for some time, and captured recently in the [FAO Agreement on Port-States measures](#).

The addition of “safe” is also new compared to Aichi Target 6 but is also not new to fisheries. Workplace safety in fisheries has been addressed in many fisheries standards and guidance documents such as the [FAO Code of Conduct for Responsible Fishing](#) (Article 6, § 6.17) and [FAO Guidance on safety in fishing operations](#).

The word “legal” just reinforces the long-standing concerns about IUU fishing.

### **Preventing over-exploitation**

There is nothing new in this phrase. Even before UNCLOS was negotiated and provided policy and management more effective foundations for action, the prevention of overfishing had been a major concern of fisheries jurisdictions on scales from global to local.

### **Minimizing impacts on non-target species and ecosystems**

This phrasing differs from wording in Aichi Target 6 in subtle but significant ways. The comparable language in Aichi Target 6 was “fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems”. The key terms of “no significant adverse impacts” and “vulnerable marine ecosystems” both came directly from the carefully negotiated wording of UN Resolution 61/105, which was already binding on all Parties to UNCLOS and all RFMOs.

This GBF phrasing is definitely broader in scope than Aichi Target 6 by applying to *all* ecosystems, and *all* non-target species, not just species that are threatened, and ecosystems meeting the criteria to be VMEs. It also changes the scope of the Target in calling for impacts to be minimized, and not just reduced to a level where they do not cause “serious adverse impacts”.

### **Reducing the risk of pathogen spill-over**

This is not a major concern in capture fisheries for wild species, although there is some risk of transfer of pathogens in the biofouling communities that can form on fishing vessels and gears. If aquaculture production is brought into scope for this Target, pathogen transfer is a well-established concern. It is not necessarily easy to address in many types of aquaculture but it is well recognized as a concern in aquaculture operations.

### **Applying the ecosystem approach**

This, again, will not be new to fisheries, and clear interpretations and guidance on implementation has been [available from FAO](#) for more than twenty years. Implementation is an ongoing activity in all fisheries, with scope for further actions everywhere, and what comprises an “ecosystem approach” continually evolving (see [here](#)).

### **Respecting and protecting customary sustainable use by Indigenous Peoples and Local Communities**

This is a new addition to GBF Target 5 compared to Aichi Target 6. It reflects the growth in awareness of the importance of small-scale livelihoods and community dependence on livelihoods and food from fishing. Similar considerations are explicit in eight of the 23 GBF Targets, whereas in the Aichi Targets as a whole, the special status of IPLC is at best inferentially acknowledged in very general language of Aichi Targets 17, 18 and a few others very indirectly. However, with 2021 designated as the United Nations International Year of Small-scale Fisheries, this is a well-recognized aspect of fisheries management.

### **Recovery plans and measures are in place for all depleted species**

It is worthwhile to note that the provision of Aichi Target 6 that “recovery plans and measures are in place for all depleted species” is missing from GBF Target 5. However, the GBF does have generic references in Target 10 for “conserving and restoring biodiversity” and in Target 11 to “Restore, maintain and enhance nature’s contributions to people”. Both of those Targets can only be achieved through rebuilding depleted fish stocks. However, in GBF Target 5 there is not an explicit call for rebuilding plans by fisheries management authorities. See the sections on Targets 10 and 11 for further information.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

#### **Continuity of implementation**

The similarities between Target 5 of the GBF and Aichi Target 6 should ease the challenges in implementing Target 5, simply through continuing to call for eliminating overfishing, fighting IUU fishing, and advancing the ecosystem approach to fishing, all of which have been goals of fisheries management for decades. In fisheries of all scales and countries of all income levels, further progress is still needed to fully achieve these goals. However, the measures and actions needed for progress are well known. Many have been tested, adapted to accommodate different ecological and social contexts, and factors that synergize or impede progress are known. Hence the burden of making major changes in policy direction for fisheries should be low in countries that have been working to improve fisheries sustainability since UNCLOS and the UN Fish Stocks Agreement set the basic standards and requirements.

#### **Strengthening efforts for sustainable large-scale fisheries**

Unfortunately, unsustainable practices in fisheries persist. In many cases a factor is inadequate resourcing of infrastructure for fisheries management, leading to either or both operational weaknesses in surveillance and enforcement, and/or weaknesses in biological monitoring and in stock and ecosystem assessments. Fisheries agencies in all levels of government can use Target 5 as justifications for increased budgetary and personal resources, to improve all these operational practices necessary for regulatory agencies to be effective. It also empowers those agencies to strengthen their measures intended to reduce and where feasible eliminate ecosystem impacts of fisheries. This can include improving the models and other tools used to set conservation benchmarks, such as Targets and Limits for biomass and fishing mortality, adopting Harvest Control Rules to imbed those benchmarks in fisheries decision-making, and expanding those benchmarks to key ecosystem components impacted by fisheries.

#### **Strengthening efforts for sustainable small-scale fisheries**

This opportunity to strengthen existing efforts at improving sustainability of fisheries includes small-scale fisheries, where community-scale management is central to successful operations. Documentation that communities can manage their own fisheries effectively is extensive, but still may not be recognized by both institutions involved in top-down management and by critics of fisheries, because small-scale fisheries do not appear to have strong government regulations of all aspects of their operations. The explicit acknowledgement of “respecting and protecting customary sustainable use by indigenous peoples and local communities” paired with “sustainable” and “legal” goals for fisheries shifts the burden on placed on small-scale fisheries. Rather than the fisheries and communities struggling to preserve their existence and ability to maintain catches, national and regional authorities become accountable for the viability and sustainability of small-scale fisheries, as well as being directed to focus financial and logistic resources on supporting these fisheries and monetizing their outcomes in national accounting of fisheries performance overall.

The Target also strengthens the need for assessment methods and sustainably metrics for data-poor fisheries. Creativity in addressing these needs, and taking fully into account the knowledge of Indigenous People and Local Communities, may scale up to all scales of fisheries, both improving and simplifying the assessment, evaluation, and management of all fisheries.

#### **Special considerations for Inland Fisheries**

Although the language of Target 5 is inclusive of all fisheries, proposed indicators are focused exclusively on marine fisheries. Inland fisheries are frequently absent from global policy for a number of reasons, including the lack of a globally applicable method for monitoring their status. The Food and Agriculture Organization of the United Nations and the United States Geological Survey (USGS) have [developed](#)

[indicators](#) for assessing threats to inland fisheries that could be complementary to the proposed indicator. These inland fisheries need to be considered in the implementation of Target 5, and the types of approaches reviewed in the FAO/USGS work should be part of planning for implementation.

### **Including the value chain in improving fisheries sustainability**

One of the major differences between Aichi Target 6 and the GBF Target 5 is the explicit inclusion of consideration of trade in sustainability. This is not a new concept for fisheries, but often has had difficulty getting attention as a tool for advancing environmental sustainability. Rather, “trade” has often been viewed by governments as an economic process that Economic Ministries address for growth and compliance with economic regulations and standards, and not a primary consideration of Fisheries Ministries. Eco-certification is well established in fisheries, through bodies such as the [Marine Stewardship Council](#) and [Seafood Watch](#). However, these are private sector market-oriented tools and governments have often kept a distance from using them as tools in promoting sustainability. GBF Target 5 presents an opportunity for Fisheries Ministries and the industry to proactively use trade as a tool for promoting sustainability, more widely using tools to make “sustainability” a positive incentive in trade in scales from local to global. Accompanying these trade-oriented tools also justifies improvements in chain of custody documentation for fish and fish products. This not just allows consumers to have more confidence that fish are sustainable and safe to eat, but improves data and information on fish catches and production, making detection of illegally caught fish more likely and benefits both assessments and management decision-making.

### **Communicating current progress in making fisheries more sustainable**

A fourth but possibly most important opportunity presented by Target 5 is the ability to made more effective interventions in dialogue about sustainability of fisheries, instead of being on the defensive in many such dialogues, where fisheries critics attack the track record of fisheries as being overall harmful to biodiversity, As noted above, most of the major actions and outcomes called for in Target 5 have been part of standard (not even “best”) practices in fisheries for decades. Regular [SOFIA reports](#) and review papers have documented the progress that fisheries have made towards sustainable outcomes. However, these reviews have been challenged by some fisheries critics as insufficient or even unreliable, leading of course to counterchallenges, taking experts’ time and resources without resolving differences in viewpoints. In Target 5, the benchmarks that will be established early in its implementation will provide objective standards and benchmarks set by the CBD and its linked processes. By demonstrating the status of fisheries consistent with those standards and benchmarks, fisheries can showcase how large a proportion of fisheries are sustainable at present, and the progress being made increasing that proportion of sustainable fisheries.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Many of the potential threats to fisheries from misguided or intentionally hostile-oriented efforts at implementing Target 5 in fisheries are simply negatively oriented application of the same provisions that present opportunities for fisheries.

### **Promotion of more stringent benchmarks**

In fisheries agencies with adequate resources and good science foundations, the sustainability benchmarks they use are generally soundly evidence-based and tested with simulations and sometimes even experimentally. However, aggressive biodiversity advocates still challenge those benchmarks, and the concepts underlying them, and then promote much more stringent ones as necessary for conservation and sustainable use of biodiversity. Fisheries agencies and the fisheries expert community needs to strive

to ensure they participate fully in all meetings and technical workshops where sustainability benchmarks are being set for any ecosystem properties likely to be affected by fisheries, rather than just meetings setting benchmarks for the target species being harvested.

### **Unqualified scope of Target 5 terms**

Continuing that set of concerns, Target 5 does not qualify the scope of some of the terms used. For example, when it says fisheries should be “safe”, it does not specify the intent is. Does it mean “safe” for the stocks harvested; “safe” for the fishers doing the fishing; “safe” for all ecosystem components; “safe” for the consumers of the fish; or yet other aspects of “safe”. Extremely protectionist interpretations of the scope of that and other terms, such as “minimizing” and “reducing” can make Target 5 into a major challenge to fisheries, by setting unachievable standards.

### **Overly restrictive requirements**

The concern about extremely restrictive interpretations of terms in Target 5 is particularly relevant for “preventing overexploitation” and “minimizing impacts”.

If overexploitation is to be completely prevented, then the presence of any degree of IUU fishing can be used to discredit the effectiveness of fisheries management more broadly and demands to shift control of fisheries to other bodies with less experience and knowledge of fisheries. Similarly in many areas, fisheries, particularly small-scale fisheries, may operate over large geographic areas, and present some risk of less than full control and enforcement of management measures. Again, even low rates of weak management can be used by critics to claim overexploitation is still occurring and argue that other tools or other policies not under the control of fisheries managers are needed for Target 5 to be met.

An extremely rigid interpretation of “minimizing impacts” may become even more problematic for fisheries, by making the perfect the enemy of the good. Fisheries routinely consider “minimizing” to be a relative concept taking into account both conservation benchmarks of the biodiversity features and the socio-economic consequences of reductions. However, the term can be interpreted in a much more absolute sense, as the fullest elimination possible of impacts on biodiversity features, an option often incompatible with sustainable use. Moreover, the list of *possible* ecosystem impacts can grow much faster than the information needed to evaluate their magnitude and extent, leaving fisheries constantly on the defensive as new possible impacts are raised in the literature, and fisheries lacks the information to demonstrate they are not causing harm in the context of the newly raised impact.

Both of those concerns - with overly rigid interpretations of preventing overfishing and minimizing ecosystem impacts - may be encountered often by fisheries and fisheries ministries. Fisheries have been able to accommodate standards such as avoiding “significant adverse impacts” on “vulnerable marine ecosystems” under UNGA Resolution 61/105. Target 6 does set higher standards, as management has to ensure impacts do not just have to avoid reaching levels that are serious and adverse, but that they are *minimized* (i.e., reduced as much as possible), and not just in vulnerable marine ecosystems, but *all* ecosystems. Fisheries have a long history of setting its management benchmarks within fisheries jurisdictions informed by fisheries experts. Now it is important that fisheries agencies and fisheries experts engage in all the biodiversity meetings which also will be having roles in implementing the GBF. Credibility and public confidence in fisheries will not depend solely on fisheries meeting their own benchmarks and delivering their own outcomes. Under the GBF, fisheries may see a much wider range of governance processes, some formal and many less formal, who consider that they have a legitimate and important role in choosing metrics and setting benchmarks for sustainability of biodiversity in fisheries. These efforts outside fisheries jurisdictions may well affect fisheries management benchmarks. Fisheries need to establish meaningful roles in these processes, to be confident that the outcomes will be reasonable and feasible for well-managed and well-conducted fisheries.

## **Impact of a changing world**

A separate and broad concern is that some aspects of Target 5 simply might present real difficulties in a changing world. For fisheries there is substantial evidence that climate change is affecting productivity of many stocks; some for the better but many showing lower productivity. This is already forcing fisheries to reconsider sustainability benchmarks based on data from even a few decades in the past. As climate change – and other drivers – alter natural ecosystems, sustainability benchmarks for uses will inevitably be altered as well. Recognition of this challenge is increasing in fisheries agencies, and across the expert community. However, even basic responses such as updating reference points to changing conditions is technically complex, often lagging well behind the need for ecologically meaningful benchmarks. Moreover, again critics of fisheries have argued that these efforts might be just reflections of a “shifting baseline” syndrome, accusing fisheries of lowering conservation benchmarks (voluntarily or not) in cases where these have been hard to meet, in order to continue unsustainable harvesting. Fisheries needs to be much more proactive in keeping its sustainable benchmarks and control rules well matched to changing environmental background conditions and demonstrating the evidence basis for any updating of strategies and tools in fully transparent ways.

## **Ecological versus human dimensions**

The final potential challenges posed to fisheries by Target 5 may arise from the separation of the bio-ecological and the human dimensions of sustainability. As noted in the introduction to this Target, this separation is unworkable in practice and failure to address the inter-connectedness of all dimensions may undermine success of the GBF as a whole. This will be explored more fully in the analysis of Target 9, as the provisions of Target 9 regarding the human dimensions of sustainability present more opportunities to illustrate the problems that can arise when aspects of sustainability are treated piecemeal.

## **5. SYNTHESIS**

Overall, few of the components of Target 5 are new to fisheries and, over several decades, fisheries have developed many strategies and tools to increase the environmental sustainability of fisheries. Currently fisheries can provide case histories of success on essentially every aspect of Target 5, and critics of fisheries can provide case histories of shortcomings on every one of them. Both of those patterns can be expected to continue for the foreseeable future, with less and less “low-hanging fruit” for fisheries jurisdictions to show new successes without substantial effort to improve information flows and evidence, improved uptake and effectiveness of management strategies and measures, and greater buy-in from harvesters, processors, and marketers.

## TARGET 6 – ALIEN INVASIVE SPECIES

### 1. BRIEF INTRODUCTION TO THE TARGET

ELIMINATE, MINIMIZE, REDUCE AND OR MITIGATE THE IMPACTS OF INVASIVE ALIEN SPECIES ON BIODIVERSITY AND ECOSYSTEM SERVICES BY IDENTIFYING AND MANAGING PATHWAYS OF THE INTRODUCTION OF ALIEN SPECIES, PREVENTING THE INTRODUCTION AND ESTABLISHMENT OF PRIORITY INVASIVE ALIEN SPECIES, REDUCING THE RATES OF INTRODUCTION AND ESTABLISHMENT OF OTHER KNOWN OR POTENTIAL INVASIVE ALIEN SPECIES BY AT LEAST 50 PER CENT BY 2030, AND ERADICATING OR CONTROLLING INVASIVE ALIEN SPECIES ESPECIALLY IN PRIORITY SITES, SUCH AS ISLANDS.

The IUCN Guidelines for the prevention of biodiversity loss caused by alien invasive species, defines:

- a) “Alien species” (non-native, non-indigenous, foreign, exotic) as a species, subspecies, or lower taxon occurring outside of its natural range (past or present) and dispersal potential (i.e., outside the range it occupies naturally or could not occupy without direct or indirect introduction or care by humans) and includes any part, gametes or propagule of such species that might survive and subsequently reproduce; and
- b) “Alien invasive species” as an alien species which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity.

Invasive alien species are generally recognized as a major threat to native biodiversity and ecosystem health. Invasive alien species may displace native species, cause the loss of native genotypes, modify habitats, change community structure, affect food web properties and ecosystem processes, and impact the provision of ecosystem services. There are a number of examples of invasive alien species that have sufficiently displaced native species that they have had a negative impact on fisheries supported by the native species.

Alien invasive species may have limited relevance for marine offshore fisheries, due to the dynamic nature and inherent connectivity of offshore marine waters. However, alien invasive species can be a major consideration in inland and coastal waters. There are many examples of alien species that have established permanent populations and have become an important resource for fisheries (e.g., North American and African Great Lakes and in the Eastern Mediterranean).

Many introductions of alien species to inland and coastal waters have been accidental, with the eggs, larvae or adults of the alien species transferred in biofouling communities on vessels, gears, or other surfaces. Thus, fisheries can be a pathway for introduction of alien species. In some cases, however, the alien species have been intentionally introduced with the intent of supporting fisheries. Most but not all well documented cases of such intentional introductions were initially for sport fisheries and not commercial or small-scale human consumption fisheries. Whatever the pathway, in cases where alien species have become invasive and the alien species have become well-established with large populations, both sport fisheries and harvests for local consumption or markets have often followed. In all such cases reduction in abundance of these populations will have a negative impact on the fisheries exploiting them.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

**Eliminate, minimize, reduce and or mitigate impacts of invasive alien species on biodiversity and ecosystem services**

The phrase does not define a single objective but operates with a range of options from “mitigate” to “eliminate” impacts of invasive alien species. The phrase furthermore specifies that the focus should be on the impacts on biodiversity and on ecosystem services of which provision of food and livelihoods by fisheries is one. This provision does not imply any special consideration for cases where such invasive alien species have come to support fisheries in their own right.

### **Identifying and managing pathways of the introduction of alien species**

This first phrase addressing introduction of alien species seems logical in the sense that to prevent the introduction of alien species you would need to know the pathways by which the alien species are introduced. Although identifying pathways may be relatively straightforward, it is not necessarily easy. Appropriate policies and measures for management of the pathways may be complicated and effective measures may be expensive, time-demanding, and require appropriate technologies. In some cases, pathway management may not be possible, for example, if the introduction is driven by climate change. This provision does imply that intentional introductions of alien species for new recreational or food fisheries should cease, although this point was not considered directly in the negotiations of the Target.

### **Preventing the introduction and establishment of priority alien species” and “reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030**

The two phrases are clear in their objective, but it is not clear if the objectives are achievable. Priority alien species are not defined for most aquatic systems, leaving room for interpretation. Moreover, weak baselines, poor monitoring of many coastal and inland waters, and often low detectability of new alien species, makes the target of “at least 50% reduction by 2030” very difficult to evaluate and document, if possible at all.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

Fisheries targeting or having the potential for targeting invasive alien species may be one tool to eradicate or control these species. However, there may be opportunities for developing a target fishery on invasive alien species, for the purpose of culling it, or for its sustainable use. Sustainable use would require that the invasive species in question are commercially interesting, can support an economically viable fishery, and can be exploited sustainably. If needed, subsidies might be carefully considered to make it economically attractive (But see Target 18 about incentives). Technological and marketing help may be needed to develop the fisheries on invasive alien species, particularly for SSFs.

The species composition of commercial catches is an important source for information on the geographic distribution of fish and shellfish and can provide information on the occurrence of invasive alien species and the development in their abundance and distribution. The use of the species composition in commercial catches to document the distribution and abundance of alien species being caught, will require a detailed and systematic monitoring of commercial catches including by-catches, which is also necessary for addressing Target 4.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Capture fisheries are considered a pathway for the introduction of alien species in inland and coastal waters. Aggressive implementation of the Target could adversely impact communities reliant on non-native fisheries. Loss of livelihoods or commercial value of an aquatic ecosystem where an invasive species is supporting a fishery could reduce motivation to conserve or protect the full ecosystem from other development that would be more harmful to biodiversity. However, initiatives to prevent or reduce the



introduction of alien species in marine ecosystems are unlikely to affect fisheries and, as mentioned above, eradication or control of invasive alien species may be an opportunity for local fisheries.

Given the cost and complexity of managing many pathways for transfer of alien species, particularly when they carried on biofouling communities, stringent measures to preclude transfer could impose substantial financial and time costs on fisheries at all scales and in marine, coastal and inland waters.

## **5. SYNTHESIS**

Looking forward, actions to implement Target 6 will enhance the native biodiversity of all aquatic systems. However, the costs to address all the pathways by which fisheries may be involved in transfer of alien species could be quite large, and few fisheries have been engaged in discussions of these potential costs. In addition, looking at the aspects of Target 6 to categorically reduce or eliminate alien species anywhere they have become invasive would disrupt some fisheries that are now depending on the populations of alien species, in some cases with potentially large negative impacts on local livelihoods and food security.

## TARGET 7 – REDUCE POLLUTION AND ITS IMPACT

### 1. BRIEF INTRODUCTION TO THE TARGET

REDUCE POLLUTION RISKS AND THE NEGATIVE IMPACT OF POLLUTION FROM ALL SOURCES BY 2030, TO LEVELS THAT ARE NOT HARMFUL TO BIODIVERSITY AND ECOSYSTEM FUNCTIONS AND SERVICES, CONSIDERING CUMULATIVE EFFECTS, INCLUDING: REDUCING EXCESS NUTRIENTS LOST TO THE ENVIRONMENT BY AT LEAST HALF INCLUDING THROUGH MORE EFFICIENT NUTRIENT CYCLING AND USE; REDUCING THE OVERALL RISK FROM PESTICIDES AND HIGHLY HAZARDOUS CHEMICALS BY AT LEAST HALF INCLUDING THROUGH INTEGRATED PEST MANAGEMENT, BASED ON SCIENCE, TAKING INTO ACCOUNT FOOD SECURITY AND LIVELIHOODS; AND ALSO PREVENTING, REDUCING, AND WORKING TOWARDS ELIMINATING PLASTIC POLLUTION.

Target 7 covers all types of pollution with a focus on nutrients, pesticides, hazardous chemicals, pests, and plastic. Pollution is a major threat to the aquatic environment with inland and coastal waters being the most affected. Reduction in pollution will have a positive impact on fisheries, and the Target is very important for the fishing sector and especially for inland, coastal, and small-scale fisheries. The impact on fisheries by reducing pollution will mainly be indirectly resulting from the general improvement of the marine environment and its productivity. Reduction in plastic pollution may have a direct positive impact on the fishery sector by reducing damage to the fishing vessels and equipment including fishing gears caused by plastic debris.

With the exception of plastic pollution and carbon emissions, fisheries are not considered an important source of pollution. Information on the amount and source of plastic pollution from fisheries in the open sea is limited. However, several studies indicate that fisheries, in the form of abandoned, lost, or otherwise discarded fishing gears (ALDFG), is the main source of macro-plastic pollution in the open sea. Ghost fishing, where fish or shellfish are entangled in ALDFG, is generally recognized as the main threat of ALDFG to marine biodiversity. Although less discussed, the problem might also be relevant in large lakes with important net-based fisheries.

### 2. ANALYSIS OF THE TARGET CONTENT

Target 7 is highly relevant for fisheries. Pollution is a major threat to the marine environment including fish and shellfish and thereby to fisheries. The phrase: “*preventing, reducing, and working towards eliminating plastic pollution*” is the only element in Target 7 that may have a direct impact on fisheries management, and it is sufficiently explicit.

### 3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION

ALDFG are generally recognized as a source of macro/plastic pollution in the open sea. However, the information on quantities and types of ALDFG and its impacts on the ecosystems is limited and more systematic monitoring and research are required to get a full picture of the importance and impacts of ALDFG. The fishing sector could have an important role in such monitoring and research programs.

Target 7 also offers a good opportunity to review current fishing practice with the aim of identifying measures that effectively could reduce the rate of ALDFG or could retrieve already lost gears. Such measures should be developed locally with active involvement of the fishing sector.

The fishing industry could have a role in reducing plastic pollution both through reducing shipboard use of plastics and by collecting and landing plastic resulting from or collected during fishing activities. The amount of plastic a fishing vessel can collect and bring ashore depends on the vessel size and type of

fishery and on the facilities available to handle the plastic on-board and when landed. Many vessels may not have the capacity to store the plastic onboard and many landing sites do not have a waste management system able to handle the plastic collected.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

With reference to fisheries being a source of macro-plastic found in the open sea, the impact of ghost fishing and the absence of clear evidence that measures introduced to reduce the amount of ALDFG have worked, there are pressures to reduce fishing effort and/or to change fishing practice, especially in fisheries known to have a high rate of ALDFG. Alternative to plastics in fisheries gears and containers are not easily available. Consequently, an aggressive interpretation of the Target as implying a total prohibition of the use of plastics in fisheries would likely mean the closing down of most fishing activities, with huge consequences for food security. To mitigate that risk, fisheries need to make all efforts it can reasonably afford to reduce ALDGs and contribute to retrieve the related debris. The positive outcomes of these initiatives also need to be demonstrated but may be as difficult to quantify unequivocally as the negative impacts of ALDGs on biodiversity.

#### **5. SYNTHESIS**

Target 7 is highly relevant to fisheries, even and mostly in relation to pollution originating on land and in other sectors. A reduction of pollution, including by fisheries, will directly and indirectly have a positive impact on most fisheries. The aim of reducing ALDFG may lead to changes in the technology, operations, and management of fisheries where ALDFG is considered an issue.

## TARGET 8 – IMPACTS OF CLIMATE CHANGE AND OCEAN ACIDIFICATION

### 1. BRIEF INTRODUCTION TO THE TARGET

MINIMIZE THE IMPACT OF CLIMATE CHANGE AND OCEAN ACIDIFICATION ON BIODIVERSITY AND INCREASE ITS RESILIENCE THROUGH MITIGATION, ADAPTATION, AND DISASTER RISK REDUCTION ACTIONS, INCLUDING THROUGH NATURE-BASED SOLUTION AND/OR ECOSYSTEM-BASED APPROACHES, WHILE MINIMIZING NEGATIVE AND FOSTERING POSITIVE IMPACTS OF CLIMATE ACTION ON BIODIVERSITY.

Target 8 is highly relevant to the fishing sector. When confronted with the impacts of climate change, the viability and sustainability of fishery and aquaculture socio-economic and ecological systems will depend on their ability to adapt to those impacts on environments and resources. The impact of climate change in the form of rising water temperature, changed wind patterns, shifting ocean currents and acidification, are a main driver for changes to the marine ecosystems. Climate change may be a threat to existing fisheries but may also create new opportunities for fishing. Fishing opportunities will decrease in certain areas as a consequence of climate change, for example in the tropics, and increase in other areas, for example in northern areas where important commercial species are increasing.

Changes in the distribution and productivity of fish stocks resulting from climate change lead to changes in current fishing practice and require revision of management systems. For example, management systems, where the allocation of fishing opportunities are based on historical fishing patterns, may be challenged with the changes in stock distributions and would need to be revised to reflect these changes. Similarly, the use of historical time series as basis for setting fisheries management reference point may not be appropriate if climate change affects the population dynamics of fish stocks concerned.

An important contribution to the subject has been produced by FAO (see [here](#)).

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Minimize the impact of climate change and ocean acidification**

Target 8 aims at minimizing the impact of climate change on biodiversity and does not directly include actions to limit climate change. However, it is difficult to separate the discussion on the impact of climate change and climate change as such. The fishing sectors' potential contributions to both adapting to climate change and addressing drivers of climate change may therefore be items that will be discussed with reference to Target 8, although strictly speaking some parts of aspects of these considerations may be outside the remits of the Target.

#### **Mitigation, adaptation, and disaster reduction**

In fisheries, mitigation and adaptation would occur through modification of 1) assessments, to account for changes in productivity), 2) allocation, in terms of allowable catches and quotas to account for changes in productivity; and 3) management, in terms of adjusting effort allocation arrangements and locations and timing of closed areas to changes in species distribution.

#### **Nature-based solutions.**

The discussion on mitigating climate change by sequestering carbon involves a number of nature-based solutions (NbS) that may affect fisheries. This includes protection of marine sediment from physical disturbance; protection of seaweeds, seagrass beds, and mangroves; and increase the population size of

fish and marine mammals. In theory many of these benefits could also benefit fisheries, but reduction in disturbance of sediments could require major changes and/or reductions to fisheries using bottom-contacting gears.

### **Ecosystem-based approach**

The ecosystem approach is a way to implement sustainable development goals in management and is generally accepted as the approach to be applied in fisheries management since its adoption by FAO in 2001. See Targets 5 and 9 for more on the EAF.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

Climate change is a major challenge to fisheries and will result in large changes in sustainable fishing opportunities (total allowable catches and quotas; areas favourable to fishing, etc.). Target 8, having the aim of minimizing the impact of climate change and ocean acidification, is therefore highly relevant to fisheries that may benefit from the change in some areas and lose in others.

Adaptation should be viewed as an on-going and iterative process, incorporating flexibility and feedback to learn from past experiences and avert new risks. It will be necessary to bring greater adaptive capacity into fisheries where fixed benchmarks for biomass and fishing mortality and Harvest Control Rules are firmly established, in order to allow rule-based fisheries to remain well-matched to changes in stock productivity and distribution, could preserve the gains from these management measures, while remaining well matched to the changing aquatic ecosystems. This greater adaptive capacity for management may provide benefits to fisheries more broadly than just better accommodation of changes in ocean conditions, if the adaptive straggles and tools can accommodate changes in other aspects of the fisheries ecological and socio-economic background as well.

Much more research and analysis will be needed on interannual and long-term climate variability and change to understand their impact on fisheries, the approaches available to minimize them and the (potential) effectiveness of adaptation tools. The fishing sector may become an important source for data and information on distribution and abundance of fish and shellfish stocks, facilitating its role as an active player in the research.

The ongoing and future changes in stocks distribution open new opportunities for States to seriously examine issues related to coordinated or integrated management of transboundary and straddling stocks.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Reducing the impact of climate change by sequester carbon using nature-based solutions is heavily discussed. The solutions discussed include protection of marine sediments and seaweeds from physical disturbance to maintain the sediments and seaweeds capacity to capture and storage organic carbon and to storage more carbon by increasing the population size of fish and marine mammals. Bottom trawling is recognized as the main anthropogenic activity impacting the seabed and trawling may result in resuspension of the sediments and increase the remineralization of the organic carbon in the sediments leading to release of CO<sub>2</sub>. It may therefore be argued that reducing or stopping bottom trawling may contribute to reducing the impact of climate change. However, the reduction in actual amount of remineralization and emissions of greenhouse gasses resulting from stopping bottom trawling is very uncertain and is currently contested in the science literature. These uncertainties could be exploited by critics of bottom-contacting fisheries to demand pre-emptive actions to greatly reduce or ban bottom-contacting gears as a precautionary measure.

Similarly, the negative impact of fisheries with bottom contact gears on seaweeds and the resulting reduction in stored carbon is being used as argument to advocate limiting or banning bottom fishing in seaweed habitats. However, the actual reduction in the amount of stored carbon resulting from bottom fishing in seaweeds habitats is very uncertain and may vary substantially. More research is required to understand the potential link between bottom fishing, seaweed habitats and climate change.

Target 8 may also be used as an argument for reducing fisheries removals to increase the biomass of fish and amount of carbon stored in fish populations, which also contribute to the downward flux of carbon through faecal pellets. However, the complex ecological interactions in the marine environment make it very difficult to assess the net carbon storage potential of increasing fish populations and much more research will be required before reliable assessment can be made.

Failure for fisheries management to address the climate change (e.g., in distribution and productivity of fish populations), the potential indirect contribution of fisheries to climate change may be used to argue that fisheries management has failed in implementing the ecosystem approach and that a more precautionary approach is required to ensure that fisheries are sustainable with regard to climate change. An example is the use fisheries management reference points based on historical time series. They may not still be appropriate in cases where fish stock distribution and productivity are changing. Failure to adopt management strategies and reference points that take account of the impact of climate change may result in unrealistic reference point and an increased risk of underfishing or overfishing, depending on the direction of the impact.

## **5. SYNTHESIS**

Target 8 is highly relevant to fisheries. Climate change, with rising sea temperature, shift in ocean currents and acidification, causes large changes in fish populations abundance, productivity, and distribution, and is a major challenge to the fishing sector and to fisheries management. The fishing industry will have to adapt to the changes in sustainable fishing opportunities and fisheries managers must ensure that the impact of climate change is taken account for in the management system.

## **TARGET 9 – MANAGEMENT OF WILD SPECIES IS SUSTAINABLE AND BENEFITS PEOPLE**

### **1. BRIEF INTRODUCTION TO THE TARGET**

ENSURE THAT THE MANAGEMENT AND USE OF WILD SPECIES ARE SUSTAINABLE, THEREBY PROVIDING SOCIAL, ECONOMIC AND ENVIRONMENTAL BENEFITS FOR PEOPLE, ESPECIALLY THOSE IN VULNERABLE SITUATIONS AND THOSE MOST DEPENDENT ON BIODIVERSITY, INCLUDING THROUGH SUSTAINABLE BIODIVERSITY-BASED ACTIVITIES, PRODUCTS AND SERVICES THAT ENHANCE BIODIVERSITY, AND PROTECTING AND ENCOURAGING CUSTOMARY SUSTAINABLE USE BY INDIGENOUS PEOPLES AND LOCAL COMMUNITIES.

Target 9 focuses on the benefits that people receive through uses of biodiversity. It has no exact parallel in the Aichi Biodiversity Targets of 2010. Among the Aichi Targets, Target 14 calls for ecosystems that produce essential services to be restored and safeguarded but lays out no Targets nor overarching goals for the essential services themselves. Aichi Targets 1 and 2 call for people to be aware of biodiversity values and to take them into account in planning. GBF Target 9 continues that general theme, but focuses down to individual species, rather than ecosystems, noting that sustainable use of species does provide benefits to people. The phrases comprising GBF Target 9 do expand the nature of the considerations more explicitly, but generally does not change the intended direction of change called for between the 2010 and 2020 Targets.

Target 9 does not include any standards for what constitutes “sustainable use”, leaving the related rule and guidance respectively to the CBD definition, and to Target 5. The analysis of Target 5 needs to be considered closely in parallel with this Target 9, and in particular the discussion there of the complex dimensionality of “sustainable use” needs to be considered here as well.

Like Aichi Target 14, GBF Target 9 is silent on the magnitude of benefits that should be delivered to people. This makes the treatment of the human dimensions of sustainable use much less constrained than the treatment of the bio-ecological dimensions of sustainability, where particular outcomes are specified. Target 9 does acknowledge people are differentially vulnerable in overall well-being, and differentially dependent on biodiversity for their well-being, but does not specify desired outcomes to be received, even by those most vulnerable and dependent. It does go beyond the Aichi Targets in calling for specific types of activities as preferred ways to produce the benefits to people from the uses of biodiversity, but does not contain references to the value of the benefits people take from various uses of biodiversity. Rather, these considerations are scattered through Targets 10 to 14. Thus, evaluating how the GBF Targets take into account the well-being of People as well as the well-being of Nature requires looking at many parts of the Framework, and integrating a number of provisions – many of which were negotiated separately.

Nothing in the framing of Target 9 restricts its application among terrestrial, freshwater, coastal or marine ecosystems, nor among the various types of uses of wild species. Thus, fisheries in all types of aquatic systems are implicitly included under the Target, making the Target 9 relevant to all fisheries management agencies and participants in the fishing industry.

### **2. ANALYSIS OF THE TARGET CONTENT**

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

### **Ensure that the management and use of wild species are sustainable**

This phrase basically states that the outcomes specified in GBF Target 5 for wild species should be achieved, but nothing suggests alternative standards for the outcomes, other than those set in Target 5 and in the Convention itself. It does acknowledge that sustainable outcomes require both governance processes to have sustainable policies and management strategies and measures that are effective, but nothing additional about what comprises sustainable policies nor effective management. Fisheries jurisdictions have had this aspect of the Target as a central responsibility and goal for as long as fisheries have been managed (and particularly in UNCLOS or the FAO Code of Conduct for Responsible Fisheries)

### **Providing social, economic, and environmental benefits for people**

Compared to the comparable Aichi Targets, this phrase is more explicit in acknowledging that People benefit from Nature in social, economic, and environmental ways. Including all three categories of benefits makes each of them legitimate, and the phrasing does not prioritize among the types of benefits. Fisheries agencies have always pursued mixtures of resource-related, social, and economic outcomes as central to their work. However, what comprises broader “environmental benefits” to people from fisheries may be an unfamiliar concept in many places.

### **Especially those in vulnerable situations and those most dependent on biodiversity**

Fisheries have long been managed, and fisheries policies set, with acute awareness of regional dependencies on fishing for employment and food. Otherwise, the notion of heightened vulnerability of particular communities or people in particular circumstances is not as central to fisheries, but also is not inconsistent with how fisheries management is approached. The contribution of fisheries to food and nutrition of people in poverty is well recognized, and fish may be an important part of food aid to vulnerable communities.

### **Through sustainable biodiversity-based activities, products and services that enhance biodiversity**

This is at least a new phrasing for many involved in fisheries. There is no dispute that fishing is a “biodiversity-based activity”, so all fisheries are encompassed by the Target. It is well recognized that unsustainable fishing pressure harms at least the species being overexploited, and depletion of key species in a trophic system may have consequences for other species in the system – some perhaps positive (e.g., predator release) but some possibly negative (e.g., depletion of key prey in food web. Case specific evidence for such impacts is often contested, but the concepts themselves are fully incorporated in the well-established ecosystem approach to fishing. The phrase also brings in the relatively new term “[ecosystem] services” which is itself triggering substantial debate and undergoing modification. In marine and coastal fisheries, the main ecosystem service usually acknowledged is provision of high-quality food, and that ecosystem service is well recognized in fishing policy. In freshwater system there is more consideration of the role of fish in maintaining other ecosystem processes that make contributions to human well-being other than food. However, to our knowledge there are no cases of *fisheries* being managed to enhance any ecosystem services other than provision of food and associated employment and culture and maintaining the target resources and an overall “healthy ecosystem” capable of providing those other services. The evolving conceptualization of Ecosystem Services towards phrasing like “Nature’s Contributions to People” continues, however, and the relevance of this phrase to fisheries may increase in future.

### **Protecting and encouraging customary sustainable use by Indigenous Peoples and Local Communities (IPLC)**

Reference to IPLCs is made in eight GBF Targets. It is particularly appropriate here, where fisheries are central to not just the economic and personal well-being and health of coastal and freshwater-fronting



communities and families but can be central to the cultural identity of these communities and Peoples. Protecting and encouraging uses that contribute to IPLCs' wellbeing is welcome in this Target, and consistent with the UN declaration of 2021 of the International Year of Artisanal Fisheries and Aquaculture. Including "customary" in the phrase can be either or positive or negative for Indigenous People and Local communities, as explained below.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

#### **Continuity of implementation**

This Target does require fisheries uses of their Target species to be sustainable, and studies are needed to improve knowledge of how harvesting of fish affects ecosystem processes. These are already research and management priorities for fisheries. Target 9 provides a number of opportunities for fisheries jurisdictions and participants to lobby for additional resources to continue the efforts they have been making to improve the sustainability of the bio-ecological aspects of fisheries. These opportunities are covered in the material on Target 5, which addresses the bio-ecological aspects of sustainability.

In addition, this Target specifically links sustainable fisheries to provision of social, economic, and environmental benefits to people. This is a welcome, and these benefits should continue to be ensured. This can be used by agencies and the research community to call for resources to improve social science studies of fishing communities, fishing families, and social and economic aspects of fish products along the full value chain. In many parts of the world, this knowledge lags far behind knowledge of the dynamics of the major stocks being fished, even though the social and economic outcomes of fisheries are often major consideration in fisheries decision-making.

There is evidence at scales of fisheries from small and local to large and wide-ranging, that better understanding of the economic and social contributions fisheries make across those scales can improve decision-making about fisheries and that these improvements can benefit both the resource and the resource users. The phrasing of the Target does not call for major changes in direction of the social science research being conducted. Rather it calls for more such research, so the social and economic processes are better understood, in turn enabling the fisheries to be better managed. Fisheries can use what it does know and build on those foundations as additional knowledge accumulates.

#### **Broadening the benefits recognized as provided by fisheries**

Notwithstanding the multi-dimensionality of modern conceptualizations of sustainable use (see Target 5), when benefits from fishing are discussed in biodiversity settings, it is usually the provision of food that is considered the major human benefit of that fisheries provide. In coastal areas, fisheries may also be recognized as an important source employment, although this acknowledgement is not made consistently, and the jobs provided may be considered marginal. Other outcomes are overlooked or treated as negligible, and even the provision of food is sometimes treated as a benefit readily replaced by other sources of food and protein.

The fisheries expert community has tried to dispel these misconceptions in many reports and studies. However, success is mixed, even with regard to the importance of fish in feeding Humanity, and particularly those in poverty or limited circumstances in many parts of the world. Target 9 can stimulate work to better measure the diverse benefits provided by fisheries, at scales from families to communities as well as national and regional and identity of cultures where fisheries have long been important. The importance of fishing in the cultural identity of many communities and bands of Indigenous or marginalized peoples require improved use of metrics of value other than monetizing all outcomes (IPBES SUA), which will require working in collaboration with experts focused on Target 14, but that is also a benefit to fisheries.

## **Benefits to Indigenous Peoples and Local Communities**

The explicit prioritization of IPLCs, calling for their fisheries to be protected and encouraged, is welcome in its own right, as these groups have long histories of being marginalized in national and regional fisheries planning. Although efforts to decrease this marginalization are becoming more widespread, they are often not treated as full participants in decision-making, so there is ample scope for further improvement. However, the potential gains that IPLC may take from Target 9 are more than just a more meaningful role in governance and decision-making. The Target presents an opportunity to improve the understanding of how customary practices of IPLC contribute to stock and ecosystem well-being and showcase examples of how customary sustainable use by indigenous peoples and local communities operates successfully. This *de facto* acknowledges that there is much to learn from the cultures and practices of people who have often not been welcomed in the mainstream of governance and decision-making, where “scientific studies” are treated as the preferred or even sole basis to inform decision-making.

It is important in pursuing this Target to take an appropriately broad view of how IPLCs may benefit from fisheries. Although the Target refers specifically to “customary practices”, this should not be interpreted as meaning only artisanal gears and harvesting methods may be used, nor that only “soft” and “intuitive” evaluations of resource status and harvesting impacts are appropriate. Many IPLCs have adopted modern practices and concepts in their fishing, while maintaining their traditional cultural and ethical values in how their fisheries operate. This modernization of fishing practices in cultures and communities where the human dimensions of sustainability other than economic return are treated as equal or greater priorities may be the source of the most valuable lessons to all fisheries and all users of biodiversity.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Excessively high requirements for a use being bio-ecologically sustainable**

Although this is only an indirect concern regarding Target 9, as explained in the section on Target 5, it is a very real threat in settings when protectionist attitudes towards impacts on biodiversity are common. The asymmetry between Targets 5 and 9 is quite marked, in fact, with Target 5 mentioning benefits to people from uses only indirectly through acknowledging fish can enter trade, and acknowledging that that “customary sustainable uses of IPLC” should be respected and protected. However, Target 5 is silent about whether the needs of peoples and communities historically dependent on the “customary sustainable uses” should actually be met through those uses. In contrast, Target 9 starts with a precondition that the intent of Target 5 is met and then adds the expectation that the needs of Humanity must also be met for a use to be truly sustainable.

This asymmetry can be exploited readily by those with protectionist agendas. When protectionist perspectives are prominent in debates about a fishery, it may be very difficult to even enter into dialogue on the intent of this Target – to ensure that [Nature’s Contributions to People](#) are sufficient for well-being of people and communities dependent on those Contributions. As drafted, Target 9 only requires that uses be “providing social, economic and environmental benefits”. It sets no standards or benchmarks for the adequacy of those benefits relative to needs. It is the poor, with relatively more needs, who will bear the greatest burden from restrictive formulations of the Target. In middle- and high- income areas, this risk is likely to be tolerable, because alternative sources of food and of employment may be available. It could be argued that the provision for “protecting and encouraging customary sustainable use by indigenous peoples and local communities”, mitigates this risk in lower-income settings. However, poverty is widespread and many in poverty do not have Indigenous status nor live only in the small rural communities generally considered to be “local communities”, yet nevertheless products from fisheries and aquaculture are important in their diets and livelihoods. In addition, even in “local communities” there can be many

institutional barriers to their effective participation in decision-making about access to decision processes and uses of fishery resources, as discussed in the next point.

### **The separation of the human and the bio-ecological dimensions of sustainability into different Targets**

This issue was discussed under Target 5. The potential challenges that separation presents may be more serious for the human dimensions, covered in this Target, than for Target 5. Target 5 sets that the standards for bio-ecological sustainability that are easily presented as much higher than the outcomes required for human sustainability. This can arise in both large and small-scale uses. In large-scale fisheries the conservation advocacy voices can present themselves as the allies of Nature and characterize resource uses as motivated by greed and irresponsible lack of foresight. In small-scale uses, participants have often been marginalized in governance processes and in social media. These circumstances increase the potential for outcomes failing on the equity and dependent community dimensions of sustainability, to nevertheless be presented as progress towards the GBF overall.

### **Disagreements over the relative priority of social and economic returns**

Aside from the long-running conflicts over the relative priority of progress on Target 5 and on Target 9, there may be disagreements over the relative priority of social and economic returns from sustainable fisheries and between fisheries and other uses of biodiversity. These types of conflicts have a long history. Within fisheries, UNCLOS and the UN Fish Stocks Agreement strengthened the ability for nations to manage fisheries effectively within their EEZs and groups of nations to manage for straddling and high seas stocks collectively. Nonetheless, difficulties remained when fisheries at multiple scales or with different gears (and fishers) harvested the same stock, for example with one fishery producing much greater revenue but another producing more employment or other more local benefits. The provision here for protecting and encouraging sustainable uses in IPLC does give some guidance when such disputes are between large scale, market-oriented fisheries, and small-scale community-oriented users. However, despite long debate during the negotiation of these Targets, there remains a lack of clarity in Target 9 about whether that priority for IPLC should remain if those IPLC choose to use more modern fishing methods, fish for markets rather than solely community consumption, or do not live in small rural communities.

### **Non-consumptive uses such as eco-tourism, are now competing with consumptive uses**

This already is far more than solely a debate among fisheries interests, as non-consumptive uses such as eco-tourism often underplay the ecological impact of their sector and are now competing with consumptive uses like fisheries. These conflicts have increased in many areas, and there are limits to the effectiveness of tools such as spatial planning and spatial management in finding resolutions (See Target 1). Moreover, governance processes for multi-sectoral management are still imperfect, especially in aquatic systems with mobile fisheries resources. Fisheries can easily end up on the defensive in such multi-sector discussions, if alternative non-consumptive uses of an aquatic area can demonstrate their activities actually can improve the status of threatened species and vulnerable habitats and provide well-paying employment for local communities. These potential conflicts were not created by the GBF Targets. Unfortunately, the collections of Targets in the GBF do not resolve them and may actually amplify them.

## **5. SYNTHESIS**

Target 9 does take a sympathetic view of sustainable use and acknowledges the benefits to Humanity arising from sustainable uses of biodiversity. It also highlights a priority for Indigenous Peoples and local Communities, which is consistent with the trend in fisheries, leading to the International Year of Artisan Fisheries in 2022. Nevertheless, it keeps the consideration of socio-economic benefits from fisheries (along with all other uses of biodiversity) in this Target 9 separate from consideration of the bio-ecological aspects

of fishing (and other uses) in Target 5, even though in reality the outcomes of any decision made relative to one OF THE TARGET necessarily is affected by - and has effects on – the outcomes of decisions made under the other Target. The Preamble to the GBF calls clearly for the full set Targets to be looked at holistically, but much planning at national and other scales is focused on achieving individual Targets rather than delivering the vision of the full GBF.

Looking at the component phrases of Target 9, the Target does not introduce any genuinely new ideas to fisheries, and many of the existing efforts to improve the sustainability of fisheries will also contribute to progress on Target 9. However, neither does Target 9 provide much effective guidance on how to resolve longstanding tensions within fisheries, and between fisheries and other uses of aquatic ecosystems. Aside from adding to the many actions that already are recognizing the importance of maintaining livelihoods, communities, and cultures dependent on fisheries (and other uses of wild species), it subordinates contributions to human well-being to contributions to biodiversity. This is welcome from a biodiversity conservation perspective. However, without guidance on how the needs of Humanity *should* be met in alternative ways, Target 9 in the context of the GBF may impede uptake and implementation in areas where geo-political or socio-economic conflicts are common and addressing inequities in access to resources or distribution of costs and benefits from resource uses is difficult.

## TARGET 10 – MANAGE AREAS FOR SUSTAINABLE USE

### 1. INTRODUCTION

ENSURE THAT AREAS UNDER AGRICULTURE, AQUACULTURE, FISHERIES AND FORESTRY ARE MANAGED SUSTAINABLY, IN PARTICULAR THROUGH THE SUSTAINABLE USE OF BIODIVERSITY, INCLUDING THROUGH A SUBSTANTIAL INCREASE OF THE APPLICATION OF BIODIVERSITY FRIENDLY PRACTICES, SUCH AS SUSTAINABLE INTENSIFICATION, AGROECOLOGICAL AND OTHER INNOVATIVE APPROACHES, CONTRIBUTING TO THE RESILIENCE AND LONG-TERM EFFICIENCY AND PRODUCTIVITY OF THESE PRODUCTION SYSTEMS AND TO FOOD SECURITY, CONSERVING AND RESTORING BIODIVERSITY AND MAINTAINING NATURE'S CONTRIBUTIONS TO PEOPLE, INCLUDING ECOSYSTEM FUNCTIONS AND SERVICES.

Aquatic systems are not specifically mentioned but the reference to fisheries and aquaculture confirm the high relevance of this Target for the sector is high. In addition, fisheries are specifically mentioned, and issues related to practices, intensification, and contributions to people are particularly important for the sector.

### 2. ANALYSIS OF THE TARGET

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases are addressed below. The expressions and issues of importance already treated in preceding Targets are noted but not re-discussed here, to save space.

The Target aims to ensure that all areas in which biodiversity is impacted by primary production sectors (e.g., agriculture, aquaculture, fisheries, and forestry) are effectively managed to meet growing human demand while avoiding further loss of biodiversity, ecosystem services, and human well-being, sustainable livelihoods, and other benefits to people. It stresses that the management process should be sustained, and its outcomes should be ensured in the long term.

Target 10 is connected to Target 2 on restoration of degraded areas, Target 5 on sustainable use of wild species, and Target 9 on economic and environmental benefits to people, particularly vulnerable communities from sustainable uses of biodiversity.

#### **Managed sustainably**

The expression may be taken to stress the need for sustainable management through systems financially and technically sustained for the long term. This requirement would be understandable as many cases of use are poorly managed or not managed at all (e.g., paper parks, IUU fishing). However, the CBD Guidance for this Target refers instead to the generic need to ensure sustainable use, an issue already addressed in Target 2 and Target 5. It should be stressed that the CBD definition of sustainable use does not exclude *a priori* any type of use from “sustainable use” as long as the definition is met.

#### **Biodiversity-friendly practices**

The CBD Guidance indicates that biodiversity-friendly practices are those that, while producing benefits to people, help to increase the positive effects and reduce the negative effects of uses on biodiversity. Biodiversity-friendly practices are an important aspect of maintaining the resilience, or the ability of productive systems to recover from stress or disturbance. They can also help to address the conservation and restoration of biodiversity.

In fisheries, sustainable practices intend primarily to maintain livelihoods along the value chain, and to contribute to the food security of the whole society, locally and overall, while eliminating or minimizing collateral impact on habitats and on by-catch species. Sustainable fishing and aquaculture practices have existed for centuries but tend to be continuously modernized and their “biodiversity friendliness” needs to be regularly. Numerous measures are already taken to reduce fishing collateral impact, including: closed areas and/or seasons where and when risk of bycatch is particularly high, as well as special technological measures such as bycatch-excluder devices, underwater or night deployment of longlines (to reduce bycatch of seabirds), or acoustic monitors for cetacean sounds and sonic deflectors (to reduce bycatch of cetaceans).

### **Sustainable intensification**

Sustainable intensification (SI) is a term used mainly in agriculture and it is advocated outside protected areas to sustain growing demand, despite freezing or reducing areas devoted to production. Its interpretation could be adapted to fisheries as a process or system where fisheries yields are increased without significant adverse impact on existing fishing areas and without opening of new areas to fishing. The term has not been used in marine fisheries, but the issue is relevant if production must be maintained or increased to meet increasing demands while the space available for production is frozen or reduced; for example, if the fishing pressure removed from a closed area is re-distributed to accessible areas outside the closure. In fisheries already managed in a sustainable manner (e.g., close to their MSY and minimizing collateral impact), further intensification will rarely be sustainable.

The term “intensification” has been used in inland fisheries, however, to refer to a range of approaches and tools used to enhance or restore ecosystem productivity, such as introduction or re-introduction of species, artificial stocking, elimination of unwanted species, fertilization, and physical modifications. It is clear that some measures may increase productivity outside protected areas (complying with Target 3), others may help restore former conditions partially or totally (contributing to Target 2), but many measures effective for increasing productivity will contribute to distorting the ecosystem further from its original form and function, actions inconsistent with several other Targets, including 2, 3, 5 and 9.

### **Nature’s contributions to people (NCP)**

The expression originates from [IPBES](#). It has been accepted by the CBD and is referred to in the CBD Guidance on the GBF Targets as a concept similar to, and inclusive of, the concept of “ecosystem functions and services”. NCPs refer to the benefits provided by biodiversity to humans in terms of well-being and quality of life. Sustained effective fisheries management is needed to maintain NCPs particularly food provision and other cultural services. The considerations on ecosystem services apply.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Enhancing EAF**

The Target offers an opportunity (but also reminds States of their duty) to sustainably manage the resources allocated to them by UNCLOS, alone or in cooperation bilaterally or within RFMOs. All the issues raised above may be addressed within the EAF, the implementation of which still requires enhancement both at national and regional level.

More specifically, the Target represents an opportunity to 1) catalogue areas, habitats, and species, for which there are sustainability issues; 2) improve monitoring and assessment of non-target species and impacted habitats; 3) identify greener technologies for raising (in aquaculture), catching and processing; 3) test the realism of the “sustainable intensification” strategy in fisheries and aquaculture, exploring approaches, methods, costs and benefits, as alternatives to or in synergy with other strategies.

## **Consistent interpretations of terms for globally coherent implementation**

Target 10 contains several often-encountered expressions like sustainably managed, sustainable use, biodiversity friendly practices, sustainable intensification, resilience, efficiency, and productivity, which reflect its objectives. Many of these terms discussed above are defined in glossaries but the definitions may differ or leave room for interpretations. Globally coherent implementation would be facilitated by the CBD developing a common understanding of the intended meaning of these terms to avoid conflicting interpretations and incoherent implementation.

## **Interactions between fisheries and ecosystem services**

There is a need and an opportunity, in fisheries, to better understand and advocate the positive connections between fisheries and all ecosystem services. The [Millennium Ecosystem Assessment](#) distinguished four types of Ecosystem Services (ES) which in aquatic systems and fisheries are 1) provisioning services providing aquatic food and essential nutrients for human consumption); 2) regulating services making life possible for people (e.g., regulating climate and meteorology; carbon storage); 3) cultural services affecting the cultural development of people around rivers, lakes and the oceans for centuries (providing experience, knowledge, emotions and beliefs as well as recreational navigation and fishing); and 4) supporting services through the natural processes such as primary productivity and food web structures and connections that sustain target and non-target species and all services aforementioned.

## **Interactions between terrestrial and oceanic services**

Land and oceans ecosystems are not independent. It is well known that all pollution released on land and in the atmosphere end up in the ocean, making it the ultimate garbage pool: It may not be as well understood that essential services like provisioning are also connected. For example, agricultural land degradation and heavy run-off leads to sediment mobilisation to streams and rivers and ultimately coastal areas and the ocean. This provides nutrients essential for marine life (e.g., nitrate, phosphate, silicon, calcium) which, however, when in excess, lead to eutrophication, hypoxia, “dead zones” and hence loss of fishing grounds.

It is also often not realized that with the rising demography and resulting demand for food, any cutback on seafood production will need to be compensated by higher demand for terrestrial protein and hence larger surfaces for grazing or production of soya beans and other terrestrial feeds. Sustainable use of fisheries resources contributes therefore to food security but also to maintaining natural terrestrial lands.

## **Mapping of fisheries and aquaculture footprint**

Target 10 gives an incentive to map the areas important for fisheries and aquaculture in terrestrial, coastal and ocean systems, ideally assessing the past, current and future potential footprint of fishery activities. Such a mapping would serve as a basis for both recognizing historical rights and better assessing potential conflicts among activities and between them and conservation. This would support fishery interests in Marine Spatial Planning and inform efforts to freeze or reduce that footprint as appropriate in various situations. Areas of importance to biodiversity and to other user sectors could be identified simultaneously, to facilitate Marine Spatial Planning. Fishing areas not covered by any management should be a matter of particular attention.

## **Identification of collateral impact**

To evaluate if fishing areas are sustainably managed, unsustainable collateral impact would need to be specifically identified in individual fisheries: 1) cataloguing current and potential impacts in qualitative and possibly quantitative terms; 2) cataloguing current corrective management measures in place to

correct/minimize/eliminate these impacts; 3) assessing these measures' performance; 3) identifying new technological or institutional developments needed to improve performance in specific situations, through participative processes, looking at costs and benefits and their distribution among stake-holders and right-holders, and eventual trade-offs.

#### **Financial sources**

As for the implementation of all GBG Targets and specifically in Target 19, implementation resources, including for monitoring, assessment, decision-making, communication, etc. are needed. Target 10 justifies fisheries authorities to request enhanced financial and human resources for action. Special budgets will apparently be made available for the GBF implementation and for capacity-building. It is important for fisheries administrations to obtain access to these resources to take on the additional burden they face in the GBF.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

While considering the opportunities offered by the Target to the sector, a series of challenges and threats emerge:

##### **IUU Fishing**

The requirement for sustained effective long-term management producing long-term outcomes is well advocated and globally agreed. A main issue for fisheries is illegal, unreported, and unregulated (IUU) fishing. The existence of IUU in a fishery does not mean that the fishery is unmanaged but that its management needs to be improved. Many SSFs are managed "informally" through decentralized local management and that might be better recognized to avoid the risk of having them considered as "unmanaged".

##### **Destructive fishing**

The understanding of the term "destructive fishing practices" is still evolving, looking for an agreed operational and implementable meaning. The expression is the opposite of "biodiversity-friendly practices" addressed in Section 2 above. Its use has increased since the 1940s with a sharp spike between 1990 and 2010. The UN SDG 14.4 calls for an end to "destructive fishing" (together with overfishing and IUU fishing) and there is no globally agreed definition for the term. All fishing methods have some impact on biodiversity, but the scope of possible impacts ranges from minor and sustainable to causing lasting damage. The use of dynamite and poison is nearly universally prohibited as "destructive". For other fishing methods the type and magnitude of impact depends on the ecosystem in which the gear operates and on the ways in which it is operated.

An aggressive interpretation of the expression would threaten the existence of many small- and large-scale fisheries, particularly demersal fisheries. The requirement for gears and practices limiting fisheries collateral impacts on biodiversity are well agreed, even if not always implemented (particularly in IUU fisheries). However, there is a continuing tendency for critics of fisheries to categorically label some gears as destructive and unsustainable and oppose their use even in circumstances where they have been shown to not cause serious or irreversible harm. Chronic overfishing may be considered as an unfriendly practice and obviously needs to be corrected, but that is not a property of the gear type itself.

##### **Fishing impacts**

Fishing has impacts on biodiversity. Many of these impacts are necessary and sustainable (reversible) if seafood is to be produced. Others could be avoided. The purpose of effective management is to maintain the first within acceptable limits and to avoid the second. However, any of these impacts could be argued



to lower resilience to climate change, negatively impact biodiversity, or lower ecosystem services and functions. With resilience difficult to demonstrate empirically in many aquatic settings, such accusations are problematic and hard to refute empirically. It is important, therefore, for fisheries research to confirm or inform the allegations and to design gears, practices and strategies that avoid, reduce, or mitigate Significant Adverse Impacts.

### **Sustainable intensification**

As suggested in Section 2 above, fishing “intensification” is only sustainable for under-exploited stocks and only until they are themselves “fully exploited”, with adequate precaution in management. Although intensification may be feasible in agriculture, capture fisheries may not be intensified beyond populations and ecosystem MSY, with a high risk of disastrous consequences for fisheries and marine conservation. Some “intensification” might be possible on underexploited species and unfished species and areas, but extension of fisheries across space and biodiversity beyond the current footprint, should not be a preferred option and only undertaken with a significant degree of precaution. This concern will grow if increasing amounts of highly productive aquatic space is allocated to highly protected areas where fisheries are excluded.

Technologies might allow some “intensification” in aquaculture-based fisheries, in which natural stock productivity is enhanced by aquaculture production of juveniles that are added into the natural system for growth (sometimes referred to as ranching as in the case of salmon). It might also be possible under capture-based aquaculture in which young wild fish are trapped alive by dedicated live-capture fisheries (e.g., using purse-seines or traps) and maintained and artificially fed in coastal or open water pens until they are re-captured at a larger size. Intensification may also be obtained through introduction of artificial reefs when natural productivity is limited by habitat availability. Because these approaches require respectively 1) food support from the natural system, in ranching; 2) withdrawing juveniles from the natural system, for fattening in pens; or 3) rest on assumptions of habitat shortage, their effectiveness in increasing productivity needs to be carefully tested.

Aquaculture, like agriculture, is often seen as an “intensification through artificialization” of natural processes, reducing natural mortality and enhancing growth. The evolution of all fisheries production in the last five decades clearly demonstrates the potential of aquaculture to “intensify” aquatic systems production beyond what traditional fish stocks and capture fisheries can do. However, the actual and potential environmental and social impacts of aquaculture (on the food chain, genomes, habitats, space grabbing, and transfer of property and use rights) are such that this form of intensification also requires careful and well-informed considerations.

### **Risk aversion in fisheries management**

In the years following UNCLOS and the Fish Stocks Agreement, fisheries have adopted well-tested benchmarks of stocks sustainability, in terms of yield, biomass, and fishing mortality. However, it has been clear for that full period that such benchmarks were insufficient to ensure sustainability at ecosystem level. So, unless urgent action is taken to upgrade EAF to effectively consider fisheries within ecosystem benchmarks, which are yet to be agreed, the capacity of fisheries to “manage” its activities within societal benchmarks, and its traditional license to fish may be threatened.

### **Selective fishing**

This expression is also not used in the Target but “selective versus unselective fishing” has been an issue for a long time and remains a challenge and potential threat for fisheries management. On the one hand, fishing ought to be selective to avoid species and sizes that where mortality should be minimized for various reasons, optimizing the fishery’s outcomes. The consequence, however, is a market-driven

unbalanced harvest of small and large species and sizes, leading to a modified ecosystem trophic structure. On the other hand, maintaining the ecosystem structure (and functions), as required by the CBD and in the FAO Ecosystem Approach to Fisheries, would require a broader distribution of a moderate fishing pressure on all species and sizes in the ecosystem, proportional to their productivity. This strategy is referred to as Balanced Harvest. BH, sometimes inappropriately labelled as “unselective” requires indeed a carefully selective fishing for a different fishing pattern, raising a range of operational and societal issues, some potentially complex and serious. The paradox might be resolved only through an effective ecosystem approach to fisheries and conservation.

By contrast, really unselective fishing exists, for the production of “trash fish” destined to transformation into fish oils and feeds. The latter raises serious concerns regarding threatened species and ecological sustainability.

In conclusion, biodiversity-friendly fisheries require that policy makers and managers simultaneously balance harvesting in exploited ecosystems, so that 1) trophic relationships are not distorted by selective removals; 2) fishing pressure on threatened and highly vulnerable species is reduced; 3) waste is minimized by reducing discards, maximizing the use of all the catch.

## **5. SYNTHESIS**

The issue addressed by Target 10 is central to biodiversity conservation: the use of all areas should be sustainable, and management is essential. This requires biodiversity-friendly practices that both protect biodiversity and ensure nature’s contributions to people. The Target offers numerous opportunities to improve performance in this regard, through EAF; consideration of ecosystem services; control of activities’ footprint; reduction of collateral impact on biodiversity; and allocation of adequate management resources. Potential threats emerge, related to persistence of IUU fishing; use of destructive practices; irreversible impacts; unsustainable intensification; insufficient risk-aversion in management benchmarks; and unbalanced selectivity.

## TARGET 11 – RESTORE AND ENHANCE NATURE’S CONTRIBUTIONS TO PEOPLE

### 1. BRIEF INTRODUCTION TO THE TARGET

RESTORE, MAINTAIN AND ENHANCE NATURE’S CONTRIBUTIONS TO PEOPLE, INCLUDING ECOSYSTEM FUNCTIONS AND SERVICES, SUCH AS THE REGULATION OF AIR, WATER AND CLIMATE, SOIL HEALTH, POLLINATION AND REDUCTION OF DISEASE RISK, AS WELL AS PROTECTION FROM NATURAL HAZARDS AND DISASTERS, THROUGH NATURE-BASED SOLUTIONS AND/OR ECOSYSTEM-BASED APPROACHES FOR THE BENEFIT OF ALL PEOPLE AND NATURE.

Nature’s Contributions to People (like ecosystem services) are defined as “*all the contributions, both positive and negative, of living nature (diversity of organisms, ecosystems, and their associated ecological and evolutionary processes) to people’s quality of life*”. The term was developed by IPBES, to be used instead of “ecosystem services”, in response to criticisms of ecosystem services as placing ecosystems subordinate to people, with their value measured by how well the ecosystems served human needs. This sense is maintained in the rest of the Target, with the single mention of “services” being included as a companion to the intrinsic ecosystem functions.

Although the illustrations in the Target are primarily contributions that terrestrial system make to people, the Target is equally relevant to marine, coastal and freshwater systems, all of which contribute to human well-being in many ways. It is also relevant to fisheries on all scales, because in all scales aquatic ecosystems contribute to human well-being.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Nature’s Contributions to People, including ecosystem functions and services**

As described above the concept of Nature’s Contributions to People” (NCP) is an attempt to develop an inclusive phrase for policy makers and knowledge experts, that will include all the ways that humanity may benefit from how it interacts with Nature. Initially the expression “Nature’s Benefits to People” was proposed to replace the anthropocentric “ecosystem services”, but “benefits” was replaced by “contributions” because it is more value-neutral term. Nature may make a certain good or service available to all of Humanity (hence make a “contribution”), but various cultures may value the contribution quite differently – some cultures and individuals giving high value to the good or service, others, giving it little value, and still others possibly considering it to negatively affect their wellbeing. The examples given are all associated with contributions primarily from terrestrial systems, but there was no intent of negotiators to exclude aquatic systems from the scope of Target 11.

#### **Nature-Based Solutions (NbS)**

NbS is another fairly new concept in conservation and sustainable use. The general intent is straightforward – that healthy, well-functioning ecosystems often address basic human needs such as clean drinking water, nutritious foods etc., very effectively, while having far fewer detrimental impacts on the environment that do more technology-based approaches to meeting those needs. However, from the outside, the details of what are and are not “nature-based solutions” has been a topic debated among experts from different backgrounds and challenged by product makers and ENGOs. The CBD Guidance on this Target tries to clarify these concerns stating that “*Nature-based solutions can be defined as actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal*

*and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits.”* This certainly confirms the inclusive scope of the concept but includes a number of terms itself that all require interpretation, such as “sustainably used”, “modified [...] ecosystems” and “effectively”. Many fisheries management measures, particularly area-based ones, would fit with the definition. It is unlikely, however, that debate about the boundaries around “Nature Based Solutions” will be resolved in the near future, so policy debates on Nature-based solutions will be part of implementing the GFD for at least the 2020’s.

### **Ecosystem-Based Approaches**

Ecosystem approach is a term that has been widely used since the 1990s. Although debates continue about how broadly the term should be applied, [FAO Guidance on the Ecosystem Approach to Fisheries](#) has been in place for over two decades, and the concept itself is not particularly controversial. On the other hand, debate continues among different approaches that have been taken under the umbrella of ecosystem approaches, and almost all efforts at implementing an ecosystem approach have been criticized as incomplete.

### **Benefit of all People and Nature**

As with “Nature’s Contributions to People”, the intent of this expression was to be maximally inclusive: all people and all of Nature needs to be considered. In practice this is impossible, because on every scale from local to global, no measure can be expected to actually benefit *all* people in an area equally, nor can any measure benefit *all* species and populations in an area. Consequently, in practice, case specific debates about at least the degree to which this part of the Target is met, and perhaps if the intent is met at all, are likely to occur frequently.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Strengthen the Ecosystem Approach to Fisheries (EAF)**

Perhaps the most obvious opportunity for fisheries will be that Target 11 greatly strengthens the justification for widespread application of EAF. Reviews of EAF implementation commonly find jurisdictions have endorsed the concept, but efforts run into funding challenges and get bogged down in modelling and other “ecosystem studies”. Actual implementation on the water is slow and incomplete. Target 11 may be used to leverage resources for faster and more complete implementation of existing plans for EAF.

### **Strengthen social and economic objectives**

A comparably important but perhaps less obvious opportunities that Target 11 presents to fisheries is that it strengthens the justification for keeping objectives for social and economic outcomes on a level of priority comparable to biodiversity objectives. The three pillars of the CBD Convention itself legitimized “sustainable use” as just as foundational to the Convention as conservation of biodiversity. But in many settings, conservation advocates call for actions that *de facto* (and occasionally explicitly) give biodiversity a greater priority than human well-being. Target 11 does not reverse the prioritization, but it does set all those types of goals on a level playing field, to be addressed according to the GBF “as a whole”, as each Target is relevant to a given case.

It is that “according to the GBF as a whole” that may present the greatest challenge to implementing Target 11. Individual Targets can be taken out of context to argue that the GBF is prioritizing some aspect of biodiversity as the property that necessarily supersedes any other objectives for an area and use of biodiversity. It is Target 11 that clearly states that actions should be for the “the Benefit of All People and Nature”. Combined with Targets like Target 22, the well-being of communities and livelihoods dependent

on their relationships with and uses of Nature should always be a consideration in planning for uses of an aquatic region on all scales.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

##### **Restore, maintain, and enhance**

This Target readily invites critics of fisheries to increase the pressure to further reduce harvests, even when they are sustainable. Any fisheries, while using provisioning ecosystem services, will alter the abundance of target species, and critics can argue that this is opposite to the desire to “restore, maintain and enhance” ecosystem functions and services, even though other contributions to human well-being are being maintained.

##### **Nature-based Solutions (NbS)**

The argument in the bullet above can be intensified as strong conservation advocates continue to develop and extend the concept of “Nature-based Solutions”. Nature-based solutions are often presented as a package of measures, intended to *collectively* be a “solution” provided by natural processes, to some aspect of degraded ecosystem and/or people under stress in some ways. The concept has received little formal attention in fisheries, but many fisheries management measures (like closed areas and seasons) have the core properties of Nature-based Solutions: the measures taken to constrain fishing are intended to promote the fish stocks to produce more propagules and consequent recruitment, thus enhancing productivity not just in the closed area, but for the population as a whole. This has long been considered good fisheries management, so fisheries can be considered to have adopted the concept of NbS decades ago. However, this can become a threat when the measure of closing an area for fishing is removed from its fisheries management context. If the closure alone is presented as being the “ [Nature-based] solution” to stock recovery, without considering the full package of recovery measure adopted, nor how the closure might reduce the well-being of communities dependent on fish harvests from that area, focused discussion on alternative recovery strategies is circumvented in favour of simply more widespread application of the closure “Solution”.

The open-endedness and relative recency of the NbS and NCP concepts in the Target are themselves potential threats because the terrestrial conservation biology has been particularly active in efforts to scope and define what constitutes several of the key terms in the Target. With much of the dialogue intended to tighten the definition of the terms and concepts in Target 11 commonly occurring in settings where terrestrial conservation biology perspectives often dominate, these definitions and interpretations may not serve the aquatic realm well and marginalize the benefits from fisheries in the “contributions” being made to people and nature.

The concerns above may allow ecosystems modified by human uses like fishing to be presented as part of the problem in need of a “Nature-based Solution”, because they undoubtedly can be shown as at least offering a different mix of “Contributions to People”, with some contributions and ecosystem functions altered, if not actually reduced, through the use. It will be important to organize the evidence that substantially modified aquatic systems (e.g., with large shellfish farms) can also provide important ecosystem services, and not just the single use intended by the modification.

#### **5. SYNTHESIS**

This Target is worded as a “big picture” Target, in contrast to many others that are selectively about sustainable use of biodiversity, including fisheries, or safeguarding specific areas, etc. By bringing together “Nature’s Contributions to People”, “benefitting all people and nature”, “ecosystem functions and

services” and “Nature-based Solutions”, this Target has the potential for sustainable fisheries to be a showcase for success of Target 11. However, the scope and exact definition of many of the critical concepts are still a work in progress with a substantial engagement of strong conservation biology advocates, some with a less-than-favourable view of commercial (at least) fisheries in this work in progress/ Fisheries experts in science, management and policy need to become strongly engaged in these discussions and supporting research, to ensure the outcomes give appropriate consideration to the importance of sustainable fishing for human well-being.

## TARGET 12 – URBAN AREAS

### 1. INTRODUCTION TO THE TARGET

SIGNIFICANTLY INCREASE THE AREA AND QUALITY AND CONNECTIVITY OF, ACCESS TO, AND BENEFITS FROM GREEN AND BLUE SPACES IN URBAN AND DENSELY POPULATED AREAS SUSTAINABLY, BY MAINSTREAMING THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY, AND ENSURE BIODIVERSITY-INCLUSIVE URBAN PLANNING, ENHANCING NATIVE BIODIVERSITY, ECOLOGICAL CONNECTIVITY AND INTEGRITY, AND IMPROVING HUMAN HEALTH AND WELL-BEING AND CONNECTION TO NATURE AND CONTRIBUTING TO INCLUSIVE AND SUSTAINABLE URBANIZATION AND THE PROVISION OF ECOSYSTEM FUNCTIONS AND SERVICES.

The Target is highly relevant for aquatic ecosystems. Many important urban centres are located close to rivers, lakes, lagoons, and oceans. The Target refers specifically to “blue spaces”, i.e., inland and coastal waters in and close to and part of urban centres, and their biodiversity.

*A priori*, being among the most irreversibly degraded terrestrial environments, urban areas have very little in common with fisheries. However, many coastal or riparian urban centres host and support large-scale and small-scale fishing infrastructure (ports and transformation and distribution systems) which contribute to urban well-being and food security. In addition, coastal urban centres impact very heavily the integrity and productivity of coastal systems, and hence the productivity of coastal fisheries on which they partly depend for food security. Furthermore, the reference to “densely populated areas” (hereafter DPAs,) in addition to “urban areas”, opens the scope of the Target to less structured human population concentrations, usually built by vulnerable communities and relying to some extent on aquatic systems and fisheries for their livelihoods and weak food security, while also providing food for the nearby cities.

However, Target 12 does not explicitly address the relevance of fisheries to the issues considered, even though fisheries would be implicitly included in the reference to “ecosystem services”.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Green and blue spaces**

The CBD Guidance indicates that these terms refer to vegetation, inland and coastal waters. The Target specifically calls for the area, quality, connectivity, accessibility, and benefits from such areas to be increased for the purposes of enhancing native biodiversity, ecological connectivity, and integrity, and improve human health and well-being and connection to nature. This could be accomplished in various ways, including by creating new green and blue spaces, better managing existing areas for biodiversity and health outcomes, and ensuring that such areas are accessible to people.

#### **Urban and densely populated areas**

The Target clearly refers to cities. However, the expression “densely populated areas” expands its scope to less structured concentrations of human populations in coastal or riparian areas.

#### **Biodiversity-inclusive urban planning**

Urban planning refers to the technical and political process concerned with the welfare of people, control of the use of land, design of the urban environment (including transportation and communication networks), and protection and enhancement of natural processes. The Target calls for taking biodiversity

conservation and ecosystem services more explicitly into account in the urban planning processes, which are usually more focussed on economic efficiency and human health.

For cities located near or in aquatic systems, improving water quality and biodiversity in these systems may also improve fisheries, including small-scale and recreational fisheries, contributing to livelihoods, recreation, and food security, particularly but not only in vulnerable suburban communities.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

The Target itself does not refer to any direct implication for fisheries but useful considerations may be made relating to the rarely dealt sub-sector of urban fisheries and fisheries in densely populated areas.

#### **Reducing urban development impact on fisheries**

Coastal urban centres and DPAs tend to degrade, often irreversibly, the coastal environment, through coastal developments, ports, marinas, dredging or filling coastal lagoons and waterways, and pollution. By aiming at rehabilitating coastal and riparian biodiversity, this Target may improve coastal fisheries productivity. It offers to fisheries an opportunity to advocate for a better coastal environment and to participate actively in planning it and its uses.

A lack of participation of the fishery sector to such processes will leave it very vulnerable to degradation and/or displacement by all other developing economic activities, a concern already well demonstrated in the past.

#### **Reducing fisheries impact on urban spaces**

Conversely, fishing infrastructure which is often an important engine of cities and DPAs can also negatively impact the environment and biodiversity through coastal reconversion, port building, polluted water discharges, and atmospheric pollution (e.g., from processing plants). The Target offers therefore opportunities and incentives for the sector to improve its environmental footprint on the urban space (cleaner fishing ports and less impacting processing systems) and on itself (improved biodiversity).

### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Being only marginally relevant for fisheries, the Target itself may not present much risk of aggressive interpretations and misinterpretations. The main threat, if any, may be that Target 12 does not *explicitly* mention fisheries, even though it addresses issues of relevance to fisheries. As a consequence, a lack of involvement of fisheries authorities in planning and management processes, in systems with substantial small-scale or recreational fisheries, may be detrimental to the sector by marginalizing fisheries in the discussions of uses of the waters and aquatic resources in urban areas and DPA.

However, in the spatial planning processes, fisheries will be competing with other, often more economically and structurally powerful economic sectors, the interests of which may take precedence. In addition, the focus on the citizens access to *blue spaces* of quality may represent a risk of displacement of fisheries infrastructures and fishing grounds away from urban centres (if pollution and biodiversity degradation has not already produced this effect). For example, the need to provide for biodiversity-related recreational opportunities to urban dwellers may lead to priority development of tourism and recreational fishing at the expense of professional fishing.

### **5. SYNTHESIS**

The Target may be relevant for large- and small-scale and recreational fisheries which, in urban systems in which they are present, should be fully represented in planning processes, to preserve their opportunities and maintain their role in the urban space.



## TARGET 13 – EQUITABLE BENEFIT SHARING FROM MARINE GENETIC RESOURCE

### 1. BRIEF INTRODUCTION TO THE TARGET

TAKE EFFECTIVE LEGAL, POLICY, ADMINISTRATIVE AND CAPACITY-BUILDING MEASURES AT ALL LEVELS, AS APPROPRIATE, TO ENSURE THE FAIR AND EQUITABLE SHARING OF BENEFITS THAT ARISE FROM THE UTILIZATION OF GENETIC RESOURCES AND FROM DIGITAL SEQUENCE INFORMATION ON GENETIC RESOURCES, AS WELL AS TRADITIONAL KNOWLEDGE ASSOCIATED WITH GENETIC RESOURCES, AND FACILITATING APPROPRIATE ACCESS TO GENETIC RESOURCES, AND BY 2030, FACILITATING A SIGNIFICANT INCREASE OF THE BENEFITS SHARED, IN ACCORDANCE WITH APPLICABLE INTERNATIONAL ACCESS AND BENEFIT-SHARING INSTRUMENTS.

This Target focuses on commercial benefits from use of marine genetic resources (MGR) and digital sequence information (DSI) from both wild and domesticated species. This is a rapidly developing field, and even methods for estimating the potential value from MGR and DSI are incompletely established. However potential value for use in food production and pharmaceuticals are in the billions and growing. It has been a concern for decades that capacity to participate in research on MGR and DSI is far stronger in the fully developed economies and large academic and corporate institutions than in less developed economies and community-based research and knowledge centres. With global rules on intellectual property rights conferring lasting benefits to those first identifying a product from MGR and DSI (see [here](#)), there are widespread concerns about further economic marginalization of already disadvantaged countries, communities, and cultures on scale from global to subnational.

Target 13 attempts to address these concerns with its call for “fair and equitable sharing of benefits”. It is a very important Target in terms of delivering the third pillar of the Convention itself. It may have significant implications for pathways for development of aquaculture, but at least currently is not considered a major concern for fisheries of all scales, if they target wild stocks.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Ensure the fair and equitable sharing of benefits from MGRs and DSI**

As a phrase taken almost verbatim from Article 8(j) of the Convention on Biological Diversity itself, it is familiar and conceptually straightforward to all working on global and regional biodiversity issues, even if there are often shortfalls in implementation.

#### **Traditional knowledge associated with genetic resources**

This phrase was intended to ensure equity of distributing benefits from actions on the Target in cases when the knowledge of IPLCs contributed to researchers locating promising sources of genetic material for their investigations and eventual commercial development. Tracing the “knowledge supply chain” from IPLC knowledge to products on the market may not be straightforward, but the intent of the provision is clear.

#### **Facilitating appropriate access to genetic resources**

What constitutes “appropriate access” is not particularly clear. However, the intent of this phrase is at least to ensure that if research and development of products from MGR or DSI resulted in awarding of intellectual property rights to those products, established uses and users of the species from which the

genetic material was obtained are allowed to continue their customary uses of the species and products, and to look for ways to produce additional products and uses from those species.

### **By 2030 facilitating a significant increase of the benefits shared**

This provision is included with the intent of accelerating the development of mechanisms by which the benefits already arising from product development through MGR and DSI are actually shared. Despite the central theme of this Target being included in the Convention from the time it was negotiated, genuine progress on access and benefit sharing from past genetic and DSI work, mostly from terrestrial plants and animals, has been unsatisfactory to the large majority of countries with less developed economies and economies in transition.

### **In accordance with applicable international instruments**

This phrase was included to confirm that existing instruments for access and benefit-sharing of genetic resources do not need to be scrapped. They are accepted as providing a sound if incomplete foundation for policy developments and implementation.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

Fisheries are unlikely to be directly involved with or affected by most of the initiatives expected under this Target. Participants in small scale fisheries may be a group covered by the provisions regarding knowledge provided by traditional users of the species. However, with modalities for benefit sharing in very early stages of development, there is little expectation that there will be any rapid influx of benefits to any specific traditional communities. Aquaculture production and facility operators may be affected by this Target in ways that could benefit that sector, but this review by FEG focuses on capture fisheries for wild populations.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

It is unlikely that capture fisheries will be directly affected by actions under Target 13, at least not until technologies for MGR and DSI become much more widespread. Even then, the strong support in Plenary for the provisions about respecting and building on applicable existing international instruments, should deter any proposals to use Target 13 as justification to restrict access of fisheries to wild populations of fish. Similarly, the provision acknowledging that any information taken from “traditional” users and users should be covered by the benefit sharing arrangements, should protect small-scale uses from having their knowledge exploited to their detriment. This provides an incentive to ensure participants in small-scale fisheries are aware of the value of their knowledge, but that is a global priority, not specific to fisheries.

## **5. SYNTHESIS**

Target 13 is unlikely to be a priority for capture fisheries, as providing either new objectives and opportunities or new threats. Aquaculture producers should be aware of the Target and its provisions, as should Indigenous Peoples and Local Communities, but overall and not solely in the context of their knowledge of marine ecosystems and fisheries.

## TARGET 14 – INTEGRATION OF BIODIVERSITY IN DECISION-MAKING

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE THE FULL INTEGRATION OF BIODIVERSITY AND ITS MULTIPLE VALUES INTO POLICIES, REGULATIONS, PLANNING AND DEVELOPMENT PROCESSES, POVERTY ERADICATION STRATEGIES, STRATEGIC ENVIRONMENTAL ASSESSMENTS, ENVIRONMENTAL IMPACT ASSESSMENTS AND, AS APPROPRIATE, NATIONAL ACCOUNTING, WITHIN AND ACROSS ALL LEVELS OF GOVERNMENT AND ACROSS ALL SECTORS, IN PARTICULAR THOSE WITH SIGNIFICANT IMPACTS ON BIODIVERSITY, PROGRESSIVELY ALIGNING ALL RELEVANT PUBLIC AND PRIVATE ACTIVITIES, AND FISCAL AND FINANCIAL FLOWS WITH THE GOALS AND TARGETS OF THIS FRAMEWORK.

This Target represents the call in the GBF to ensure that governments take biodiversity into account in basically all the responsibilities they discharge, and initiatives which they lead or join. Its intent is to be fully inclusive, both with regard to aspects of biodiversity to consider, and actions of governments to influence. Notwithstanding the very broad intended scope of application of Target 14, it is not prescriptive about how the full integration would be undertaken, nor the outcomes that would be expected. Thus, even though many of the provisions are characteristic of relatively top-down governance processes by countries with strong economies, the intent was to have the Target show sufficient flexibility to apply to a wide range of approaches to governance and decision-making, without explicitly calling for special considerations for Indigenous People and Local Communities.

### 2. ANALYSIS OF THE TARGET CONTENT

#### **Full integration of biodiversity and its multiple values**

The lack of qualifiers on “biodiversity” and the inclusion of “multiple values” were both intended to maximize the scope of Target 14. Concerns have been present for decades that conservation of biodiversity has focused on “charismatic megafauna” and species of high commercial value, and of protection of special places, with other aspects of biodiversity and all places not explicitly protected consistently being degraded. Full integration was intended to address similar concerns present for decades that governments may pass a strong piece of legislation on biodiversity, with responsibility assigned to an Environmental Ministry, while other Ministries overlook or give token consideration to biodiversity in most or all their actions. This part of the Target is to ensure ALL parts of governance consider ALL biodiversity, without monetizing the “value” of biodiversity in any sectoral currency before deciding whether or not to take it into account.

#### **Policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, environmental impact assessments and, as appropriate, national accounting**

This series of items represents the outcome of a classical “shopping list” negotiation. There was little disagreement among Parties and other intervenors that “full integration” meant that governance processes should give all of biodiversity consideration in all the activities undertaken. The list of types of activities was built through the desire by negotiators to capture the many actions that governance process may take, where consideration of biodiversity could have an important role in the decisions, choices, plans or outcomes of the actions. None of the many terms listed were intended to be interpreted narrowly, nor were boundaries among the various activities on the list a concern, as long as no major opportunities for governance to consider biodiversity as part of its business fell through the cracks and failed to consider biodiversity.

### **Within and across all levels of government and across all sectors**

This again was a phrase intended to close possible loopholes about which levels of a governance system have responsibility for particular activities, or particular components of biodiversity. Rather than a problematic target calling for a particular structure for governance that might be considered to best conserve biodiversity, Target 14 acknowledges that governments vary substantially in how they are structured, for many reasons. Regardless of the partition of responsibility for conservation and sustainable use of biodiversity, both among levels of government and among different Ministries, and other actors in governance, there must be full integration of biodiversity considerations into their actions, whenever the governance actions have direct or indirect implications for any parts of biodiversity.

### **Significant impacts on biodiversity**

This is the only Target which refers to “significant impacts” on biodiversity. All other uses of significant refer to reductions in pressures on biodiversity or increases in resources or efforts at conserving biodiversity. Negotiators generally avoided the adjective as a qualifier of how much impact on biodiversity was necessary for actions to be triggered; both because of the subjectivity of how large an impact is “significant”, and because of the *de facto* implications that impacts less than “significant” were acceptable. In this Target, the term is used for prioritizing the agencies in a government and sectors of an economy that can influence biodiversity in either direction, i.e. with the potential of substantially harming biodiversity directly or indirectly if not acting responsibly, or whose actions can proactively reduce threats, harm, or both to biodiversity. Even if other government agencies and other sectors can impact biodiversity as much as fisheries can, if not well-managed fisheries clearly have potential to have significant adverse effects on biodiversity, and fisheries Ministries have significant potential to manage the related threats to biodiversity. Therefore, fisheries clearly are a key sector under this Target, and are prompted to ensure that conservation and sustainable use of biodiversity are fully integrated in all policies, regulations and conduct of fisheries.

### **Progressively aligning all relevant public and private activities, and fiscal and financial flows**

This provision is a call to promote collaborative alignment of governance actions to manage threats to biodiversity with how the private sector activities are conducted – seeking efficiencies in the regulatory regimes across scales and Ministries, and both high compliance and high sector buy-in to the actions. Inclusion of explicit reference to fiscal and financial flows is intended to capture both government allocation of funding, whether for subsidies (or the other forms of funding for support of participants in the sector) or for construction of infrastructure and compliance mechanisms and capture the entire product chain from harvest to markets. Again, fisheries would be a major sector for application of this provision of the Target.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Better manage fisheries impact on ecosystems**

An important implication of Target 14 is that it clearly gives Fisheries Management Agencies at the relevant levels of government primary responsibility for managing the ecosystem effects of fisheries. They have to collaborate and integrate with the actions of other environmental and economic Ministries, but the lead for policy development and implementation lies with fisheries jurisdictions. This is an important development at a time when the respective roles of environmental protection agencies and Ministries managing fisheries (and other sectors using biodiversity) may not be clear in the public dialogue on conservation and sustainable use, and sometimes not even within governments at the same or nested levels.

### **Accelerate mainstreaming of biodiversity**

Fisheries have been mainstreaming biodiversity into both regulations and operations of fisheries for decades but are often criticized for slow progress and piecemeal operations. This Target justifies efforts to accelerate scope and ambition of those efforts, particularly in specific fisheries where progress has been slow. It also justifies allocation of resources to actually conduct in-the-field evaluations of the effectiveness of mainstreaming efforts, so the integration of biodiversity conservation efforts with harvest management delivers the desired outcomes, rather than just including biodiversity in a long list of considerations addressed somehow in regulations on the fishing sector.

### **Increased financial support for research and enforcement**

Even though mainstreaming biodiversity into fisheries has been a priority since the 1990s, much remains to be learned about ways to improve the performance of fisheries and reduce its footprint on aquatic biodiversity while continuing to provide food, employment, and livelihoods. This Target may be valuable in gaining increased access to funding and logistic support for research on better approaches to managing the ecosystem effects of fishing, and for operations to combat IUU and UUU fishing, and facilitate high compliance of the industry with fisheries regulations.

### **Improved collaboration at global and regional levels**

On regional and global scales, this Target justifies further collaboration and information-sharing among the CBD Secretariat, the FAO, regional fishery management bodies, regional seas organizations, and similar agencies. Officers in these bodies often face administrative hurdles to greater sharing of information and expertise, and to developing collaborative approaches to initiatives such as OECMs, EBSAs and VMEs, if any Parties to these agencies have reservations about the collaborations. The full integration of efforts of all these bodies is a clear call to remove those barriers, while respecting the respective mandates of each jurisdiction.

### **Endorsement of eco-certification regimes**

This Target is a strong endorsement of eco-certification regimes to use the full power of fiscal and financial flows to promote this Target and the goals of the GBF. The eco-certification processes have to be rigorous, transparent, and equitable to meet the intent of the GBF, but provide potentially powerful tools for advancing its goals (see also developments related to ecolabelling and certification in Target 15 and 16).

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Too slow implementation**

Fisheries are highly vulnerable to accusations they have been slow in full integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, and environmental impact assessments. These accusations are not always well-founded, but neither are they always misdirected. Any increase in pressure on fisheries to accelerate uptake of *all* the components of an ecosystem approach to fisheries could lead to measures that are strongly resisted by the industry, have much higher costs and/or lower benefits than expected, and increase tensions between the industry and its regulatory authorities. Much more rapid transfer of results and knowledge from research and use of all knowledge systems into fisheries regulations and practices is needed, to reduce this very real potential threat to fisheries from Target 14.

### **Risk of further marginalizing small-scale fisheries and communities**

The framing of this Target is such that it can be read as marginalizing community-managed small-scale fisheries, and co-managed fisheries of all scales, in favour of central management authorities at one or more levels of governments. Community-managed and co-managed fisheries need to be proactive in documenting how their activities do take biodiversity and all its values into account in their activities and practices, to avoid this Target being used as justification for top-down intervention of regulatory authorities in community-managed fisheries.

### **Representation of biodiversity interests in fisheries processes**

Fisheries have generally developed their own criteria for identifying VMEs, OECMs, highly vulnerable species and other places and taxa in need of enhanced risk aversion in management. Such efforts usually draw in some experts from fields other than fisheries, but the processes are largely organized and conducted by fisheries jurisdictions. Aggressive environmental interests could use Target 14 to argue that all such initiatives must have environmental and biodiversity agencies at least co-equal, if not leading, these initiatives, to ensure full integration across agencies. Fisheries jurisdictions need to ensure experts from biodiversity fields and agencies are not just given token representation in these types of initiatives, but are treated as welcomed partners in the work, to ensure the intent of Target 14 is delivered.

Fisheries have long been Parties that participate in strategic environmental assessments, environmental impact assessments+ and similar reviews of potential impacts. However, they have rarely had all the operations involved in specific fisheries subject to an EIA or SEA. Target 14 can be used as justification for entire fisheries to be subjected to full EIA or SEA processes, as an undertaking. The costs of such comprehensive assessments could be very large, and the results not always unequivocal with the information available. EIAs and SEAs producing inconclusive results and some findings with high uncertainties could trigger imposing a web of political and practical constraints and conditions on fisheries, on scales from small and constructive to large and crippling, particularly for larger-scale fisheries.

## **5. SYNTHESIS**

Target 14 may be taken as simple endorsement of greater implementation of the ecosystem approach to fisheries and greater collaboration with environmental ministries at various levels of government. Both of these directions have been priorities for fisheries for at least three decades and could benefit fisheries substantially. Target 14 could also be used to pressure governments to interfere substantially with community managed fisheries, or to require them to implement costly and intrusive measures adopted by non-fisheries regulatory agencies which demand “full integration” of their policies, regulations and initiatives in fisheries as well as other uses of biodiversity. Similarly, the encouragement for greater participation in EIAs and EAS could lead to better accommodating fisheries in multiple-use scenarios for aquatic areas, or impose greater, possibly much greater, operational and financial burdens on fisheries to protect even sustainable uses of biodiversity from being assessed as not adequately taking biodiversity and its values into account. Hence Target 14 is one of those Targets where proactive engagement in its implementation could produce substantial benefits to fisheries, but inattention to its implementation, allowing other interests and agencies to control the implementation, could seriously disrupt even sustainable fisheries.

## TARGET 15 – BUSINESSES AND BIODIVERSITY

### 1. BRIEF INTRODUCTION TO THE TARGET

TAKE LEGAL, ADMINISTRATIVE OR POLICY MEASURES TO ENCOURAGE AND ENABLE BUSINESS, AND IN PARTICULAR TO ENSURE THAT LARGE AND TRANSNATIONAL COMPANIES AND FINANCIAL INSTITUTIONS:

(A) REGULARLY MONITOR, ASSESS, AND TRANSPARENTLY DISCLOSE THEIR RISKS, DEPENDENCIES AND IMPACTS ON BIODIVERSITY, INCLUDING WITH REQUIREMENTS FOR ALL LARGE AS WELL AS TRANSNATIONAL COMPANIES AND FINANCIAL INSTITUTIONS ALONG THEIR OPERATIONS, SUPPLY AND VALUE CHAINS AND PORTFOLIOS;

(B) PROVIDE INFORMATION NEEDED TO CONSUMERS TO PROMOTE SUSTAINABLE CONSUMPTION PATTERNS;

(C) REPORT ON COMPLIANCE WITH ACCESS AND BENEFIT-SHARING REGULATIONS AND MEASURES, AS APPLICABLE;

IN ORDER TO PROGRESSIVELY REDUCE NEGATIVE IMPACTS ON BIODIVERSITY, INCREASE POSITIVE IMPACTS, REDUCE BIODIVERSITY-RELATED RISKS TO BUSINESS AND FINANCIAL INSTITUTIONS, AND PROMOTE ACTIONS TO ENSURE SUSTAINABLE PATTERNS OF PRODUCTION.

Target 15 is aimed directly at the business community itself, and not the regulatory institutions and jurisdictional authorities. It was not the intent of the negotiations and dialogue on Target 15 to weaken the authority or accountability of regulatory authorities with jurisdiction over natural resources. Consensus on Target 15 focused on text laying out the expectations of a responsible business and finance sector, but also noted at the outset that that the business and finance sectors should be operating under the “legal, administrative or policy measures” of the State. Under that jurisdictional “umbrella” the main institutions targeted by Target 15 are corporate and financial institutions, particularly international ones, involved in commerce and large-scale trade (multinational corporations, large banking and investment firms etc). The concern was basically that through investments and operations these corporate interests may in themselves be drivers of unsustainable practices or may alter how other existing drivers of unsustainable practices are expressed. The separate sub-provisions of the Target are expectations set for the business and finance sector themselves, with jurisdictions simply ensuring that the legal and policy frameworks encourage and enable the corporate sector to operate responsibly.

In commercial fisheries, this is not the usual approach taken to pursue sustainability of direct and indirect impacts of fishing and related risks for the resources and the sector. Instead, regulatory authorities play the central role in setting standards for sustainable practices and develop the monitoring and surveillance infrastructure necessary to evaluate both stocks and fisheries against those standards that the business is expected to meet. Voluntary eco-labelling and certification practices are spreading [led by the Marine Stewardship Council](#) to promote sustainably managed fisheries and highlight their products to consumers. The precautionary approach has been [proposed by FAO](#) decades ago to deal with uncertainty and risk in decision-making and *de facto* embedded later in the [Ecosystem Approach to Fisheries](#).

Given the “business” of fisheries is most often based on harvesting, processing, and marketing products from wild populations of fish and invertebrates, and at least marine fish are generally considered a common property resource, Target 15 does confirm that ultimate accountability for biodiversity outcomes should remain primarily with the State jurisdictions, rather than shifting sole accountability to private sector fishing businesses. However, it also confirms that participants in the “business” of fishing should

take corporate responsibility for their environmental impacts, consistent with any national or international environmental laws.

This *de facto* creates a dual accountability. States should be accountable for overall status of biodiversity and the pressures on it. In addition, the business and financial sectors are accountable under Target 15 for proactively adopting responsible policies and practices for minimizing their impacts on biodiversity, rather than waiting for States to adopt sufficiently tight regulatory frameworks, and for willing and proactive compliance with regulatory frameworks, rather than regularly testing the limits of surveillance and enforcement abilities of the regulators. An inherently responsible business sector can be a substantial player in aquatic biodiversity conservation, particularly for wide-ranging fleets with numerous corporately owned and operated vessels, and when individual vessels may participate in several fisheries over a fishing year.

From this perspective, the marketing and trade strategies of commercial fishing operations can be drivers of unsustainability practices, and alter other drivers, so it is worthwhile to examine applicability of the provisions of Target 15 to fisheries, taking into account the prominent role and responsibilities of jurisdictions in regulating the operations of fisheries in ways that differ from regulation of many other business and financial sectors.

## **2. ANALYSIS OF THE TARGET CONTENT**

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

**Encourage and enable business, to [...] regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, [...] along their operations, supply and value chains and portfolios**

In commercial fisheries, the major tasks set by this provision in Target 15 are already expected to be performed by fisheries management authorities at the scale where the resource is regulated, at least for the harvesting activities. Activities occurring further up in the product value chain are not a fishery management responsibility, but many States are active in providing information to consumers (together with industry) and in international reporting. Monitoring, assessment, and transparent reporting of fishing activities (mostly responsible for impacts on biodiversity) are already part of the Code of Conduct for responsible fishing ([CCFFR](#)) adopted more than a quarter century ago. Technologies for monitoring, methods for assessment, and outlets for transparent reporting all have continued to evolve, and uptake is incomplete particularly in parts of the world that have weak capacity in their fishery research and management institutions. In cases where monitoring and assessment are weak, however, and where public access to information on fisheries is weak, transfer of responsibility of those tasks to industry is unlikely to offer quick or effective improvements to the shortcomings.

It should be stressed that although risk assessment issues were raised for decades in fisheries, risk assessments are not yet a widely spread approach in fisheries management. There are cases where they have been used, but primarily in a few leading nations that have widely implemented the Precautionary Approach to Fisheries in practice, using for example risk-based Management Strategy Evaluation processes.

**Encourage and enable business to [...] provide information needed to consumers to promote sustainable consumption patterns**

Certainly, the public demand for such information regarding fish products, to guide responsible choices as a consumer, is growing. There are a number of credible eco-certification bodies focused on fisheries, with the Marine Stewardship Council standards and logo particularly widely recognized in the high-income



consumer countries. Costs to meet the standards of these private sector eco-certification bodies can be high and alternative independent sustainability evaluations funded by volunteer and donor funded expertise have also been established. This review does not contrast the standards and benchmarks used by these different certification bodies, but all of them already provide vehicles for addressing this provision of Target 15. Much greater uptake may be desirable, so consumers can more readily access information about sustainability of seafood products in the markets. However, the intent of this provision of Target 15 is widely accepted in fisheries, and tools to deliver it are developed and thoroughly tested.

#### **Encourage and enable business to [...] report on compliance with access and benefit-sharing regulations and measures**

For this provision, in commercial fisheries it is again the regulatory authority, rather than the private sector corporations, that typically report on compliance and violations. It is noteworthy, though, that most regulatory violations are regarding compliance with measures regarding harvesting and processing actions. Policies and programs addressing access to fishing opportunities and benefit sharing from fisheries are almost exclusively vested in the regulatory authorities, and transparency is sometimes not assured. There are varying degrees of consultation on access and benefit sharing with the participants and corporate sector involved in fishing, but no serious proposals to transfer primary responsibility on reporting from regulatory authorities directly to the private sector.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

#### **Eco-certification standards**

There is always scope for increased uptake of eco-certification standards and awareness of the meaning of the different certification labels. However, the standards set, and information made publicly available by credible certification frameworks, can deliver a substantial portion of the intent of Target 15, even though debate continues on details of the standards and rigour of individual labels. With the cost of certification still a barrier to many fisheries, Target 15 may provide an incentive to more fisheries to invest in the certification processes, and for national and other levels of government to help reduce the cost burden on fisheries where necessary.

#### **Gaps in monitoring and assessment capacity**

There is similarly an opportunity to justify filling gaps in monitoring and assessment capacities, a gap already a focus for meeting Targets regarding sustainable use, such as Targets 5 and 9 (see those texts for more information). The additional value here may be where jurisdictions seek to share the cost of surveillance, enforcement, and assessment with the industries, and use this Target to highlight that from the perspective of the CBD, the corporate sector should be covering these costs as a part of responsible practice already. In addition, where surveillance and enforcement are narrowly focused on violations of specific regulations, Target 15 can be used as incentive to compile information on a much broader range of biodiversity concerns, even if there are no specific regulations for which compliance is being evaluated.

#### **Confidentiality issues**

Target 15 can also be used to counter the reluctance of industry to share information that they consider commercially sensitive. There may well be pieces of information the diffusion of which could have significant implications for competing corporate operations. However, for many biodiversity considerations in a fishery, sharing information on industry performance should not compromise commercial interests. Target 15 clearly calls for the industry to sit down with the regulators and work out ways to ensure that as much information as possible on biodiversity performance is made available to the public.

### **Integration across the value chain**

More broadly, Target 15 offers an opportunity to look at commercial fisheries in a much more integrated way than is commonly the case at present. In most countries, fisheries management jurisdictions manage operations on the water, and often at the dock and initial stages in processing catches. However, once the product is out of the processing plant, completely different experts and authorities take over the rest of the supply chain. Although feasible to do, particularly with modern information technologies, there are very few incentives to looking at “fishing” holistically, from the “when, where and how” the vessel deploys the gear until the consumer purchases (or not) the product. What benefits might arise from looking at the entire supply chain holistically are largely speculative at time, but the “whole of the supply chain” approach is commonly a best practice in many industries and could well have benefits for both fishing and biodiversity.

### **Equity in access and benefit sharing**

Efforts at more equitable policies for access and benefit sharing of fishery resources is also promoted by Target 15. Although the Target itself poses this as a challenge to the business sector, highlighting the importance of equity in access and benefit sharing supports efforts of regulatory and social processes to increase equity and deter over-consolidation of harvesting within the industry participants. These efforts often encounter opposition from some or all of the industry corporate sector. Target 15 can be used to counter such opposition, by noting it is actually the responsibility of industry to show “*compliance with access and benefit-sharing regulations and measures, as applicable*”.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

The threats from aggressive applications of Target 15 are real but usually localized.

### **Regular monitoring and assessment**

The unconditional call for “Regular monitoring and assessment” could be used to discredit fisheries where “monitoring” (in the sense applied in large-scale commercial fisheries”) is neither cost effective, nor necessary, due to cultural practices that provide feedback in ways other than just quantifying catch, effort, and similar factors. These customary small-scale fisheries may be well managed (see Targets 5, 9 and 22) without the cost and complexity of such top-down controls.

### **Global consensus on sustainability standards**

The lack of global consensus on standards of sustainability that are discussed in Targets 5 and 9 can emerge under Target 15 as well, even though explicitly criterion-based approaches, such as even the better certification regimes, can be criticized as insufficiently “green” in the eyes of fishery critics. Despite decades of effort there is not yet consensus on what truly comprises a sustainable fishery, allowing the challenges discussed under those sustainability Targets to spill over under Target 15 as challenges to the operations of fisheries as a responsible business.

### **Ensuring sustainable patterns of production**

A less likely but potentially serious concern arises from the use of the term “actions to ensure sustainable patterns of production”. This phrase could become a threat, simply by requiring reporting on possible biodiversity implications of every aspect of the fishery supply chain, from harvesting to marketing. The funding and institutional infrastructure needed to ensure sustainability of just the harvesting and initial processing stages of most fisheries is substantial for many fisheries, and fisheries authorities rarely extend their operations beyond the processing site. Requiring them to track all aspects of the “patterns of

production’ including secondary processing, transportation to markets, and consumer outreach, is likely to greatly increase costs, while adding little to the sustainability of the production from fisheries.

### **Benefit-sharing regulations**

A similar challenge could arise from the unqualified reference to access and benefit-sharing regulations and measures. Fisheries policy and management have long struggled with developing and implementing approaches for equitable access to and benefit sharing of fishery harvesting. Many approaches have been tried, with mixtures of success and lack of success when simply changing from one source of inequity to even more intractable ones. However, one of the important lessons learned from these efforts is that one size does not fit all cases, with equity itself being an extremely challenging concept to define equitably. There are many reasons why some users and uses of fishery resources may be allocated in ways that do not provide equal access by all interested persons or corporations; including respecting the call for special priority of Indigenous Peoples and Local Communities – a phrase found in eight of the 23 GBF Targets. An inclusive and comprehensive consultation process before adopting access and allocation schemes could certainly be called for as a best practice for the business sector and regulators of fisheries. However, calling for any universal standard for the outcome would threaten fisheries where effort regulation has been difficult to implement but is essential for sustainable fisheries.

## **5. SYNTHESIS**

The primary intent of Target 15 was to promote greater transparency and accountability of businesses and financial institutions that often have income derived from uses of biodiversity and/or make investment decisions that have significant implications for biodiversity, and that currently are often far from public awareness and examination. The fishing sector has always had its dependence on biodiversity acknowledged and accounted for in financial planning and accounting. There is wide scope to improve the transparency and accountability for the business aspects of fisheries and their impacts on biodiversity. However, there is nothing fundamentally new to fisheries in Target 15, except the expectation to expand monitoring activities to the whole value chain and there are many known and tested tools for making further progress on existing and new commitments to improve performance on these themes, including with a stronger involvement of the private sector.

## TARGET 16 – SUSTAINABLE CONSUMPTION CHOICES

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE THAT PEOPLE ARE ENCOURAGED AND ENABLED TO MAKE SUSTAINABLE CONSUMPTION CHOICES INCLUDING BY ESTABLISHING SUPPORTIVE POLICY, LEGISLATIVE OR REGULATORY FRAMEWORKS, IMPROVING EDUCATION AND ACCESS TO RELEVANT AND ACCURATE INFORMATION AND ALTERNATIVES, AND BY 2030, REDUCE THE GLOBAL FOOTPRINT OF CONSUMPTION IN AN EQUITABLE MANNER, INCLUDING THROUGH HALVING GLOBAL FOOD WASTE, SIGNIFICANTLY REDUCING OVERCONSUMPTION AND SUBSTANTIALLY REDUCING WASTE GENERATION, IN ORDER FOR ALL PEOPLE TO LIVE WELL IN HARMONY WITH MOTHER EARTH.

Target 16 focuses on improving the choices made by the public, to favour choices supporting positive biodiversity outcomes when possible. Consumer demand can be a powerful driver of improved sustainability, and given all human consumers require food and nutrition, it could be a powerful factor in progress towards the outcomes desired by the Target and the GBF. Nevertheless, almost all the actions called for or suggested by Target 16 are rarely within the mandate of fisheries management authorities, nor are they traditionally undertaken by the fishing industry. In addition, they have not been activities in the career streams of most IUCN/CEM/FEG experts, where the focus has been on the bio-ecological aspects of harvesting and socio-economic aspects of the harvesting sector, not the marketing sector.

These context factors do not diminish the relevance of Target 16 to fisheries, considered holistically. Rather, they limit the ability of this review to look in depth at specific practices that advance Target 16. For most aspects of Target 16, this review briefly highlights the relevance of the various components of Target 16 to fisheries, and the partnerships that fisheries agencies and experts should build. It is those partners who will have the detailed knowledge and experience in strategies and measures that can advance the objectives of Target 16. The payoff from building and maintaining such partnerships can be high, as a more informed public, with greater awareness and concern for sustainable fish products, can be an effective ally in further reducing and eliminating unsustainable practices in fisheries.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Encouraged and enabled to make sustainable consumption choices**

This expression is a call that would be welcomed by all responsible fisheries policy makers, managers, and industry members and by the public at large. Where unsustainable practices or aspects IUU fishing seem to persist despite efforts of the fishery regulatory bodies, loss of consumer acceptance for the products from such fisheries would be a support for their institutional efforts.

#### **Establishing supportive policy, legislative or regulatory frameworks**

This is also a call that will be welcomed by responsible fisheries jurisdictions and fishery participants. There are a range of policies, legislation and regulations intended to deter or prevent unsustainable practices and, in many countries, to keep products from IUU fisheries from entering national supply chains. However, cases where policies, legislation and regulations are directed at promoting wise consumer choices are rare.

This may be an area where the entire food services sector might work together to explore possibilities for strengthening the legal and regulatory frameworks that are intended to influence consumer choice and

demand. Health care has made long strides in requiring consumer warnings on products that could be harmful if misused or used by especially vulnerable individuals, as well as information about healthy products. Possibly, creative thinking by legislators and other experts could identify some form of information that could be required on fish products, informing the consumer regarding both the health benefits and the sustainability of each food product available.

#### **Improving education and access to relevant and accurate information and alternatives**

Here is an area where fisheries jurisdictions and the industry have been active and could increase their efforts. For fisheries, in fact, progress on this component of Target 16 could be especially straightforward, because for many of the agencies that conduct stock assessments and provide harvest advice, those assessments and advice are available on-line. Moreover, an increasing number of agencies are providing summaries of the scientific results supported by figures and graphs (infographics), that are designed for a broad public audience rather than just technical experts. More can be done in this area, but the value of these actions is well-recognized, as are tools for effective actions.

#### **Reduce the global footprint of consumption in an equitable manner**

From a fishery perspective, it is consumption of food and healthy nutrition that imposes a footprint on biodiversity. All the measures discussed under Targets 5 and 9 can reduce the footprint of fish harvests on aquatic ecosystems. In the larger context of meeting human food security needs, the benefits of fish as a particularly healthy food choice, compared to other sources of animal protein, are well established. Moreover, evidence is being assembled comparing the carbon footprint of wild-capture and culture-reared fish to the footprint of other types of animals, and results are promising. In addition, the land transformation and chemical interventions involved in intensifying crop and meat production are additions to the footprint of human food demands that are not required by sustainable fisheries. In a world where more than 10% of people still suffer hunger daily, reducing food consumption is not a step towards improved well-being, but replacing dietary meat and poultry with sustainably caught fish can contribute to meeting the needs for improved human food security while improving biodiversity outcomes. Moreover, because fish are already important in the diets of many lower-income families, communities, and cultures, improving the supply and accessibility of sustainably caught or reared fish can increase the equity in how the human food requirements place a footprint on biodiversity.

#### **Halving global food waste**

There is waste in all food production systems, including fisheries. However, policies at reducing or preventing discarding of fish are being adopted by an increasing number of authorities, and processes to make use of byproducts and offal from fisheries are being improved and uses are expanding. This is a direction fisheries have already embraced, and Target 16 reinforces the value of those efforts.

#### **Significantly reducing overconsumption and substantially reducing waste generation**

The waste issue has been discussed just above. As for over-consumption, there is nothing special about fisheries relative to that aspect of Target 16. For the part of the world where over-consumption of food is common, switching from meat or poultry to fish does not in itself decrease the potential to over-consume, if the will to do so is still present. However, if consumers choose to try to reduce overall footprint of their consumption, sustainably caught fish can be an important part of that dietary change.

### **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

#### **Footprint of human food sources**

One opportunity presented by Target 16 is a coordinated study of the total biodiversity footprint of different source of human foods. Substantial information is available, but much of it is scattered both

thematically and geographically. Thematically, different types of food are produced with quite different types of footprints on nature, from direct harvest of wild fish to permanent land transformation and water diversions to support intensive crop and livestock production. Geographically, almost all sources of food, including fisheries, impose different types and intensities of footprints on biodiversity, depending on local conditions and methods used in food production. Together, these have made global and regional comparisons of sustainability of different food sources difficult. However, a more complete picture of how greatly other food sources also impact biodiversity in the long term can help to remove the stigma that some interest groups impose on fisheries due to bycatches, benthic impacts of gears and other factors.

### **Factors affecting consumer choices**

Target 16 also provides additional justifications for studies of factors affecting consumer choices among food sources. These are treated in the text on Target 15, on the role business in biodiversity conservation, but are equally relevant here. It is well established that consumer demand can have important roles in shaping the supply chain intended to meet the consumer demand, and the growth of eco-certification systems shows that general pattern can apply in fisheries. What Target 16 adds is additional justification for studying how consumer choice among foods can serve as a biodiversity conservation strategy as well as simply an economic and/or health strategy -where fisheries can already often be shown to be a best choice.

### **Waste reduction**

The call for reduction in waste may provide the most valuable opportunities for fisheries, relative the intent of Target 16. There is substantial scope for improvements to food distribution networks, elimination of discarding, and better technologies for improved use of total catches. All of these opportunities combine to be a win-win-win for fisheries, for human food security, and for biodiversity. Fisheries could obtain more product to introduce into supply changes with less waste in harvesting and processing; people get more high-quality nutrition from the footprint the fishery imposes on Nature. and biodiversity benefits could increase from similar or even increased proportion of food demand being met by fisheries that are having lower and lower impact per unit of food produced.

### **Equity**

The inclusion of “in an equitable manner” in relation to the reduction in consumption in Target 16 is particularly welcome, even if it is not a new concept in fisheries. With 10% of the human population suffering hunger daily, yet nearly 40% considered to be overweight, inequity in distribution of all food sources is a pressing concern. Fish already are nearly four times more strongly represented in the diets of the poor than the wealthy, making it a primary candidate for increasing the equity of supply or access to healthy food from sustainable sources.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

There are few direct threats to fisheries from the provisions in Target 16.

### **Lack of full consensus on sustainable use**

The lack of full consensus on what does and does not constitute sustainable uses of wild species is always a threat to fisheries, because case histories of historical and even some current unsustainable practices can be presented selectively as evidence for how unsustainable fisheries can be, and evidence that critics can generalize to “fisheries” without qualification. Hopefully, the accumulating evidence of the importance of fisheries to food security can be combined with the evidence of overall improvement in the proportion of fisheries that are sustainably used, to counter such misrepresentations, using, for example,

communication outlets such as the FAO SOFIA. Success in those efforts to counter misinformation should benefit progress in Target 16 as well as many other Targets.

### **Growth in consumer demand**

A more indirect threat would come from substantial growth in consumer demand for sustainable fish as part of diets, for both health and environmental reasons. This growth in itself could be a positive outcome of the Target 16. However, if those more completely educated and motivated consumers are in the developed world there is a concomitant risk that fish could be directed away from traditional consumers in communities already faced with threats of poverty and hunger. Target 16 has a clear admonition to take the necessary actions “in an equitable manner”, which on paper clearly calls for avoiding such redirection of products from fisheries (and aquaculture). However, equity has been a global policy priority since at least the UNCED Agreement in 1992, yet it continues to be difficult to find in economies in all regions and at all scales. Vigilance and commitment are needed to keep the progress on Target 16 from amplifying rather than reducing inequities in opportunities to fish, in access to the products from fishing, and the distribution of benefits from fish and fisheries.

### **Information processes and social media**

One additional possible threat arises not the phrasing of the Target 16, but from the ongoing changes in how the general population, including the consumer community that is the audience for Target 16, gets information. The science and regulatory expert communities have taken substantial efforts to make the results of their assessments, research, and regulatory actions available on-line, with summaries designed to be accessible to educated non-experts. These make the information necessary for an informed consumer decisions readily available, which is a welcome development. However, the great influence of social media and other weakly governed sources of information on public opinion is well documented. Many institutional sources of information require extended processes for getting information drafted in non-partisan language, reviewed for accuracy and completeness, and approved at several levels, before it can be posted. These processes can be slow, and even when they do not change the science and knowledge content of the posted communications, they may introduce an institutional blandness to the final documents. Critics of fisheries, on the other hand, can post information quickly and with colour and passion in the writing, and with lack of regard for presenting a full and balanced picture of state of knowledge on an issue. This can result in consumers seeking information to more readily find, and be more easily attracted to and convinced, by sources that intentionally present selectively incomplete information in ways that are intended to convince the reader of highly partisan perspectives on complex issues. This can replace an unformed public who are not engaged on issues that are important to the future of both human and environmental well-being, with a mis-informed public willing to make consumer decisions based on a very distorted view of fisheries and fish as an unsustainable alternative.

## **5. SYNTHESIS**

Nothing in Target 16 brings new considerations into the challenges faced by fisheries. Informing the public on the importance of fish and fisheries to human well-being, and on the progress fisheries are making on sustainability is in everyone’s interest. However, it is a task where efforts need to be improved in content, clarity and accessibility, and where better integration of efforts along the entire value chain of fisheries are needed.

## TARGET 17 – BIODIVERSITY AND BENEFITS FROM BIOTECHNOLOGY

### 1. BRIEF INTRODUCTION TO THE TARGET

ESTABLISH, STRENGTHEN CAPACITY FOR, AND IMPLEMENT IN ALL COUNTRIES IN BIOSAFETY MEASURES AS SET OUT IN ARTICLE 8(G) OF THE CONVENTION ON BIOLOGICAL DIVERSITY AND MEASURES FOR THE HANDLING OF BIOTECHNOLOGY AND DISTRIBUTION OF ITS BENEFITS AS SET OUT IN ARTICLE 19 OF THE CONVENTION.

This Target addressed biotechnology, specifically in the context of Article 8(g) of the Convention. That Article states " (g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health."

Currently no fish whose genome or biological processes have been modified by biotechnology are taken by capture fisheries for wild fish or crustaceans. Biotechnology is being explored by aquaculture interests, but to this point such research is centred in a small number of countries where both science capacity and fish and aquatic invertebrate culture are well developed. Aquaculture has clear biosafety protocols in place already. However, these have been designed to manage the risks of disease, parasite and pathogen transfer for wild to culture facilities, or culture facilities to the wild (see [here](#)).

Global guidance Biosecurity in fish culture and research is available from FAO in their extensive [Biosafety Resource Book](#). As biotechnologies used in fish culture develop further, the Biosafety Resource Book will be updated, but there is little information on how well expansions of the Resource Book will keep up with developments in biotechnology. Several countries also have detailed national standards and regulations for biosafety in fish and aquatic invertebrate culture, but these also are primarily fully developed countries (for example, Canada, Norway, and Australia).

Although guidelines for responsible practices seem widespread and readily available, FEG has not found any comprehensive review of how closely national standards and regulations follow best practices as identified in the FAO Biosafety Resource Book, nor on the uptake and full compliance of commercial production and research facilities with national standards and regulations. In addition, we could find no guidance or regulations at national level about programs to ensure equitable sharing of benefits from biotechnology at national or global scales. Given the many complexities involved in implementing Article 10 of the [Convention](#), such protocols should be developed for all biotechnology research and development in a country. However, focus to this point has been on biotechnology in agriculture, health and medicine, and industrial applications, with aquaculture operations a secondary consideration.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

**Establish, strengthen capacity for, and implement [...] biosafety measures as set out in Article 8(g) of the Convention**

There is nothing particularly relevant to capture fisheries in this aspect of the Target. It is very relevant to aquaculture production but is already recognized as an essential part of a well-regulated biotechnology industry. The Target stresses that all countries need to remain vigilant that their regulatory frameworks keep pace with developments in the field, and that compliance in operations is high. However, neither of



those points are news to the national jurisdictions responsible for regulating aquaculture. It may a challenge to keep pace with a rapidly developing industry, but that is true for biotechnology overall, and not a unique challenge for aquaculture.

### **Measures for the handling of biotechnology**

The general considerations here for fisheries and aquaculture are no different from the material covered just above about biosafety measures.

### **Distribution of its benefits as set out in Article 19 of the Convention**

Yet again, there are no unique considerations for aquaculture or fisheries in this aspect of the Target. Article 19 of the Convention has been complex and difficult to implement in a way that satisfies all perspectives. However, the major debates are rarely focused on biotechnology applied specifically to fish or aquatic invertebrates, and it is likely that any national strategies and international Agreements developed for other higher priority concerns would include aquaculture as just one of several setting where biotechnology research and development are underway.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

Target 17 provides justification for countries to advance their efforts to ensure that regulatory frameworks for managing biotechnology keep abreast with, and ideally ahead of, developments in the private sector. However major regulatory advances are likely to be needed more urgently in fields of agriculture and health care, where public and academic scrutiny is also often higher than it is in fisheries. Full implementation of the intent of Target 17 is essential to protect aquatic biodiversity, but that is also true for terrestrial biodiversity, where even more avenues of biotechnological development are likely to be occurring. Therefore, if fisheries authorities and experts in the area of biotechnology simply stay up to speed on developments elsewhere, no additional special opportunities are seen for fisheries and aquaculture.

Building on the above point, it is possible that a new specialization could be developed, designed to test the applicability of regulations developed in other fields for application in the aquatic ecosystems where fish and invertebrate aquaculture occur. The extrapolation of technological development from other fields to aquaculture applications occur, often with modifications to accommodate the aquatic context for applying the technology. With some aspects of connectivity and transport in aquatics systems very different from those in terrestrial systems, the effectiveness of biosafety protocols from terrestrial to marine and freshwater systems needs careful evaluation. Having work on regulatory measures take on such evaluations, as well as explore regulatory tools intentionally designed for aquatic ecosystems, are important opportunities and needs.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Inappropriate biotechnology regulations**

If biotechnology continues to be led by developments in fields other than aquaculture, some measures that may be developed to protect terrestrial biodiversity from biotechnological advances on land may be unworkable, ineffective, or more costly in aquatic ecosystems. Therefore, if aquaculture fails to keep abreast of developments in both biotechnology broadly, and in regulatory measures and frameworks in

other fields, it could find itself burdened with regulations that are costly, impede progress on safe biotechnologies for aquatic species and ecosystems, and not protect aquatic biodiversity.

### **Opposition to biotechnology**

In some parts of human society, including perspectives concerned specifically about aquatic ecosystems, there is a fundamental unease and opposition to biotechnology. This opposition can spill over to biotechnology for aquatic species and be an impediment to responsible research and development. However, this threat does not arise from Target 17, nor apply specifically to aquaculture. It is a concern that needs to be recognized and addressed, but addressing these concerns is the root of having Target 17 included in the GBF, and failure of States to make progress on the intent of Target 17 for all types of species, biodiversity, and their many uses would be a setback for aquaculture and for the protection of aquatic ecosystems.

### **5. SYNTHESIS**

More than most other Targets, the concerns addressed by Target 17 are generic concerns about the interaction of People and Nature, with few special implications for application in aquatic systems. In fact, from a fisheries perspective Target 17 is unlikely to be a substantive concern. It is a major consideration in aquaculture research and operations, but one that is already well recognized, and the actions called for usually are already part of the mandate of responsible regulatory authorities.

## TARGET 18 – SUBSIDIES

### 1. BRIEF INTRODUCTION TO THE TARGET

IDENTIFY BY 2025, AND ELIMINATE, PHASE OUT OR REFORM INCENTIVES, INCLUDING SUBSIDIES, HARMFUL FOR BIODIVERSITY, IN A PROPORTIONATE, JUST, FAIR, EFFECTIVE AND EQUITABLE WAY, WHILE SUBSTANTIALLY AND PROGRESSIVELY REDUCING THEM BY AT LEAST 500 BILLION UNITED STATES DOLLARS PER YEAR BY 2030, STARTING WITH THE MOST HARMFUL INCENTIVES, AND SCALE UP POSITIVE INCENTIVES FOR THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY.

There has been a massive global discussion of subsidies in fisheries, particularly within the World Trade Organization (WTO), leading to the [WTO Agreement on Fisheries Subsidies](#), which was “adopted at the 12th Ministerial Conference (MC12) on 17 June 2022. The WTO Agreement states that this “marks a major step forward for ocean sustainability by prohibiting harmful fisheries subsidies, which are a key factor in the widespread depletion of the world’s fish stocks. The Agreement represents a historic achievement for the membership as it is the first WTO agreement to focus on the environment, the first broad, binding, multilateral agreement on ocean sustainability, and only the second agreement reached at the WTO since its inception”. From a fishery perspective, that debate on subsidies, over the past many years, lies at the root of Target 18.

However, this Target importantly is expressed in terms of “incentives”, rather than focusing on solely subsidies *per se*. The language refers to “incentives, including subsidies”, showing that subsidies are included within the realm of incentives. Indeed, the broader language of Target 18, on incentives, is important since subsidies are generally economic and/or financial in nature (and therefore constitute economic or financial incentives) whereas incentives more broadly include not only those of an economic/financial nature, but also those that are socio-cultural, moral and/or institutional incentives. This is a crucial broadening of the discussion, and the avenues for pursuing the Target.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity**

First, it is crucial to note that Target 18 only focuses on incentives (including subsidies) that are “harmful for biodiversity”. A great deal of work has gone into identifying harmful (or “bad”) subsidies in fisheries, which generally covers harmful economic and/or financial incentives, often related to increasing or maintaining fishing effort and capacity above levels that can be supported by the resources being harvested. That work can be usefully applied to this aspect of Target 18. More of a challenge is to identify socio-cultural, moral and/or institutional incentives that may be a concern for biodiversity sustainability.

#### **In a proportionate, just, fair, effective, and equitable way**

These adjectives, describing the manner by which harmful incentives/subsidies are to be eliminated, phased out or reformed, will undoubtedly pose challenges in terms of how they are interpreted generally and in specific cases. In fisheries, the interpretation of these standards will have to take into account the specific country and cultures involved, its social and economic situation, as well as the type of fishery (small-scale versus large-scale, temperate versus tropical, etc.).

### **Substantially and progressively reducing them by at least 500 billion United States dollars per year by 2030, starting with the most harmful incentives**

It is remarkable to place a quantitative annual target on reducing incentives/subsidies (of \$500 billion each year). There is no indication, however, of how that is to be distributed across all human activities and economic sectors, throughout the world. The language “starting with the most harmful incentives” is unclear with regard to whether it implies starting with the “most harmful incentives” viewed globally and regardless of sector or starting with the “most harmful incentive” within each country and each sector.

### **Scale up positive incentives for the conservation and sustainable use of biodiversity**

This language is added at the end of Target 18 but may be seen as on an equal footing with the lengthier wording about eliminating, phasing out or reforming harmful incentives. With fisheries having a long history of paying attention to conservation and sustainable use (often greater attention than most other sectors based on consumptive uses of biodiversity), this language represents a great opportunity, as discussed below.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Greater support for good subsidies**

Fisheries can benefit from greater support for what are categorized as ‘good’ or positive subsidies and incentives, such as those that produce better fisher organizations, better knowledge, and better management practices, as well as measures to maintain viability of communities and cultures dependent on fisheries, and the associated stewardship functions they perform, and support for measures/incentives to fisheries and vulnerable fishing communities to adapt to climate change or to reduce impacts of climate change.

### **Opportunity to highlight subsidy-free situations**

This Target presents a particular opportunity to those parts of the fishery that receive little in the form of harmful incentives, as those sub-sectors can highlight their relatively subsidy-free situation, and greater contribution to fishery and ecosystem sustainability. Conversely, there is opportunity to call attention to fishery components that receive most of the harmful capacity-increasing subsidies, e.g., boatbuilding and fuel subsidies that go largely to industrial fishing. The Target could present an opportunity for discussions of strategies to help those sectors adapt to the changing context and requirements of fisheries, so the harmful incentives can be removed, and the components can adapt without serious social or economic disruption.

### **Needs for implementation**

- a) Clarity is needed in the accepted criteria for which types of subsidies and incentives are harmful specifically to biodiversity (cf. WTO Agreement on subsidies);
- b) Strategies can assist in transitioning fisheries now receiving harmful (and perverse) subsidies and incentives away from them, in ways that are not disruptive for harvesting, processing or markets;
- c) There can be a showcasing of progress to date in removing some types of subsidies in the fishery sector;
- d) It is important to understand and highlight the extent of fisheries subsidies and incentives compared with those in agriculture, energy, etc.;
- e) Consideration can be given to treating as positive subsidies and incentives those that support the transition from fossil fuels to sustainable energy solutions, e.g., to help transform fleets dependent

upon fossil fuels to instead operate on carbon-free technologies (perhaps, e.g., green hydrogen fuel-cells).

- f) In the implementation of this Target, it is important that WTO decisions are followed, regarding positive and negative subsidies, notably to avoid attacks on positive subsidies within fisheries.

#### **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Without clear criteria for what are harmful incentives, many tools used in fisheries management may be vulnerable to being labelled as harmful incentives and subsidies. There is potential for erroneous arguments to be made that provisions by States to maintain viability of communities and cultures dependent on fisheries are ‘capacity increasing’ (by the nature of maintaining community-based fishing) and therefore are negative subsidies to be removed.

Where there has been slow progress in fisheries to remove harmful subsidies, this can lead to being vulnerable to accusations of a lack of will to act. Such accusations may be legitimate in some cases, but in others the pace of progress may reflect the time required to implement programs to mitigate the social and economic consequences of removing the harmful incentives, and precipitous actions could be highly disruptive.

#### **5. SYNTHESIS**

Fisheries has been addressing the need to reduce harmful subsidies and incentives for several decades, with partial but far from complete success. In that context, nothing in Target 18 poses new types of challenges to fisheries. However, the combination of an ambitious target for overall reduction of subsidies in all forms of biodiversity-impacting sectors, and the reality that with all the efforts already taken to address harmful subsidies, means there are few “low-hanging fruit” left. This suggests that the remaining harmful subsidies and incentives may be hard to address in fisheries.

The other major challenge fisheries may face with Target 18 is that its implementation will depend on how some key concepts are interpreted. One is the distinction between what are “good” and “harmful” subsidies and incentives. Fisheries struggled with this distinction for decades, and the landmark WTO Agreement in 2022 substantially clarified the differences for fisheries. If Target 18 leads to proposals for a cross-sectoral initiative for all Parties and sectors implementing the GBF, fisheries will need to engage fully in such initiatives, to ensure sectoral progress remains intact.

In addition, Target 18 explicitly broadens concerns to all forms of incentives, not just financial incentives (subsidies). There will likely need to be many initiatives taken to delineate boundaries on a wide range of social, moral and other types of incentives. Fisheries needs to stay fully engaged throughout their efforts and act swiftly to ensure such efforts to delineate “boundaries” between other forms of “good” and “harmful” incentives are conducted by impartial and expert processes.

## TARGET 19 – FINANCIAL RESOURCES MOBILIZED

### 1. BRIEF INTRODUCTION TO THE TARGET

SUBSTANTIALLY AND PROGRESSIVELY INCREASE THE LEVEL OF FINANCIAL RESOURCES FROM ALL SOURCES, IN AN EFFECTIVE, TIMELY AND EASILY ACCESSIBLE MANNER, INCLUDING DOMESTIC, INTERNATIONAL, PUBLIC AND PRIVATE RESOURCES, IN ACCORDANCE WITH ARTICLE 20 OF THE CONVENTION, TO IMPLEMENT NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS, MOBILIZING AT LEAST \$200 BILLION PER YEAR BY 2030, INCLUDING BY:

- (A) INCREASING TOTAL BIODIVERSITY RELATED INTERNATIONAL FINANCIAL RESOURCES FROM DEVELOPED COUNTRIES, INCLUDING OFFICIAL DEVELOPMENT ASSISTANCE, AND FROM COUNTRIES THAT VOLUNTARILY ASSUME OBLIGATIONS OF DEVELOPED COUNTRY PARTIES, TO DEVELOPING COUNTRIES, IN PARTICULAR THE LEAST DEVELOPED COUNTRIES AND SMALL ISLAND DEVELOPING STATES, AS WELL AS COUNTRIES WITH ECONOMIES IN TRANSITION, TO AT LEAST \$20 BILLION PER YEAR BY 2025, AND TO AT LEAST \$30 BILLION PER YEAR BY 2030;
- (B) SIGNIFICANTLY INCREASING DOMESTIC RESOURCE MOBILIZATION, FACILITATED BY THE PREPARATION AND IMPLEMENTATION OF NATIONAL BIODIVERSITY FINANCE PLANS OR SIMILAR INSTRUMENTS ACCORDING TO NATIONAL NEEDS, PRIORITIES AND CIRCUMSTANCES;
- (C) LEVERAGING PRIVATE FINANCE, PROMOTING BLENDED FINANCE, IMPLEMENTING STRATEGIES FOR RAISING NEW AND ADDITIONAL RESOURCES, AND ENCOURAGING THE PRIVATE SECTOR TO INVEST IN BIODIVERSITY, INCLUDING THROUGH IMPACT FUNDS AND OTHER INSTRUMENTS;
- (D) STIMULATING INNOVATIVE SCHEMES SUCH AS PAYMENT FOR ECOSYSTEM SERVICES, GREEN BONDS, BIODIVERSITY OFFSETS AND CREDITS, AND BENEFIT-SHARING MECHANISMS, WITH ENVIRONMENTAL AND SOCIAL SAFEGUARDS;
- (E) OPTIMIZING CO-BENEFITS AND SYNERGIES OF FINANCE TARGETING THE BIODIVERSITY AND CLIMATE CRISES;
- (F) ENHANCING THE ROLE OF COLLECTIVE ACTIONS, INCLUDING BY INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, MOTHER EARTH CENTRIC ACTIONS AND NON-MARKET-BASED APPROACHES INCLUDING COMMUNITY BASED NATURAL RESOURCE MANAGEMENT AND CIVIL SOCIETY COOPERATION AND SOLIDARITY AIMED AT THE CONSERVATION OF BIODIVERSITY;
- (G) ENHANCING THE EFFECTIVENESS, EFFICIENCY AND TRANSPARENCY OF RESOURCE PROVISION AND USE;

Target 19 focused on the scale of financial resources that currently are expected to be needed to deliver the actions and outcomes called for in the GBF. The ambition captured by numbers as large as \$200 billion per year by the end of this decade are far larger than any preceding financial commitments by Parties, but the debates during the CBD COP were about how realistic the amounts requested actually are, and not about whether resources of that scale are necessary to deliver the full GBF. The Target does identify in general terms the sources expected to contribute to the funding pool, and the types of States that are expected to be able to benefit from the funding. However, it does not discuss at all how the resources mobilized should be distributed among eligible Parties or allocated across the wide range of biodiversity-oriented projects on terrestrial, freshwater, coastal and oceanic systems.

The lack of provisions on how mobilized resources should be apportioned among ocean, freshwater and land-based initiatives means that detailed analysis of many of the provisions of the chapeau and several

sub-paragraphs of Target 19 would serve little purpose. However, that lack of guidance on apportionment of funding also means that funding needs for fishery and more general aquatic initiatives will always be in competition for mobilized resources with initiatives targeted at terrestrial biodiversity and habitats. The track record of success in such competitions for resources has often been disappointing for fisheries. Fisheries Ministries, participants in fisheries of all scales and positions along the product chain, and aquatic public interest groups all have to work together to ensure the ocean, coastal and freshwater biodiversity and uses of biodiversity obtain a meaningful portion of the mobilized resources. This will require both increased public awareness of the importance of aquatic biodiversity and its uses (see Target 16 and others) and effective outreach to donors to ensure they are aware of the needs of aquatic as well as land-based initiatives.

## **2. ANALYSIS OF THE TARGET CONTENT**

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

### **To implement national biodiversity strategies and action plans**

The national biodiversity strategies and action plans (NBSAPS) have been a central tool for designing the implementation of CBD Targets and strategies for decades, so this Target poses no new responsibilities on Parties. However, in many countries, preparation of NBSAPS has been led by Environment Ministries, and when fisheries are managed by other Ministries, there has been disproportionately low engagement of fisheries experts and authorities in preparation of the NBSAPS. This provision makes explicit the importance that Ministries accountable for fisheries are fully engaged in all aspects of preparing the NBSAPS and annual progress reports.

### **In particular the least developed countries and small island developing states**

Fisheries, especially but not exclusively small-scale fisheries, are very important to the cultures, economies and well-being of least developed countries and small island developing states. This provision of Target 19 increases the leverage fisheries can have in accessing the mobilized global resources if they are well-prepared and well-positioned to present their needs and expected benefits.

### **Leveraging private finance, [...] encouraging the private sector to invest in biodiversity, including through impact funds**

For fisheries, the “private sector” includes harvesters, processors and marketers of fish and fish products. Only in relatively few countries will the fishing sector have financial sources available on scales at which substantial “investments in biodiversity” will be feasible. Moreover, instruments such as “impact funds” are not familiar tools in fisheries. Fisheries will have to gain both greater familiarity with the investment instruments and ability to manage expectations about resources they can make available to mobilize. These challenges are tractable but will be a new demand on many players in larger scale fishing sector, and unrealistic for many of the participants in most commercial and all small-scale fisheries.

### **Payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms**

Almost none of the financial instruments in this list are familiar tools on fisheries. Given fisheries is all based on harvesting the product of an ecosystem service, and do cause changes (sustainable or otherwise) to biodiversity features, these “innovative schemes” could be proposed for almost any fishery, imposing a new set of costs on fisheries to operate. This is another provision of Target 19 where both fisheries Ministries and the fishing sector at all scales need to be vigilant and fully engaged in how the provision is implemented at the various scales. This may be new and difficult waters for fisheries to navigate,

### **Finance targeting the biodiversity and climate crises**

The linkages among climate change, fisheries, and biodiversity are now well established, even if incompletely known. Needs for more climate resilient fishing strategies for fisheries to adapt to the climate-driven changes in stock ranges and productivity, the comparative carbon footprint of fisheries vs other food sources, and other climate-fishery relationships are already part of dialogue on fisheries at all scales. This provision brings the biodiversity aspects of those changes more prominently into those ongoing discussions and plans.

### **Enhancing the role of collective actions, including by indigenous peoples and local communities, mother earth centric actions and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity**

This is another provision where fisheries may be on the leading edge. The UN International Year of Small-Scale Fisheries in 2021 recognized both their importance to communities and their economies, and the potential of small-scale fisheries to be a biodiversity-friendly approach to using living aquatic resources. Even if “mother-earth centric” is not a common phrase in dialogue on fisheries of all scales, the commitment to ecosystem approaches to fisheries (see Targets 5, 9 and others) has been in place for more than a quarter century, and the benefits of community-based management are well established. This provision of the Target may place fisheries, particularly small-scale fisheries, in the spotlight as a source of lessons for other sectors, rather in a position of having to catch up to other uses of natural resources.

### **Enhancing the effectiveness, efficiency and transparency of resource provision and use**

The fisheries sector has long been aware of the importance of effective and efficient uses of fishery resources, and the dependence of the productivity of those resources on healthy ecosystems and sustainability of fishing. Transparency perhaps has a spottier record in fisheries, but in most fisheries, aspects such as quota setting and allocation of catch shares have processes for stakeholder and expert engagement in provision of information and development of options, even if final decisions may not be fully transparent. Moreover, most fisheries Ministries and RFMOs are ensuring greater inclusiveness in participation. Hence this is yet another provision of Target 19 that brings little new to fisheries other than a need to accelerate current efforts in these directions.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

In all the provision of Target 19, the main opportunities are consequences of the call for very large increases in funding devoted to research and management to enhance biodiversity and reduce pressures and impacts. The many ways these opportunities may arise are covered under the other Targets, particularly those associated with Goals A and B<sup>2</sup>. The Target focuses primarily on sources of funding and other resources, and the amounts considered appropriate, with little detail on the modalities for accessing increases in financial resources. In fact, subparagraph (b) of the Target highlights the NBSAPs as a primarily strategy for laying out the natures and amounts of how the resources mobilized would be used. This clearly recognizes the national level planning and decision-making responsibility about how the mobilized resources will be used to benefit biodiversity. Fisheries can bring forward many types of projects that could use the mobilized resources for the intended uses, particularly in light of subparagraphs e, f, and g, which respectively highlight the importance of:

---

<sup>2</sup> Goal A refers to integrity, connectivity, and resilience of all ecosystems; extinction of known threatened species; and genetic diversity. Goal B refers to nature’s contributions to people and ecosystem functions and services.



### **Co-benefits and synergies of actions to deal with challenges in biodiversity and climate change**

The links between sustainable and resilient fisheries and climate change are well established (See Target 8), prepositioning fisheries to take advantage of these mobilized resources to accelerate projects it already is trying to advance.

#### **Enhancing the role of collective actions and non-market-based approaches**

Again, fisheries have made substantial progress in developing collective actions among harvesters, processors, and supply-chain to make fisheries more efficient and sustainable, and to recognize how much work the industry itself is undertaking, often but far from always in collaboration with the regulatory authorities on local, national, and regional scales. Both gaining access to additional resources and gaining greater recognition for existing and new collective and community-based actions to promote sustainability and equity in fisheries can accelerate ongoing programs and develop them more widely.

#### **Enhancing the effectiveness, efficiency, and transparency of resource provision**

Anything that simplifies the often-labyrinthine processes by which fisheries on any scale can access support to improve their operations and assist with the costs of changing gears and fishing and processing procedures, can only benefit the efforts of fisheries to reduce any negative impacts they are having on biodiversity.

#### **Prioritization of small-scale fisheries**

Target 19 also calls for special prioritization of small-scale fisheries, with subparagraph a) pointing directly to “developing countries, in particular the least developed countries and small island developing states,” where small-scale fisheries are often both the major fisheries in those areas and a vital part of livelihoods and nutrition for the communities and populations. In addition, subparagraph also highlights that the collective actions which are prioritized are very often ones by “Indigenous Peoples and Local Communities”. Moreover, the “non-market-based approaches, including community based natural resource management and civil society cooperation and solidarity” are particularly important candidates for the enhanced resources. Small-scale fisheries are exactly the fisheries typically meeting these standards and could benefit greatly from the recognition that this Target gives them. Moreover, these fisheries are particularly at risk of suffering adverse impacts on their human rights if conservation measures are implemented without appropriately involving and supporting these communities. Consequently, this explicit recognition of their importance in keeping fisheries in harmony with biodiversity could create substantial opportunity to better balance biodiversity conservation programs designed and controlled from outside the communities.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

Even though Target 19 is intended to increase financial support for enhancing conservation of biodiversity, and sustainable fisheries also contribute to conservation of biodiversity as well as improved human well-being, there are two types of possible threats to fisheries from possible misinterpretations of the Target.

#### **Inadequate share of mobilized resources**

The first type of threat is that fisheries and marine biodiversity in general do not get an appropriate share of mobilized resources. This could have a severe negative impact in some fisheries programs, if the donor community were to become so burdened with meeting Target 19 that even funding sources previously available directly to fisheries would be oriented to programs designed and sponsored as responses to Target 19. As noted above, at the national and subnational level, programs to mobilize and to allocate the

enhanced resources will be incorporated, and likely at least scoped, if not designed, under the umbrella of the NBSAPs. In many countries at all scales of economic development, NBSAPs are coordinated by environment Ministries, and these Ministries often are focused on terrestrial or terrestrial and freshwater ecosystems, with other Ministries to manage fisheries and marine issues, including marine and coastal (and sometimes freshwater) biodiversity. If the fishery interests within governments are not well connected to the development and implementation of the NBSAPs, there is always a risk that they will be marginalized in the initiatives to access and use the financial and other resources that are mobilized. This may not be direct harm to existing fisheries but is certainly a threat to them benefitting from Target 19.

This may apply at scales above the national level as well. Many potential global donors may be more familiar with challenges to terrestrial biodiversity, and many ENGOs and institutions active in the conservation of terrestrial biodiversity already may have longer and stronger relationships with potential donors. Fisheries may have to undertake a lot of education and relationship-building to increase the receptivity of such donors to projects where fisheries have a prominent and positive role. Even donors familiar with marine biodiversity challenges may already have strong linkages to ENGOs with a history of presenting fisheries as an enemy of biodiversity conservation, rather than promoting improvements to the sustainability of fisheries.

There is potential for serious threats if some of those ENGO-donor relationships are used to leverage substantial increases in their funding for programs that may at the least displace sustainable fisheries from productive areas of the oceans, and possibly lobby aggressively in high-profile settings for additional constraints on all fisheries so stringent that it is not feasible for them to operate.

### **Unusual financial instruments**

The other type of threat to biodiversity comes from the endorsement in Target 19 for a number of financial instruments aiming to make those using biodiversity to pay substantially more for the privilege of using a natural resource and require those damaging it to pay for the damage. In liberal economies, it is reasonable to expect those using any public sector resource to pay “appropriately” for the use, and those impacting the environment negatively to compensate “appropriately”. However, equitable standards for what “appropriate” payment and compensation should be have not been developed, and the whole issue of monetizing biodiversity is complex and debated. Significant movement towards making such payments and compensation could change fisheries in many ways, most of them likely to favour much greater centralization of fishing as a corporate enterprise, with a number of social implications.

There are provisions in Target 19 that call for “*private sector to invest in biodiversity, including through impact funds<sup>3</sup> and other instruments (§c)*”, and “*payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms*” (§d). These instruments have been introduced in some fisheries already but are not yet widespread. Some, like offsets, are highly controversial. The experience in many others is still limited and their impact on fishing costs, fish prices and affordability to different societal groups is unknown and potentially serious.

Initiatives under impact funding may not in themselves be fishery unfriendly, and fisheries could well be presented as producing initiatives with measurable and beneficial social and/or environmental impacts, in addition to a financial return. However, this type of private sector funding is unusual for fisheries and their investors at many if not all scales. Moreover, some major advocacy groups for initiatives like large protected areas where fisheries are excluded, can be very skilled at presenting their initiatives as providing

---

<sup>3</sup> Impact funds are funds intended to generate positive, measurable, social, and environmental impact alongside a financial return.

environmental benefits through minimizing all extractive uses, and providing social benefits and economic returns through ecotourism. Sustainable fisheries at any scale could be made to appear less attractive for such funding and could be easily displaced by such programs with impacts that are unfortunately rarely foreseen.

The endorsement of financial instruments like payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms could pose a threat of imposing significant costs on fisheries, including displacement, with cascading consequences on livelihoods, food security, fish prices and formerly healthy biodiversity. Many fisheries, particularly larger scale ones, already have to pay licence fees and other charges such as costs of observers on vessels and inspectors at landing sites. The concepts of “payment for ecosystem services” developed in terrestrial environments is still unfamiliar in fisheries, particularly in the ocean, but could have substantial impacts if implemented widely in fisheries.

With the limits to reasonable costs of those programs and many forms of benefit sharing still unbounded, particularly in aquatic settings, the magnitude of the potential risks emerging from these instruments is unknown but could be very large.

## **5. SYNTHESIS**

A Target that effectively increases the financial resources available to enhance the conservation and sustainable use of biodiversity is always welcome, and almost all aspects of fisheries could benefit from this Target to varying degrees. However, fisheries need to act swiftly and broadly to ensure that they are fully engaged in the dialogue and planning around the Target, particularly but not solely at the national and regional scales. Terrestrial biodiversity conservation interests and agencies may have histories that position them much better to act on programs under this Target. Potential donors and other sources for mobilized resources may also be more familiar with them and have better established relationships with terrestrial conservation bodies and interest groups, and with marine environmental interest groups with objectives that include greater restrictions on fisheries. Much of what is desirable for fisheries can be advanced by Target 19, but interests at least uninterested in fisheries, and often unreservedly critical of fisheries, may also be able to benefit from Target 19 to the detriment of fisheries, unless fisheries Ministries and industry participants are well-engaged in planning and initiatives under the Target.

## TARGET 20 – CAPACITY BUILDING

### 1. BRIEF INTRODUCTION TO THE TARGET

STRENGTHEN CAPACITY-BUILDING AND DEVELOPMENT, ACCESS TO AND TRANSFER OF TECHNOLOGY, AND PROMOTE DEVELOPMENT OF AND ACCESS TO INNOVATION AND TECHNICAL AND SCIENTIFIC COOPERATION, INCLUDING THROUGH SOUTH-SOUTH, NORTH-SOUTH AND TRIANGULAR COOPERATION, TO MEET THE NEEDS FOR EFFECTIVE IMPLEMENTATION, PARTICULARLY IN DEVELOPING COUNTRIES, FOSTERING JOINT TECHNOLOGY DEVELOPMENT AND JOINT SCIENTIFIC RESEARCH PROGRAMMES FOR THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AND STRENGTHENING SCIENTIFIC RESEARCH AND MONITORING CAPACITIES, COMMENSURATE WITH THE AMBITION OF THE GOALS AND TARGETS OF THE FRAMEWORK.

This Target is crucial to the success of biodiversity conservation, as it is to the goal of securing sustainable livelihoods around the world. However, nothing in the content of the Target differs from what are generally accepted approaches to building capacity, knowledge, and technological capabilities, in any pursuit. For example, the content of Target 20 is the same as has been pursued in fishery development for decades. This is not a negative point, but simply highlighting that well-established approaches can be applied here – with the only wording that fits the CBD particularly being the goal of “the conservation and sustainable use of biodiversity”.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

**Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South-South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries**

These are standard and well-accepted aspects of capacity-building and ‘international development’ efforts. One aspect that might be noted particularly is “access to innovation” as this may require both specific access to new innovations, e.g., in technology, as well as access to education and training on ‘doing innovation’ (e.g., in business schools).

**Fostering joint technology development and joint scientific research programs for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the Framework**

This language calls for institutional measures (and institutional support) to facilitate engagement of developing countries, in particular, in technology development and scientific research programs. The fishery sector has a history of such joint research activities, e.g., in relation to marine and oceanographic surveys, efforts to implement the ecosystem approach to fisheries, etc. and the Target is an incentive for further expansion of these initiatives.

### 3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION

#### Increased collaboration

The call for “joint technology development and joint scientific research programmes” is important in reflecting the need for fully involving developing countries in contributing to Target 20. Indeed, the word

“joint” in the Target provides an opportunity to build more fair and equitable ‘joint’ programs to use funding, and institutional capacity, and design and implement particular activities. In addition, there is a need to fully involve the local level, including coastal fishing communities, so “joint” can be interpreted across nations and across spatial and jurisdictional levels.

There are many well-determined potential benefits from capacity building, in relation to fisheries, fish organizations, and community-managed areas. There is also an opportunity to transfer environmentally friendly fishing technologies to developing countries.

### **Needs for implementation**

- a) This Target can benefit fisheries and fish organizations on all scales, (e.g., including small-scale users of marine and terrestrial biodiversity) but attention is needed to ensure the implementation of this Target is done in a manner equally accessible to all users, so those better organized to seek benefits, such as larger businesses and NGOs, do not dominate agendas and programs of knowledge collection, etc.
- b) This Target may provide opportunities to accelerate the spread of new biodiversity-friendly approaches and technologies across fisheries.
- c) The text specifying “South-South, North-South and triangular cooperation” conspicuously overlooks South-North capacity building. However, the spirit of Target 20 is fully inclusive in sharing knowledge and capacity. As the [IPBES Values and Valuation Assessment](#) highlighted, many cultures in less developed economies have decision-making and valuation systems that are highly compatible with sustainable uses of biodiversity. Target 18 presents an opportunity for mutual South-North as well as North-South capacity building for these positive incentives and tools for sustainability, and fisheries are well-placed for such mutual capacity building programs.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

- a) Aggressive technology interpretation may result in imposing unwelcome technologies on local communities, and as a result, technological “innovation” may threaten these communities directly (e.g., by reducing livelihoods) or lead to the fisheries being considered ‘modernized’ and thus “industrial fisheries” according to certain definitions.
- b) Donors and the private sector may have substantial control over what capacities are built; capacity-building controlled top-down may entrench existing inequities in the outcomes of the programs.
- c) Increasing some capacity without considering the full scope of fisheries and communities could create imbalances – for example enhancing harvesting capacity for previously under-utilized species, without building the market chain to make best use of the new products.

## **5. SYNTHESIS**

Capacity building has long been an important aspect of fisheries, and Target 20 reinforces those efforts. Lessons have been learned from past capacity building initiatives of how new technologies can disrupt well-established and sustainable communities and cultures. Those lessons need to be widely communicated and taken into account in implementing Target 20. As long as the capacity building efforts are not donor-controlled and top-down designed, Target 20 presents substantial opportunities for further

improving the sustainability of fisheries and human well-being, particularly of communities and cultures depending on smaller-scale fisheries.

## TARGET 21 – DATA, INFORMATION AND KNOWLEDGE FOR DECISION-MAKING

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE THAT THE BEST AVAILABLE DATA, INFORMATION AND KNOWLEDGE, ARE ACCESSIBLE TO DECISION MAKERS, PRACTITIONERS AND THE PUBLIC TO GUIDE EFFECTIVE AND EQUITABLE GOVERNANCE, INTEGRATED AND PARTICIPATORY MANAGEMENT OF BIODIVERSITY, AND TO STRENGTHEN COMMUNICATION, AWARENESS-RAISING, EDUCATION, MONITORING, RESEARCH AND KNOWLEDGE MANAGEMENT AND, ALSO IN THIS CONTEXT, TRADITIONAL KNOWLEDGE, INNOVATIONS, PRACTICES AND TECHNOLOGIES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES SHOULD ONLY BE ACCESSED WITH THEIR FREE, PRIOR AND INFORMED CONSENT, IN ACCORDANCE WITH NATIONAL LEGISLATION.

Target 21 focuses on data availability, across a wide range of data types, to inform and communicate about biodiversity decisions. There is clear recognition that to make wise and informed decisions, data needs to be accessible in the natural resource and ocean management process. That implies that there are adequate surveys, monitoring, databasing, and reporting on data which are sufficient enough to actually answer key management questions. It also implies that all sources of information be considered, including indigenous and local knowledge (ILK). Clear elements of communication across, within, to, and from all interested parties are critical for this Target. There is also the need to synthesize data into digestible, plain language reports for use by all interested parties. Hence, adequate capacity to share, synthesize and widely communicate data (e.g., online cadastres, web portals, etc.) is valuable.

The results of such synthesis, reporting, communication, and greater availability have improved stakeholder buy-in in the fisheries sector and multi-ocean use sectors when they have occurred. For example, ICES regional seas program and NOAA's Integrated Ecosystem Assessment program have produced several Ecosystem Status Reports, State of the Ecosystem Reports, and National Marine Ecosystem Status web portals (e.g. [here](#)) that all collectively served to more broadly inform context, strategic management advice, and even increasingly tactical management advice. They have all also increasingly begun to incorporate ILK. The value and payoff of making data, information, and knowledge more widely available will only benefit any area-based or other management measures and can help to better codify and track biodiversity objectives. In many ways, this Target links to fisheries interests by pursuing best practices for data availability and dissemination.

### 2. ANALYSIS OF THE TARGET CONTENT

Restricting the review of this Target to the provisions selectively relevant to fisheries and aquatic biodiversity, the key operational phrases include:

#### **Best available data, information, and knowledge**

This formulation clearly aligns with the term “*best scientific evidence available*” enshrined in UNCLOS (Art. 61.2), while broadening it implicitly to cover both scientific and local traditional knowledge. Not using information is ill-advised and in some jurisdictions tantamount to being illegal (especially in a fisheries context), but poor availability of the best information is the major caveat that usually offsets this requirement. The other concern typically raised is having insufficient data, or capacity to generate those data, which is a reasonable concern in some instances. This, however, needs to be balanced with the incessant need by some to always know more, and hence never having enough data, or the call for more data to result in inaction, compared to having the “best available” data. which are often sufficient, even if only order of magnitude or directional, to frame or bracket a needed decision.

### **Accessible to decision makers**

The expression implies two critical things. First is that the data, information, and knowledge are accessible. That is, publicly available, easily searchable, and additionally presented in a manner devoid of technical jargon such that the information is easy to understand. Second, the information is to be provided not just because it is nice to know, but because it is an integral part of ocean and natural resource management decision-making processes and protocols.

### **Guide effective and equitable governance**

This alludes to the need for information that leads to efficacious governance decisions, including what objectives are, how those objectives will be monitored, and how those objectives will be met. It also advisable to do this in a manner that includes all affected and interested parties as part of the governance process.

### **Integrated and participatory**

This implies that every stakeholder, regardless of stature, status, or economic/social standing, has a say in the governance process, and also that the information, decisions, and impacts from those decisions are considered as an integrated whole and not in isolation.

### **Management of biodiversity**

The term implies that there are germane mandates, authorities, processes, venues, and protocols to manage biodiversity, which even if piecemeal are usually enabled via national jurisdictions or via international treaty obligations. More so, biodiversity is often construed as species richness or closely related themes, but in reality, needs to also consider functional, genetic, aggregate, and ecosystem – level diversity beyond the typical taxa-based biodiversity schemas. Also, in a management context such as fisheries, biodiversity properties need to have clear objectives and performance measures, to clarify what science and information is “best” for purpose.

### **Traditional knowledge [...] Indigenous Peoples and Local Communities**

The knowledge and involvement of IPLCs is increasingly recognized as critical for the effective management of natural resources. This knowledge poses challenges for tactical management decisions that tend to be based on highly quantitative information as seen in large-scale fisheries. More importantly, such knowledge is only slowly being brought into contextual discussions for operational or strategic management decisions, yet those are places where local knowledge can and should have notable input and influence, in small traditional communities but not only.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Making fisheries data more accessible**

A lot of biodiversity aligns with extant fisheries monitoring, especially fisheries independent surveys. Mining these datasets and making them available or raising awareness of them to a broader community has high potential for fisheries and biodiversity synergy. Granted, some of these data are focused on a limited sub-set of taxa in an ecosystem, usually the nekton or macrobenthos, but can be informative and representative of broader taxa trends.

### **Sharing information**

The opportunity exists to strengthen, demonstrate, and export examples of well-functioning information systems within fisheries (RFMOs, ICES, FAO). FishStat or Fishbase are just two examples of global



information systems that are exemplary of globally integrated datasets. The opportunity to highlight national, regional, and basin-scale information systems as examples of best practices also exists.

The need for better communication tools and efforts to showcase progress and positives about fisheries is strong, and disseminating status and trends of fisheries resources, marine ecosystems, and related information is a growing need.

#### **Improving monitoring and assessment**

It is also important to continue improving monitoring, stock assessment, ecosystem assessment determination of sustainable harvest levels, biological reference points, and related decision criteria that uses both classical scientific and ILK sources. This extends into the growing expectations for more inclusive and participatory planning and assessment methodologies and decision-support tools.

#### **Enhance and use peer-review processes**

It is also important to call attention to the well-structured scientific peer review and advisory processes that are well established in fisheries but less widespread in many other resource-based sectors. These have high potential utility when examining status and progress towards biodiversity objectives.

#### **Compare management options and tools**

It is becoming urgent to simulate, model, test and evaluate a range area-based/spatial information tools to facilitate area-based management systems, mapping, and spatial planning to achieve fisheries and biodiversity objectives. The wise use of spatially oriented Management Strategy Evaluation is a particularly attractive option.

### **4. POSSIBLE THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

#### **Ill-defined objectives**

Biodiversity objectives are often ill-defined or rely on intermediate measures that are actually implementation tools (e.g., area closures), which can limit buy-in and applicability from fisheries perspectives. As decision-making becomes more inclusive, it can become vulnerable to accusations that fishery participants are exerting too much influence over decisions where their interests are at stake, and vice versa from the purely conservation perspective. Clarity of objectives is a must to avoid wide-open interpretation of definitions of success and in the implementation to achieve that success.

#### **Disagreements on “best available information”**

Lack of agreement on what are “best available” data and analyses, allows advocacy perspectives to promote alternative interpretations of fisheries information using different data or methods. The opposite is also possible. This is particularly of concern regarding area-based management contexts. Other resource assessment contexts do not have the well-developed peer-review process used in fisheries, and the best practices for peer review can be viewed as too limited or rigid on the one hand and too costly and ignored on the other.

#### **Unreasonable data demands**

Demand for data accessibility should be reasonable, but some data in fisheries or other ocean-use sectors may be proprietary or restricted, for a variety of reasons, including commercial confidentiality. Protecting ownership rights and individual vessels from being targeted, as well as giving away too highly resolved information to what amounts to trade secrets of an individual operator, should be considered, and suitable protocols to amalgamate data emplaced.

### **Data limitations**

In many places, data limitations or shortages, coupled with overly risk-averse approaches, can run the risk of ceasing all fishing operations in a given area. Risk is understood and expected when executing an ocean-use sector activity, and the precautionary approach is wise as long as the risk (i.e., the probability of occurrence of a negative event, times the likely cost of that event) is reasonably assessed and degree of risk aversion is appropriate for the nature and magnitude of the risk. The temptation to not allow any extractive activity until reasonable and salient information is known is a fair, but delineating what is “reasonable and salient” can often be interpreted to mean “exhaustive and comprehensive”, which would pose assessment challenges and possible undue restrictions of economic activities.

### **Non-integration of traditional knowledge**

Tools for integrating information from different knowledge systems into a single view of stock/ecosystem status and dynamics are few and often not well tested in fishery contexts. Information from traditional knowledge systems is often not compatible with approaches used to set Harvest Control Rules and other fishery management benchmarks. Consequently, if simply applied to small-scale fisheries, these conventional approaches may be poorly understood and complied by these communities which often already feel marginalized in governance processes and discouraged.

## **5. SYNTHESIS**

The Target places emphasis *inter alia* on the best information available, its accessibility, its role in equitable governance, the participation of stakeholders, the management mandates, and the use of IPLCs knowledge. It offers opportunities to improve the accessibility of information systems, the mechanisms to share information, the need to improve monitoring and assessments, the key role of peer review, and the need to compare the performance of available management tools and options. The Target also implies potential threats to sustainable fisheries, resulting from ill-defined objectives, disagreement of what is the “best available information”, unreasonable demands for data, limitations in available data, and non-integration of traditional knowledge.

## **TARGET 22 – INCLUSIVE, PARTICIPATORY GOVERNANCE AND DECISION-MAKING**

### **1. BRIEF INTRODUCTION TO THE TARGET**

ENSURE THE FULL, EQUITABLE, INCLUSIVE, EFFECTIVE AND GENDER-RESPONSIVE REPRESENTATION AND PARTICIPATION IN DECISION-MAKING, AND ACCESS TO JUSTICE AND INFORMATION RELATED TO BIODIVERSITY BY INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, RESPECTING THEIR CULTURES AND THEIR RIGHTS OVER LANDS, TERRITORIES, RESOURCES, AND TRADITIONAL KNOWLEDGE, AS WELL AS BY WOMEN AND GIRLS, CHILDREN AND YOUTH, AND PERSONS WITH DISABILITIES AND ENSURE THE FULL PROTECTION OF ENVIRONMENTAL HUMAN RIGHTS DEFENDERS.

Many fisheries already are based in or have strong connections with Indigenous Peoples and local communities. Fishing communities obviously include “women and girls, children and youth, and persons with disabilities”. Accordingly, this Target – focusing on “representation and participation in decision-making, and access to justice and information” – is very important for fisheries, but also provides opportunities for fisheries to highlight how they have already integrated aspects of the Target.

The specifics of how to ensure “representation and participation in decision-making, and access to justice and information” need to be determined but there are opportunities to show progress already made on bringing previously marginalized groups into some fisheries governance processes, to study what factors were influential in the efforts so far, to expose and address governance processes where there is weak or limited access to social justice mechanisms, and to expand current efforts at increasing inclusiveness of governance processes, including by weakening the ability of past dominant voices to oppose such actions.

### **2. ANALYSIS OF THE TARGET CONTENT**

#### **Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making**

This is a common wording, at various levels of governance, for how decision-making should take place. Although the recent history has been one of top-down decision-making in ‘western’ modes of fishery management, a series of resource collapses and failures of management led in recent decades to a shift toward more inclusive approaches, such as that of fishery co-management. In parallel, change has taken place through an increased understanding of inequities in different parts of society, and in the fishery sector, with respect to decision-making. In particular there is increasing recognition of the need to pay attention to gender issues (notably the role of women in fisheries). All of this does not mean that fisheries are exemplary examples of meeting this Target, but rather that the necessary discussions are often underway, such that progress to date can be directly improved upon.

#### **Access to justice and information related to biodiversity by indigenous peoples and local communities**

The rights of local communities and Indigenous Peoples to access justice and information is a basic principle of the rule of law and recognised in various UN instruments. Full access to justice refers to the access to the State legal system as well as their own justice systems. This requires justice services to reach marginalised groups including women, and children and persons with disabilities.

### **Respecting their cultures and their rights over lands, territories, resources, and traditional knowledge**

This wording is increasingly found in international instruments, e.g., multilateral agreements, conventions and protocols, guidelines that deal with biodiversity and fisheries conservation and management, and agreements that address the need to protect the human rights of local and Indigenous communities. This wording confirms recognition of the United Nations Declaration on the Rights of Indigenous Peoples and other human rights law and recognises that the cultural practices and rights of Indigenous peoples and local communities cannot be ignored or undermined in decision-making processes. The stewardship exerted by Indigenous Peoples over their land and marine territories depends strongly on their rights to tenure, and similarly fisheries management by or with coastal communities depends on clear recognition of rights to access. Preferential access areas for marine small-scale fisheries and devolution of formal rights to coastal IP and LCs increases empowerment for them to manage coastal fisheries and associated ecosystems.

### **Women and girls, children and youth, and persons with disabilities**

Although there is increasing reference in international agreements, guidelines and national policies to the critical role played by women in resource management and the importance of recognising and including women and girls, children and youth, and persons with disabilities, in planning and decision-making processes, identifying appropriate mechanisms to enhance participation of these groups in such decision-making has been slow. Children are still largely invisible in planning and decision-making processes that affect the environment, biodiversity and fisheries conservation and management. States have clear obligations to recognise and protect the rights of women, children and persons with disabilities and hear their views and concerns regarding decisions that affect their lives. In particular, finding appropriate ways to include youth, children and people with disabilities in decision-making requires innovation and appropriate facilitation.

### **Ensure the full protection of environmental human rights defenders**

The inclusion of environmental human rights defenders in the wording of Target 22 is in recognition of the right of everyone to a clean, healthy and sustainable environment as a universal human right (UN Human Rights Council [Resolution 48/13](#)) and the important role played by local communities and Indigenous Peoples in protecting and upholding these rights through their practices and actions. This phrase recognises that human rights and the environment are interdependent, and protection of the environmental right is necessary to enjoy a full range of human rights. This wording confirms that States are obliged to give full protection to environmental human rights defenders in implementing the goals and targets of the GBF. It has been recognised that these environmental defenders have been particularly under-recognised in the coastal and marine realms and this needs to be urgently rectified.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **An opportunity to showcase progress already made on bringing previously marginalized groups into fisheries governance processes**

Fisheries have many success stories to share, both to call attention to progress made, and to facilitate broader uptake of the strategies producing the successes. There are also opportunities to study what factors were influential in the more and less successful efforts so far, to extract more general messages for future efforts.

### **Acquiring insights and guidance from indigenous and local community conservation practices**

By ensuring full, inclusive, and effective participation of all groups identified in this Target in fisheries and conservation management and decision-making, useful lessons and insights regarding sustainable and effective local and Indigenous fisheries and conservation management approaches and practices can be shared and applied elsewhere.

### **Holistic or transdisciplinary review of fisheries management and conservation**

The theory and practices of IP and community led coastal resource management has swollen considerably over the past half century and a considered review will yield valuable guidance on improving its impact. However, whereas IP and LC are relatively clear on the link between ecosystems, fisheries and their livelihoods, there is still much scope to examine these experiences from a perspective that integrates biodiversity conservation, fisheries management, livelihoods and resilience and the potential to achieve multiple SDGs in a more harmonious and cost-effective way.

### **An opportunity to expand current efforts at increasing inclusiveness of governance processes**

This Target presents an opportunity to weaken the ability of past dominant voices to oppose actions to improve inclusivity and address ongoing challenges to access to decision-making. Furthermore, there is a need to improve women's participation in all aspects of fisheries (together with other sectors), and to better recognize their critical contribution to the fisheries sector and fisher community wellbeing. Women and girls, youth, children, and people with disabilities require a safe and accessible space where they can express their views freely and confidently. In terms of children's participation, it is necessary to provide a safe and inclusive space with appropriate facilitation where children can discuss issues and express their views regarding proposals and decision that may affect their rights and lives in general. These views and concerns need to be communicated and incorporated into policies, plans and decisions.

### **Private sector**

Although increasing involvement of the private sector may appear attractive as a source of finance, this sector already has a disproportionate influence over governance. Any increases in influence of the private sector should be linked to proportionally more financing for processes of inclusiveness and regulation of the impact of that sector on natural resources.

### **Moves to increase accessibility of information related to biodiversity and its management**

This aspect of the Target is also developed in Target 21, Both Targets 21 and 22 increase the demand for managers, policymakers, and scientists to make all fisheries and biodiversity information more widely and easily available to the public, in way that a broad public can understand and use.

### **Information on biodiversity and fisheries stocks and ecology**

Such information is crucial for community decision-making and form a basis for community conservation and fisheries management. Having well informed communities is not a given, particularly in less developed countries, and should receive more attention. Some regions such as the Pacific Islands have recognised this as a primary need in their strategies.

### **Increase the emphasis on transparency**

Transparency and good environmental and fisheries governance hand in hand. Transparency and anticorruption are topics often avoided and yet the implementation of policies and enforcement of societally agreed rules depend on good and effective governance. Public access to information is not a

given in many of the most biodiverse countries and campaigns for this should be given more attention, including voluntary initiatives such as the Fisheries Transparency Initiative as well as other conventions such as the UN Convention against Corruption.

### **Opportunities to promote social justice mechanisms in governance**

Many fisheries policy and management decisions about, *inter alia*, what, when, where and how to fish, have implications for social justice. Aside from the frequent explicit reference to giving special consideration to Indigenous Peoples and Local Communities, the GBF as a whole does not give clear and rigid guidance on what “social justice” is for decisions on conservation and sustainable use of biodiversity. However, Target 22 provides opportunities for exposing and addressing any governance processes with weak or limited access to social justice mechanisms, thus making social justice considerations more visible in decision-making about fisheries and biodiversity.

### **A more co-ordinated and integrated approach to biodiversity conservation and governance**

As has been highlighted in the narrative on many GBF Targets, more coordinated governance of biodiversity conservation and resource uses is needed, and will require government to (a) promote better co-ordination and communication across relevant governance actors, (b) create safe spaces and platforms, effective communication channels, and (c) employ innovative tools, in order to involve relevant societal actors and in particular groups identified in Target 22 that have previously been excluded from these discussions and decision-making processes.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Special interest groups with skill in advocacy tactics can use this Target to demand inclusion in fisheries decision-making processes**

Inclusive governance processes are vulnerable to special interest advocacy groups with strong meeting skills to influence outcomes, potentially leading to detrimental consequences for dependent communities and fisheries, but without taking on responsibility for addressing the consequences.

### **Opposition may exist to proper recognition and use of knowledge systems**

Particularly in jurisdictions where top-down management of fisheries is the norm, decision-making relies strongly on conventional fisheries data and models, developed and used by actors long-established in fisheries decision-making processes. These actors continue to insist on priority of the information from the conventional fisheries data and models and resist more than token attention to information from other knowledge systems.

### **Lack of capacity, experience, and resources**

To bring together, share, and interpret information from all knowledge systems requires resources and support. These resources are often monopolized by the conventional fisheries information sources, and responsible governance agencies must adopt an equitable, inclusive, effective and gender-responsive approach to planning and decision-making, open to all knowledge systems.

Neglecting to strengthen environmental human rights defenders and civil society at large will leave few monitoring or defending this Target.

### **Poor approaches to implementation of 'equity' and the term "equitable"**

These terms can be judged on many standards and have never been easy to implement. This lack of agreement on what comprises true "equity", can lead to unbalanced interpretations of equity, leading to corresponding detrimental outcomes in decision-making and governance.

## **5. SYNTHESIS**

There are many opportunities for fisheries in implementing Target 22, in part arising out of the already existing connections with Indigenous Peoples and local communities, and the natural inclusion within fishing communities of women and girls, children and youth, and persons with disabilities. The available opportunities include highlighting how they have already integrated aspects of the Target.

There are, however, challenges accompanying the opportunities, e.g., to incorporate insights and guidance from indigenous and local community conservation, to build coordinated, integrated, transdisciplinary approaches to fisheries management and conservation, to expand the inclusiveness of governance processes, to determine the right role for the private sector. to increase accessibility of information related to biodiversity and its management, to increase transparency of environmental and fisheries governance, and to promote social justice mechanisms. Furthermore, efforts are needed to suitably deal with special interest groups, to overcome opposition to proper recognition and use of knowledge systems, and to ensure capacity, experience and resources needed by governance agencies to build equitable, inclusive, effective and gender-responsive processes.

## TARGET 23 – GENDER EQUALITY

### 1. BRIEF INTRODUCTION TO THE TARGET

ENSURE GENDER EQUALITY IN THE IMPLEMENTATION OF THE FRAMEWORK THROUGH A GENDER-RESPONSIVE APPROACH WHERE ALL WOMEN AND GIRLS HAVE EQUAL OPPORTUNITY AND CAPACITY TO CONTRIBUTE TO THE THREE OBJECTIVES OF THE CONVENTION, INCLUDING BY RECOGNIZING THEIR EQUAL RIGHTS AND ACCESS TO LAND AND NATURAL RESOURCES AND THEIR FULL, EQUITABLE, MEANINGFUL AND INFORMED PARTICIPATION AND LEADERSHIP AT ALL LEVELS OF ACTION, ENGAGEMENT, POLICY AND DECISION-MAKING RELATED TO BIODIVERSITY.

Conceptually Target 23 should not be too problematic in fisheries although practically it will be hard to show full and equitable participation of women and girls in all aspects of fisheries by 2030 – and probably for years afterwards. Education programs for training fisheries experts have consistently attracted more male than female applicants, at levels of secondary schools, community colleges, undergraduate and graduate programs. With the development of modern research vessels, the problems of hardship and living conditions of life at sea have been reduced. However, working and living conditions on small, commercial fishing vessels and small-scale crafts make it still challenging to attract equal numbers of men and women to work on fishing vessels, even on larger ones spending several weeks or months at sea on individual trips. On the other hand, “equity” is not the same as having equal numbers of men and women, boys and girls in every individual task. Gender ratios are different in different sub-sectors with a proportion of females in the workforce typically increasing from capture to processing to trade and markets.

Females are also numerous in NGOs and can be expected to be well-represented in education, and health-care activities and land-based activities (governance, management, finance, research). Females may also be more important in land-based aquaculture. Progress towards the intent of Target 23 can be made by giving greater recognition to the crucial roles that women and girls do play along the product line from keeping the fishing vessels seaworthy to quality of fishery products on the markets. There may be few women and girls serving as ship engineers, trawl mechanics, and deck hands deploying and retrieving fishing gears. However, in many parts of the world women dominate in the roles of processing catch, transporting product to markets anywhere from local communities to urban centres, and in the commerce or trade in fish and fish products. Women are also increasingly active in areas of management fisheries, from inspectors and observers to policy making tables, in the assessment and advisory processes, and sometimes as skippers of fishing vessels, often as a family legacy. Gender-sensitive action is recommended in the [FAO Voluntary Guidelines for Sustainable Small-Scale Fisheries](#).

### 2. ANALYSIS OF THE TARGET CONTENT

All key phrases have some relevance to fisheries, but no more so than to any other resource-based activity that can operate from local to global scales. The most relevant follow.

#### **All women and girls have equal opportunity and capacity to contribute to the three objectives of the convention**

This is a straightforward phrase and supports the interpretation of the Target as not calling for equal numbers of male and female participants in each individual aspect of fisheries. Rather, it is equity in opportunities to contribute to how fisheries operate in accord with the pillars of the Convention. That may be a more realistic conceptualization of Target 23 for fisheries, at least in the short and medium term.

#### **Recognizing their equal rights and access to land and natural resources**



The issue of tenure relative to fisheries and fishery resources is complex and not fully resolved on many scales, (see Targets 3, 5, 9 and 10). The focal concerns are about the legitimacy of any individuals or groups having secure tenure over fish, portions of quotas and/or places where they fish, and only secondarily about which individuals should have priority in access to such tenure. In many instances, community-based tenure has proven to be more likely to maintain property in the community than individual rights and could be more amenable to gender equity in tenure.

### **Full, equitable, meaningful, and informed participation and leadership at all levels of action, engagement, policy, and decision-making**

As with the previous phrase regarding equity and tenure over resources, there continue to be struggles in many parts of the world over meaningful participation in policy and decision-making over all aspects of fishing and fisheries; corporate vs community control; large scale interests competing with small scale interests, etc. (see Targets 9, 22 and others). Gender equity is rarely a major component of such dialogue, but it is hard to imagine that adding gender would simplify the dialogue about equitable, meaningful, and informed participation. Gender issues could even become token issues raised by those already with disproportionate influence over decisions, to extend/protract the dialogue rather than resolve issues. Within the gender issue, equity calls also for attention to the role of youth and elders, not just women.

## **3. OPPORTUNITIES AND NEEDS FOR IMPLEMENTATION**

### **Exchange of experience**

Gender equity is an important societal issue, and at an overarching level, the same numerous and important opportunities and needs to strive for gender equity in any sector of society will apply in fisheries. Fisheries are far from the only resource-based economic sector to find it difficult to achieve equity in many specific jobs that are essential to the sector. There are opportunities for inter-sector communication and exchanges to share experiences with sectors like farming, forestry, and mining, to learn how to make the work settings for traditionally male jobs more gender equitable.

### **Equity in compensations**

In many fisheries there are gender-differentiated areas of work that may prove difficult to make gender neutral in terms of operations and assigned duties. However, there is substantial opportunities to advance the intent of Target 23 through ensuring equity of compensation for work in the more gender-differentiated roles of fisheries, and through ensure that the roles where women have traditionally been centred receive equity in respect for the contribution that they make to the sector.

## **4. POTENTIAL THREATS TO SUSTAINABLE FISHERIES FROM AGGRESSIVE INTERPRETATIONS OF THE TARGET**

### **Resilient male bias**

For a Target on gender equity in rights to fisheries and fishery resources and equal participation in decision-making, the major threats to implementation and attacks on the image of fisheries may be as much internal as external. It may be hard to dispel the customary view of fisheries as a male field, even though this is not the case in many cultures, and for many aspects of fisheries. There are practical challenges that may prove difficult to overcome, for example as fishing trips, particularly for large scale fisheries, may be unattractive for women with young families, particularly in cultures where childcare is not equitably shared by men and women. The living quarters of fishing vessels are also often cramped and not designed for mixed gender crews. In some parts of the world national legislation and/or traditional practices of some cultures and religions may also constitute barriers to effective action on this Target. None of those challenges are insurmountable, but it will take a concerted effort by jurisdictions to make substantial

progress of some aspects of Target 23 in fisheries and require changes in practices deeply imbedded in coastal cultures.

### **Gender balance in decision-making**

For the aspects of the Target directed at decision-making and policy development, at least until there is greater equity in the representation of men and women in education programs for fisheries expertise, pressure to accelerate the representation of women may have to overcome the prejudices of women being too unfamiliar with fishing operations to effectively develop fisheries policy. Where these preconceptions are deeply rooted as standard practices of governance, they may be an impediment to fisheries for making rapid progress on the intent of this Target.

### **Ideological views**

There is always a threat that particularly ideological or myopic critics can attack fisheries for not having equal numbers of men and women in each job associated with sustainable fishing. However, such criticism is unlikely to be widespread and serious, as long as there is satisfactory progress on equity in all the areas of fisheries and fish management where the tasks themselves are suitable for all genders.

## **5. SYNTHESIS**

Some aspects of Target 23 can be readily achieved in fisheries, just by increasing the recognition of the important roles women already play in many aspects of fishing. Some aspects can be addressed through attracting more women to education majors and training programs in skills important for fisheries operations and fisheries management. Some aspects of Target 23 may be very difficult to achieve in fisheries, in cultures where practices are deeply culturally viewed as gender differentiated, or working conditions are unfriendly to women, and may not be easily changed without major restructuring of how fishing is conducted.

## GLOSSARY

The CBD has provided a [Glossary](#) of terms that appear in the Kunming-Montreal GBF, to guide how terms in the Goals and Targets to be interpreted. Where terms in this review are also in the GBF Glossary, those definitions are copied here and followed in the report. Where terms used this report are not in the GBF Glossary, other CBD sources were sought, and the source of the definition is provided.

**Connectivity** – “Connectivity (i.e. ecological connectivity) is the unimpeded movement of species and the flow of natural processes that sustain life on Earth. It may thus also refer to continuous ecosystems often connected through ecological corridors. There are two types of connectivity: structural (in which the continuity between ecosystems is identified) and functional (in which the movement of species or processes is verified)”. (CBD GBF Glossary)

**Customary sustainable use** – “The uses of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements”. (CBD GBF Glossary)

**Degraded ecosystems** – “Land degradation can occur either through a loss of biodiversity, ecosystem functions or services. From an ecological perspective, land degradation may include complete transformation in the class or use of the ecosystem, such as the conversion of natural grassland to a crop field, delivering a different spectrum of benefits, but also degradation of the “natural” or “transformed” system. Natural ecosystems are often degraded prior to being transformed. The transformed ecosystem that results from this conversion can, in turn, be degraded and see a reduction in the delivery of its new functions (e.g. an agricultural field where soil degradation and reduced soil fertility leads to reduced crops). The same concepts are applicable to the degradation of marine and freshwater ecosystems. It may take the form of changed trophic structures in a marine community (through fishing pressure and selective removal of species, transformation of the soft and hard benthos (through repetitive sweeps of contacting gears, such as trawls) or artificial reef construction, to cite only a few examples. In the case of aquatic freshwater ecosystems, the construction of dams and reservoirs over river courses or the conversion of natural wetlands into rice paddies are examples of ecosystem transformation”. (CBD GBF Glossary)

**Ecological integrity** – “An ecosystem is generally understood to have integrity when its dominant ecological characteristics (e.g. elements of composition, structure, function, and ecological processes) occur within their natural ranges of variation and can withstand and recover from most perturbations”. (CBD GBF Glossary)

**Ecosystem-based Approaches** – “Defined as the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change. This term may refer to a wide range of ecosystem management activities to increase the resilience and reduce the vulnerability of people and the environment, including to climate change and disasters”. (CBD GBF Glossary)

**Ecosystem services** – “The benefits people obtain from ecosystems. According to the original formulation of the Millennium Ecosystem Assessment, ecosystem services were divided into supporting, regulating, provisioning and cultural services”. (CBD GBF Glossary)

**Harmful subsidy** – “A result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs, but in doing so, discriminates against sound environmental practices”. (CBD GBF Glossary)

**Integrated spatial planning** – “Spatial planning is generally understood as a method or public process for analysing and allocating the spatial and temporal distribution of activities in a given environment in order to achieve various objectives, including social, economic and ecological (such as biodiversity), that have

been specified through a political process. Spatial planning includes land-use planning, marine spatial planning, etc.”. (CBD GBF Glossary)

**Invasive alien species** – “An alien species whose introduction and/or spread threaten biological diversity (For the purposes of the present guiding principles, the term “invasive alien species” shall be deemed the same as “alien invasive species”). (CBD GBF Glossary)

**Naturalness** – “Areas composed of viable assemblages of plant and/or animal species of largely native origin and/or where human activity had not essentially modified an area's primary ecological functions and species composition”. (CBD GBF Glossary)

**Nature’s Contributions to People** – “Nature’s contributions to people (a concept similar to and inclusive of ecosystem services) refers to all the contributions from biodiversity to people’s well-being or quality of life. They include (a) material contributions, such as the production of food, feed, fibre, medicines and energy, (b) regulating services, such as the regulation of air and water quality, climate regulation, pollination, regulation of pests and diseases and provision of habitat, and (c) other non-material contributions, such as learning, inspiration, health, physical, psychological, spiritual well-being and experiences and supporting identities and culture, as well as maintaining options for future generations”. (CBD GBF Glossary)

**Nature-based Solutions** – “Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits”. (CBD GBF Glossary)

**Nature’s Contributions to People** – (like ecosystem services) are defined as “all the contributions, both positive and negative, of living nature (diversity of organisms, ecosystems, and their associated ecological and evolutionary processes) to people's quality of life”. ([IPBES](#))

**Recovery** – “The restoration of natural processes and genetic, demographic, or ecological parameters of a population or species, with regard to its state at the initiation of the recovery activities. It also refers to its past local abundance, structure, and dynamics, to resume its ecological and evolutionary role, and the consequent improvement regarding habitat quality”. (CBD GBF Glossary)

**Resilience** – “The ability of a system to absorb impacts before a threshold is reached where the system changes into a different state”. ([CBD Technical Series No. 43](#))

**Restoration** – “Ecosystem restoration means “assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact”. Restoration can happen in many ways – for example, through actively planting or by removing pressures so that nature can recover on its own. It is not always possible – or desirable – to return an ecosystem to its original state”. (CBD GBF Glossary)

**Sustainable Use** – The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations (CBD, Convention itself 1992).