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Items 4.4 and 13 of the provisional agenda*

EXPERT MEETING ON IMPROVING PROGRESS REPORTING AND WORKING TOWARDS IMPLEMENTATION OF AICHI BIODIVERSITY TARGET 6

Note by the Executive Secretary

1. Building on previous and ongoing collaboration with the Food and Agriculture Organization of the United Nations (FAO), pursuant to decisions X/29 and XI/18, in facilitating the efforts of Parties, other Governments and relevant organizations in addressing issues related to marine biodiversity and sustainable fisheries, the Executive Secretary jointly organized, together with the Food and Agriculture Organization of the United Nations, the Fisheries Expert Group of the IUCN Commission on Ecosystem Management and the European Bureau for Conservation and Development, the Expert Meeting on Improving Progress Reporting and Working towards Implementation of Aichi Biodiversity Target 6.
2. This meeting was held in Rome, from 9 to 11 February 2016, at the headquarters of FAO and attended by 35 experts from different regions, with knowledge and experience in the fields of fisheries and/or marine and coastal biodiversity.
3. The meeting identified a set of actions and potential indicators that may be used by Parties, other Governments and relevant organizations to accelerate, monitor and report on progress towards the achievement of Aichi Biodiversity Target 6. The meeting also discussed potential ways and means to further enhance collaboration and cooperation among CBD, FAO and Regional Fishery Bodies with regard to Aichi Biodiversity Target 6.
4. The meeting report is being submitted for the information of participants in the twentieth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice

* UNEP/CBD/SBSTTA/20/1/Rev.1.

EXPERT MEETING ON IMPROVING PROGRESS REPORTING AND WORKING TOWARDS IMPLEMENTATION OF AICHI BIODIVERSITY TARGET 6

Jointly organized by the Food and Agriculture Organization of the UN (FAO), the Secretariat of the Convention on Biological Diversity (SCBD) and the IUCN Fisheries Expert Group (IUCN-CEM-FEG) and coordinated by the European Bureau on Conservation and Development (EBCD)

Rome, Italy, 9-11 February 2016

Abstract

The Expert Meeting on Improving Progress Reporting and Working Towards Implementation of Aichi Biodiversity Target 6, jointly organized by FAO, SCBD, and IUCN-CEM-FEG and coordinated by EBCD, took place in Rome (Italy) from 9 to 11 February 2016. The meeting developed a draft conceptual framework that could be used as guidance by CBD Parties in reporting on their implementation towards the achievement of Aichi Target 6 on sustainable fisheries. The meeting identified a set of actions and potential indicators related to the achievement of Target 6 and discussed ways to further improve coordination among CBD, FAO and Regional Fishery Bodies with regards to facilitating the achievement of Aichi Target 6.

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List of acronyms and abbreviations

AHTEG	Ad-Hoc Technical Expert Group
CBD	Convention on Biological Diversity
CCRF	Code of Conduct on Responsible Fisheries
CECAF	Commission for Eastern Central Atlantic Fisheries
CITES	Convention on international trade in endangered species of wild flora and fauna
COFI	Committee on Fisheries
COP	Conference of the Parties
CPUE	Catch per unit of effort
EAF	Ecosystem Approach to Fisheries
EBCD	European Bureau for Conservation and Development
EBSA	Ecologically or Biologically Significant Marine Area
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FIRMS	Fisheries and Resources Monitoring System
GBO	Global Biodiversity Outlook
GFCM	General Fisheries Commission for the Mediterranean
IUCN	International Union for Conservation of Nature
LDC	Least-developed country
MCS	Monitoring, control and surveillance
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-governmental organisation
RFB	regional fishery body
RFMO	Regional Fishery Management Organisation
SCBD	Secretariat of the Convention on Biological Diversity
SIDS	Small Island Developing States
SOFIA	State of Fisheries and Aquaculture
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNGA	United Nations General Assembly
VME	Vulnerable marine ecosystems

I. INTRODUCTION

1.1 INTERDEPENDENCE OF BIODIVERSITY CONSERVATION AND FISHERIES MANAGEMENT

The issue of sustainable fisheries lies at the critical nexus between biodiversity conservation, ecosystem health, prosperity, recreation, poverty reduction, livelihoods, nutrition and food security, and is therefore a key aspect of sustainable development. Fisheries provide key means to make progress towards sustainable development goals, but at the same time, can also present potential obstacles to sustainable development if not managed well. The delicate balance required between healthy ecosystems and sustainable use as each contributes to human wellbeing in the short and long terms has been both a goal and a challenge for the global community.

Objectives for sustainable fisheries and conservation and sustainable use of biodiversity are partly overlapping, convergent and inter-dependent: the overarching long-term objective for biodiversity conservation can only be met if pressure from fishing on stocks, species, habitats, and ecosystems is sustainable, and the long-term objective of fisheries for livelihoods and food security can only be met if the impact of the sector on ecosystems supporting it is constrained within acceptable and sustainable levels. Moreover, both biodiversity conservation and fisheries performance depend on protection of the ecosystem components from negative impact of the broad cross-sectoral suite of economic activities developing in the aquatic systems as well as on land surrounding them. In response to the interrelatedness of these objectives, governance of fisheries and of biodiversity conservation streams continue to evolve, interacting with each other and with society on a widening range of issues (Garcia et al, 2014).

In recognition of the importance of fisheries in achieving biodiversity objectives and broader goals for sustainable development, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) specifically addressed sustainable fisheries as part of the Strategic Plan for Biodiversity 2011-2020. The Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Biodiversity Targets, adopted by the COP at its tenth meeting in 2010,¹ lay out an ambitious agenda for achieving a future where ecosystems are able to provide critical services that underpin planetary well-being, and where the global community can sustainably and equitably benefit from biodiversity without impacting the ability of future generations to do so.

The vision of the Strategic Plan is that *“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”*. With a view to achieving this vision, Aichi Biodiversity Target 6 reads as follows:

By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that

¹ CBD COP decision X/2

overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Some of the other Aichi Targets are also especially relevant to the achievement of Aichi Target 6, such as:

- *Aichi Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning;*
- *Aichi Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes;*
- *Aichi Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained; and*
- *Aichi Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.*

The fourth edition of the *Global Biodiversity Outlook*,² published in 2014, suggests that significant progress has been made towards meeting some components of most of the Aichi Biodiversity Targets. However, indicators suggest we are not on track to meet a number of the Aichi Targets and that, without urgent action, the status of biodiversity will continue to decline. In particular, available information shows that we are not on track to achieve Aichi Target 6 by 2020. Accelerating progress towards the achievement of this Target will require improved implementation and better mainstreaming of biodiversity into our development planning, governance and decision-making at various levels.

As the United Nations mechanism for international cooperation and policy development in fishery matters, the Food and Agriculture Organization has a key role to play in assisting its Parties to progress towards sustainable fishery sectors and hence towards the achievement of Aichi Target 6 and mainstreaming biodiversity concerns and strategies in fisheries. Indeed, the various elements of Target 6 have been addressed in different ways through the work of FAO since its establishment, including work to implement the Code of Conduct on Responsible Fisheries (CCRF) adopted to foster implementation of the UN Convention on the Law of the Sea (UNCLOS) and the Ecosystem Approach to Fisheries (EAF), adopted to follow-up on the adoption of the Ecosystem Approach by the CBD. The importance of

² Available at: <https://www.cbd.int/gbo/4>

collaboration between the CBD and FAO has been emphasized by the CBD Conference of the Parties³ as well as FAO⁴.

The CBD and FAO have a long-standing history of collaboration with regards to fisheries and biodiversity issues in various respects. This includes a 2011 expert meeting on sustainable fisheries co-organized by the CBD Secretariat, FAO, UNEP and IUCN-FEG.⁵ and there is a key opportunity and need to enhance collaboration with regard to facilitating the achievement of Aichi Target 6, building on existing areas of work within the two respective organizations. Additionally, there is an opportunity to build on and enhance reporting within the two institutions with regards specifically to Aichi Target 6, both within the 2020 horizon, and in the longer term with regards to fisheries and biodiversity.

Within the CBD, Parties are required under Article 26 of the Convention to report on their efforts, and progress in implementing the Convention in light of specific national circumstances, as reflected in their national biodiversity strategy and action plans (NBSAPs). The national reports are the mechanism by which the CBD Parties to report on their progress in the implementation of the Convention and progress towards achieving the Aichi Targets. Information from the national reports are used to inform work under the Convention as well as the deliberations of COP, and also inform the periodic publications of the Global Biodiversity Outlook (GBO), a major publication of the CBD that reports on the status of biodiversity and the implementation of the Convention. The CBD also compiles additional information, including from relevant organizations, with regards to issues relevant to the Convention, often in response to requests for information on specific issues, which is also used to inform work under the Convention and assessments of progress in the implementation of the Convention, such as through the Global Biodiversity Outlook.

Within FAO, there are a number of reporting streams relevant to Aichi Target 6, including the reporting of national-level fishery statistics, which are used to produce the State of Fisheries and Aquaculture (SOFIA) biennial reports, as well as reporting on the implementation of the CCRF, among others.

Existing reporting mechanisms under the CBD and FAO present a number of opportunities to articulate a clear, coherent and better-informed reporting framework that countries may wish to use in reporting on efforts and progress towards achieving Aichi Target 6.

1.2 ORGANIZATION OF THE EXPERT MEETING

An expert meeting to address this issue was co-organized by FAO, the CBD Secretariat and the Fisheries Expert Group of the IUCN Commission on Ecosystem Management (IUCN-CEM-FEG; or FEG) and coordinated by the European Bureau for Conservation and Development (EBCD). The meeting was held from 9 to 11 February 2016 at the headquarters of the FAO in Rome, Italy, and involved 35 experts with knowledge and

³ CBD COP decision XII/6

⁴ E.g. when joining the Biodiversity Initiative Partnership

⁵ Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries, 7 – 9 December 2011, Bergen, Norway. Information available at: <https://www.cbd.int/doc/?meeting=JEM-BCSF-01>

experience in the fields of fisheries and/or biodiversity attending in their individual capacity. A list of participants is available in annex I.

In order to facilitate the preparation of the experts and their debates, a background document was prepared by Jake Rice and Serge M. Garcia entitled: *Target 6: Improving progress reporting and working towards implementation*.

The expert meeting aimed to:

- Develop elements for a potential conceptual framework that countries might use in reporting on progress towards the achievement of Aichi Target 6;
- Identify existing reporting frameworks and mechanisms that can be used to support reporting on Aichi Target 6; and
- Identify ways in which the CBD and FAO, and the fisheries and biodiversity communities in general, can further enhance collaborative approaches to monitoring and reporting on Aichi Target 6.

The meeting was co-chaired by Gabriella Bianchi (FAO) and Jake Rice (IUCN-CEM-FEG) and was organized in the format of plenary discussions and breakout group sessions. The meeting discussions were informed by a detailed background document, as noted above, which was circulated to participants prior to the meeting.

Financial support for the organization of the meeting and the travel of some of the participants was kindly provided by FAO and the Nordic Council of Ministers. Financial support was also kindly provided by the European Commission to fund the travel of some of the participants.

1.3 OPENING STATEMENTS

The meeting began with welcome and opening remarks from the co-chairs and an opening statement on behalf of the Executive Secretary of the CBD, followed by a roundtable introduction by participants.

In an opening statement, which was delivered by Joseph Appiott (CBD Secretariat), Braulio Dias (Executive Secretary, CBD) highlighted the strong interlinkages between marine biodiversity and sustainable fisheries, and the importance of coherent approaches in these two areas to the achievement of sustainable development. He noted the importance of recognizing that objectives for sustainable fisheries production and biodiversity conservation are convergent and interdependent. He emphasized that biodiversity objectives can only be met if pressure from fishing is sustainable, and that objectives for productive fisheries can only be met if the ecosystems that support the fish stocks are healthy and resilient. He further noted the importance of the thirteenth meeting of the Conference of the Parties (COP 13) to the CBD and its focus on mainstreaming biodiversity into various sectors to enhancing progress towards Aichi Target 6, and encouraged participants to make use of this opportunity to enhance synergies on reporting on, and accelerating, efforts to achieve Aichi Target 6.

Then, plenary presentations were given by representatives of the FAO and the CBD regarding the importance of sustainability, the existing commitments for action and reporting in this regard and the potential for future collaboration on Target 6.

Gabriella Bianchi (FAO) discussed reporting on fisheries under the FAO, which manages several well-established mechanisms to collect information and report on various aspects related to Aichi Target 6. She noted that there are FAO reporting mechanisms at various levels that are especially relevant. She described reporting through the biennial report on the State of Fisheries and Aquaculture (SOFIA); the collection of fishery statistics from Member States, their processing and redistribution; the use of the web-based questionnaire for the implementation of the CCRF; the international partnership on the Fisheries and Resources Monitoring System (FIRMS) and relevant efforts under the Commission on Genetic Resources for Food and Agriculture. She also discussed the Tracking tool for the Implementation of the Ecosystem Approach to Fisheries (EAF). At the regional level, she noted reporting through the regional fishery bodies (RFBs⁶), which vary significantly in mandate and capacity and the means and degree to which they include the precautionary and ecosystem approaches in their work. She also emphasized that FAO assists member countries with building capacity to monitor and manage their fisheries and that, given the various relevant reporting systems at the UN level, there are many opportunities for vertical and horizontal integration to increase coverage and coherence while reducing burden.

Joseph Appiott (SCBD), discussed the CBD processes for reporting, describing the approach of national reporting, which is the mechanism by which Parties report on progress in the implementation of the Convention. He noted that guidelines for the national reports have generally focused on narrative reporting across different aspects of CBD implementation and are agreed to by the COP. The CBD recently finished its fifth national reporting process and guidelines for the 6th national reports will be considered at the 20th meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) in April 2016. The national reports are made publicly available and are also used to inform various areas of work within the CBD. In addition, information from the national reports, together with other sources of information, inform the Global Biodiversity Outlook, the flagship publication of the CBD Secretariat, which reports on the status and future projections for biodiversity at the global level. The fourth edition of the Global Biodiversity Outlook, which analyzed progress towards the achievement of the Aichi Targets, was launched in 2014 and welcomed by the CBD Conference of the Parties at its twelfth meeting.⁷ He also noted the ongoing work on identifying global indicators for the Aichi Targets through the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020. As well, he noted that the forthcoming meetings of SBSTTA and COP in April and December 2016, respectively, will address mainstreaming biodiversity into key sectors, including

⁶ Regional Fishery Bodies (RFBs) include fishery bodies with mandatory management power such as Regional Fishery Management Organizations and Arrangements (RFMO/As) as well as fishery bodies with advisory and technical assistance capacity. Both undertake assessments and might contribute to the CBD reporting process.

⁷ CBD COP decision XII/1

fisheries, among other items. In this regard, these meetings provide a key opportunity to enhance cooperation and coordination between the fisheries community in improving sustainable fisheries and monitoring and reporting towards Aichi Target 6.

The background document prepared by Jake Rice and Serge M. Garcia to assist the experts in their discussions was briefly presented, focusing on a draft conceptual framework for reporting on Aichi Target 6 proposed for the meeting participants to consider in their discussions (**Section 2**).

1.4 PRELIMINARY DISCUSSIONS

Following the presentations, participants engaged in open plenary discussions. During these discussions, the participants recognized the following:

1.4.1 Risk-based approaches

Risk-based approaches provide a way to prioritise which species or ecosystem elements to monitor and report on. Risk-based approaches are already mainstreamed in the Ecosystem Approach to Fisheries (EAF) (FAO, 2003 and 2013), and there is scope for such approaches to be mainstreamed in fisheries management and not limited to species facing high potential or actual risk. When combined with additional factors including the costs of monitoring and the social and economic value of resources, they provide a structured approach that can be repeated and updated as needs change and new information becomes available. Early assessment of potential risks can identify the links between fishing pressure and species or ecosystem elements, further refining how to prioritise monitoring and reporting between low and high risk species or issues.

1.4.2 Governance capacity and compliance/enforcement

There are a number of overarching actions to be taken to reach Target 6 – such as the adoption and implementation of appropriate policies, legal frameworks and management plans – to provide the enabling environment needed by all or most of the other actions foreseen to achieve the Target. For biodiversity located within EEZs, such actions need to be taken at the national level and translated, as appropriate, at the sub-sectoral or fishery level to explicitly tackle specific issues such as threatened species or conservation of specific critical habitats. However, considering the complexity and time needed to adopt policies and review legal frameworks, action may be “fast tracked”, e.g. through pilot projects, while the formal frames are developed (see also **Section 2**).

Similarly, such actions require a level of governance capacity that might not yet be available in all countries, particularly in least-developed countries (LDCs) and Small Island Developing States (SIDS). While it is still possible to develop, within data-limited approaches, some simpler indicators, bilateral and multilateral cooperation programs should be put in place to assist them in that endeavor at governance levels ranging from national to local.

Reporting to the CBD is done by Parties through national reports, as called for Article 26 of the Convention. However, many aquatic resources are shared between States, in international rivers and in the ocean, implying the need for some level of coordination

between States in assessment and reporting. When such resources and habitats fall within the area of competence of Regional Fishery Bodies (RFBs), e.g. in Areas Beyond National Jurisdiction (ABNJ) where RFBs have been formally established– in which data collection and assessment are formally conducted on behalf and with the participation of their Parties, then the coordination between the national bodies responsible for reporting to the CBD and these RFBs would need to be efficient and reasonable.

1.4.3 Ecosystem benchmarks

There is ongoing work regarding potential indicators and benchmarks for the Aichi Targets, which can inform reporting by Parties within the CBD. At this time, particularly at the ecosystem scale, there is no general consensus with regard to either generic guidelines, or an agreed list of indicators of fishing impacts that allows assessment of the ecosystem status (properties, structure, functions) and the ecosystem impacts of fishing in a robust and standardized manner. Setting benchmarks for sustainable use, serious adverse impacts, and safe ecological limits is particularly challenging in many areas in which data are limited or non-existent, catches are aggregated (e.g. at genera, family or higher level), many species are threatened, and ecosystem and their properties are poorly known.

The sections below often give generic guidance on many aspects of the reporting on Target 6, with expectations that by 2019, when report preparation is well underway, additional information on setting benchmarks may be available.

1.4.4 Socio-economic dimensions

The meeting noted the important socio-economic dimensions of sustainable fisheries. For instance, fishing discards lead to loss of nutrients and missed economic opportunities, which may be essential to ensuring food security of coastal communities. In addition, management measures to improve sustainability of fisheries and biodiversity may have adverse impacts on the well-being of fishers and fishing communities. There may be instances where trade-offs need to be made to achieve the outcomes as specified in Target 6. The participants noted the relevance and importance of interlinkages among the 20 Aichi Targets and the fact that such socio-economic dimensions are often more directly addressed by other Aichi Targets (e.g., Target 3 and 4) and, therefore, the meeting did not focus directly on them.

1.4.5 CBD and FAO reporting

Both the CBD and FAO have a variety of reporting mechanisms at different scales from national to global.

Reporting under the CBD on the Aichi Targets, the Strategic Plan and other aspects of the implementation of the Convention, in the context of the implementation of National Biodiversity Strategies and Action Plans (NBSAPs), is done by Parties to the CBD through the national reports. In addition to reporting on the status of the implementation of the Convention, the information contained in the national reports informs the deliberations of the Conference of the Parties and various areas of work under the Convention as well as the Global Biodiversity Outlook (GBO). The guidelines for the national reports are agreed to by the COP. CBD national reporting processes provide for the use of indicators chosen by the

Parties, as well as substantial narrative information on interpreting and augmenting the indicators. As a result, these key reporting products of the CBD often do not rely as heavily on trends in quantitative larger-scale indicators as do many FAO reports. Parties have greater flexibility in matching the national reports to national circumstances and can focus their NBSAP reporting on indicators not available globally. However, where narrative is presented without quantitative indicators the full extent and reliability of trends (upward or downward) may not be apparent.

FAO is the only source of comprehensive global fishery statistics. The FAO global capture database is mostly based on reporting of retained catches by flag states within any given major FAO fishing area (there are 19 marine FAO fishing areas encompassing the waters of the Atlantic, Indian, Pacific and Southern Oceans, established before UNCLOS).

FAO fishery statistics do not provide information on catches taken inside/outside a country EEZ but only by major FAO Fishing Areas.

The capture fishery statistics are generally submitted by national correspondents in the appropriate ministry through questionnaires that are also available in electronic format. Data reported by countries are carefully checked and, when the figures are questionable, the national correspondent is consulted for clarifications. The statistics made available by the national authorities can be complemented or replaced if better data of other origins are available (e.g. those compiled by the regional fishery bodies managing tuna resources).

The FAO assessment of status of fish stocks started in 1974. The assessment utilizes a wide spectrum of data and information sources, from data-rich stock assessments to those with very limited information apart from catch statistics. The procedure used entails that for stocks with formal assessments within a FAO Statistical Area (e.g. ICES, FAO fishery Commissions or RFMOs) these assessments are directly adopted (see FAO 2011, pp 327-334 for a more detailed description of the methodology⁸). Stock status assessments may include regional, national and even finer scales, according to availability. For those cases where stock assessments are not available, auxiliary information such as grey literature, expert opinion or the FAO fishery statistics are used to assess the state of the stocks (usually at higher taxonomic level, e.g. species or families).

FAO global assessments are reported *inter alia* in the biennial report on the State of Fisheries and Aquaculture (SOFIA).

FIRMS collates assessments undertaken by RFMOs in quasi-real time. As part of its core functions, FAO also monitors the global progress of implementation of the CCRF and related instruments through a self-assessment questionnaire every two years. Based on a decision in 2013, the COFI Secretariat developed a tailor-made web-based questionnaire for members, RFBs and NGOs, together with a related database and information system. Part of the information is in narrative format. Similarly, FIRMS contains substantial narratives, particularly regarding state of stocks and management advice.

⁸ FAO, 2011. Review of the state of world marine fishery resources. FAO Fisheries and Aquaculture Technical Paper No. 569. Rome, FAO. 2011. 334 pp.

When reporting on progress towards Target 6 under the CBD, there is valuable information for many resources that is packaged by stocks/ecoregions in FAO and RFBs, including both quantitative assessments for larger-scale indicators as well as other more narrative information sources, such as from the CCRF questionnaire and under the FIRMS. In this regard, there is an opportunity for substantial value added and cost savings by using information being provided by reporting and assessment processes under FAO and RFBs in reporting on progress towards Target 6 under the CBD. It was noted that in the case of shared, transboundary resources and habitats, and other potential elements of the Target, the reporting burden could be reduced if CBD Parties were to decide to use the assessments made in the ambit of RFBs or FAO. Some raised the possibility of reporting on Target 6 with regards to transboundary or international resources through RFBs or FAO. However, in response it was pointed out that reporting under the CBD on Target 6 is done through national reports from the CBD Parties and, in this regard, assessments and information from various sources, including FAO and RFBs, would need to be reported through the CBD Parties in their national reports. It was suggested that, in the longer term, there could be value in having single reports, under a mutually agreed format, submitted to both organizations on issues of common interest. As well, relevant information from FAO, RFBs and other relevant sources with regards to fisheries issues are considered in various areas of work under the CBD as well as assessments of progress towards the Aichi Targets, such as the Global Biodiversity Outlook.

1.4.6 Scientific and technical capacity

With regards to reporting on multiple elements of Aichi Target 6, i.e. (1) target and depleted species, (2) threatened and other species and (3) ecosystem structure and function and vulnerable ecosystems, it is important to identify needs and gaps that arise in terms of capacity and skills, as well as opportunities that the process of developing a tool for reporting provide, for the reporting itself and well as for dealing with the Targets in future. There is likely to be a much greater need for this in developing countries, but there are clearly some universal capacity-building needs, especially in relation to ecosystems. These capacities are required both by countries and relevant organizations for the reporting process and sustainable fisheries management practices. It is also urgent to address key areas and make rapid progress between now and 2019. Considering the urgency of the matter, the attention of RFBs could be drawn to this issue so that resources available at the regional level could be effectively pooled to improve reporting quality and coherence.

II. CONCEPTUAL FRAMEWORK⁹

This section contains the various elements of the conceptual framework within which the meeting conducted its work.

2.1 ELEMENTS OF TARGET 6

In order to systematically assess the progress made towards meeting Target 6, it is necessary to assess progress in relation to the various elements of the Target. These elements are important to consider in appropriate grouping, as Target 6 sets different standards for their evaluation.

2.1.1 All target species

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided.

This element refers to stocks, recognizing the pragmatic terminology used in fishery science for populations or their proxies. It sets the scope of the target as applying to all exploited marine taxa, not just major commercial finfish. The expression *managed and harvested* was intentionally specified to highlight that sustainable fisheries needed to have some form of actual management, whether by a jurisdiction or a community /industry co-management. Such a plan needs: (1) to be built on sustainability principles; (2) to have a legal basis for actions to be taken; (3) to be placed in an ecosystem context; and (4) to result in overfishing being avoided.

In the meeting, these provisions were referred to as the ‘target species provisions’. However, it was acknowledged that in many multi-species fisheries, particularly but not only in most small-scale fisheries, one or more gears may be used during a fishing trip to target many main and secondary species and the concept of “targeting” needs to be considered broadly. In such less selective fisheries, all species likely to be used if taken were considered to be covered by this provision.

2.1.2 Depleted species

By 2020...recovery plans and measures are in place for all depleted species.

This element applies specifically to *all depleted* target species, i.e. target species that have been severely overfished in the recent past, and in the workshop were simply referred to as *depleted species*. No specific definition of *depleted* was given in Target 6, but the meeting discussed the term as is commonly used in conventional fisheries management. The FAO Glossary definition refers to a stock driven by fishing to a low level of abundance compared to historical levels, with dramatically reduced spawning biomass and reproductive capacity. It requires particularly energetic rebuilding strategies and its recovery time will

⁹This section draws heavily from the background document made available at the meeting to guide participants and was inserted under the responsibility of the meeting secretariat.

depend on its current condition, potential productivity,, the level of protection and the environmental conditions.

For such populations, the standard to be met is that recovery plans, measures and targets have been identified and are in place. It is not required that the population has fully recovered.

2.1.3 Threatened species and vulnerable ecosystems

By 2020 ... fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems.

This element deals specifically with two different components of biodiversity facing particularly high risk – *threatened species* and *vulnerable ecosystems* – to ensure that they are given enhanced protection.

For *threatened species*, the use of the term *threatened* was intentional, to link this argument to the results of processes that assess species against criteria to identify species or ecosystems in urgent need of enhanced protection.

The species assessment processes could be national ones or, if lacking, those of intergovernmental agencies such as CITES, or else of other bodies such as the IUCN Species Survival Commission (SSC).

With regards to *vulnerable ecosystems*, the terminology of *vulnerable marine ecosystems* (VMEs) used in UNGA Resolution 61/105 and the International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009) is highly relevant. However, the scope of VMEs was limited to deep-sea fisheries using gear in contact with the bottom in the high seas while the meeting addressed this element of Target 6 as covering a broader set of ecosystems considered as *vulnerable* at other depths, under other jurisdictions, and possibly vulnerable to other pressures than just bottom-contacting fishing gears.

For such species and ecosystems, the standard to be met is *no significant adverse impacts*, which closely aligns with the guidance in UNGA Resolution 61/105 and the International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009).

2.1.4 Ecosystems

By 2020...the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

This element refers to components covered earlier –such as stocks and species (implicitly both target and non-target)– but also extends to effects above the species level (e.g. at community, food chains and ecosystem level) and any species not covered by any of the preceding elements such as those constituting living habitats. It covers habitats not specifically identified as *vulnerable*. This element of Target 6 was referred to in drafting discussions as the *ecosystem* element. Discussions on this element necessarily overlap with other discussions, because all stocks and threatened species are part of the “stocks and species” and “Vulnerable ecosystems”, which are a subset of “*ecosystems*”.

What is distinct for this last element is that the standard to be met is that *the impacts ... are within safe ecological limits*. Any stocks and species treated in element A (cf. Figure 1) and assessed as meeting the *target species* standard would necessarily meet this *species and ecosystems* standard as well. Similarly, with regard to the Elements in 2.1.3, if fisheries are having “no serious adverse impacts, their impacts must be within safe ecological limits. Beyond that, there was no explicit guidance. The 1998 CBD Ecosystem Approach and its Malawi Principles adopted in COP decision V/6 and the 2004 Addis Ababa Principles for Sustainable Use adopted in COP decision VII/12 make explicit reference to maintaining ecosystem structure and function at the ecosystem scale. However, that is of limited value as there is not yet a scientific or policy consensus on what *safe limits* are for ecosystem structure and function. However, it was important that this standard referred only to the impacts of fishing on ecosystems and their components. The state of the whole ecosystem with all its components does not have to be assessed against *safe limits*.

In addition, all other species not otherwise mentioned above and in particular all non-target species should be covered. Although not specifically mentioned in Target 6, this element covers species affected by bycatch and discards.

2.2 ORGANIZATION OF THE WORKING GROUPS

In approaching its work, the workshop decided to use the four elements and their sub-elements, grouped in three themes, as a basis for forming subgroups for their work (**Figure 1**). Specifically:

- Subgroup 1: *Target species and depleted species* (Elements A and B)
- Subgroup 2: *Threatened Species and Other Species* (Elements C and D).
- Subgroup 3: *Ecosystems, including Vulnerable Marine Ecosystems* (Elements E and F)

All three subgroups were encouraged to discuss the evaluation standard for the elements under their responsibility. It was felt that arriving at and reporting a clear understanding of how to apply the benchmarks would be a valuable contribution to improving the abilities of Parties to report on Target 6.

2.3 REPORTING CONCEPTUAL MATRIX

		Implementation steps					
		1. Policies	2. Legal frames	3. Plans & measures	4. State	5. Outcome	
Elements of Target 6	A. All targets	Action					
		Indicator	Working Group 1				
	B. Depleted targets	Action					
		Indicator					
	C. Threatened spp	Action					
		Indicator	Working Group 2				
	D. Others species	Action					
		Indicator					
	E. Vulnerable ecosystems incl. habitat features	Action					
		Indicator	Working Group 3				
	F. Ecosystem Structure and function	Action					
		Indicator					

Figure 1: Conceptual matrix for the organization of the WGs and reporting on Target 6 and organization of the Working Groups. The main elements of Target 6 are in the rows of the matrix. The flow from policy-making to end outcomes is reflected in its columns.

As Parties and their diverse partners make efforts to meet Target 6, various actions may be taken at several levels. These may be expected to result in different types of inputs and output/outcome, depending on the circumstances of the fisheries and ecosystems concerned as well as implementation capacity. In order of increasing demands on governance and complexity to set in place, implement and report, the performance in implementing Target 6 can relate to:

1. Policies and legal frameworks reviewed, and where gaps or weaknesses are found, additions or modifications put in place or being developed;
2. Existing plans and measures reviewed, and where possible gaps are found, implementation strategies, plans and measures adopted and preferably being executed; and
3. Results/outcomes of (1) and (2) such as changes in state of stocks, habitats, bycatch and discards or protected species.

The measurement of effectiveness and efficiency of each step 1 to 3 and of the whole process may in turn require establishing new information collection streams.

As a means to structure both performance assessment and reporting on Target 6, the categories of elements and sub-elements of Target 6 (Rows A to F) and the types of initiatives (Columns 1 to 3) and results (Columns 4 and 5) were organized into a matrix (**Figure 1**) to provide a synoptic view of the reporting task.

The columns of the matrix represent a flow of levels of action from left to right, from high level Policy (column 1) and Legal (column 2) actions, to implementing new or adapted management measures and governance arrangements (Column 3). Then the matrix moves to considering specific results from the actions in terms of performance and changes in the state of the fishery, ecosystem and its components, and the governance system itself (column 4), and finally the outcomes of those all those earlier columns relative to the standards in the targets (Column 5). It was stressed that it might sometimes be difficult to distinguish clearly results from outcomes.

The rows A to F of the matrix reflect the content of the five categories of elements and sub-elements in Target 6 (**Section 2.1**), namely: (A) all targets; (B) Depleted targets; (C) threatened non-targets; (D) other species; (E) vulnerable ecosystems and (E) Other ecosystems in general. The meeting also decided to have two rows for each of the categories: one row for the actions that were taken, and a second row for indicators that could be appropriate for reporting on the actions. Those conducting the reporting at national/regional levels might find this particularly useful for simultaneously bringing some structure to thinking about how to approach each element of the Target (such as how actions in one column might have implications for actions in others), and how the actions being considered could be reported, with ease or difficulty, and at what costs.

The meeting found this structure to be a useful approach to organize reporting on Target 6 and, following initial discussions, each sub-group decided to use the above-noted structure in their discussions. The sub-group observations in **Section 3** illustrates the discussions on and the interpretation of some cells in the final matrix.

2.3.1 Plenary discussions on the matrix

The plenary discussions highlighted some general points on the issues being faced and the working methods. Some of these related to the matrix and how it was prepared, and to the introductory material (**Section 1.4**). Some more generic insights that arose in the plenary discussions are briefly reported below.

Essential background information

In the conceptual framework, there is a “virtual” column 0 on the left of the matrix, containing those actions Parties are assumed to have taken before formulating any specific action in response to Target 6. This would include, for example, preparing an inventory of, at least, the general types of fisheries in their jurisdiction and the general types of ecosystems in which those fisheries occur. This information is reviewed relative to the various elements of Target 6, together with local to global experience on what types of concerns are likely to arise in the various types of fisheries, species and habitat. For Parties

with adequate data, information and scientific capacity, these kinds of reviews can be done in integrated ecosystem assessments or full threat- or risk-assessments in the various fisheries. However, in circumstances where such formal reviews are not possible (because of insufficient information or scientific capacity), there is still an expectation that, at an early step in addressing Target 6 (as with most Targets), efforts are made to identify where the challenges and obstacles are likely to occur.

Uneven difficulties

As one progresses through the matrix, the ability to differentiate actions among cells may vary slightly. For example, because of the history and experience of fisheries management authorities in dealing with *Target species* issues, the differentiation of the Policy and Legal columns for elements A and B should be both more straightforward to fill-in and informative. This may be less the case in the lower rows of the matrix dealing with more ecosystemic matters, where the Policy and Legal frameworks may be not as mature, and in the right hand columns where State and Outcomes take time to materialize as experience and information accumulates on an evolving complex system.

Implementation sequence

The implementation process is addressed by the columns of the matrix, structured as an ideal chronology, starting after the overarching objectives, opportunities, and risk¹⁰s have been identified, and progressing from policy development to implementation. For each element (row), the sequence is to: (1) Adopt a policy considered appropriate, (2) Ensure that legal instruments are adequate to implement the policy; (3) Identify and put in place the measures and instruments needed to implement the policy in line with the law, including a system to track the impacts of the measures on the fishery, stock, communities and ecosystems; (4) Monitor status over time of the relevant ecosystem components (e.g. fisheries, species, stocks and habitats) as well as the functioning of the relevant governance processes and (5) See the accumulated changes (outcomes) resulting from the responses persisting over time and compare them to the benchmarks set in the various elements of Target 6. Although this linear sequence is logical, it is not the only or preferred approach to improving fisheries performance against the Target. Many countries have taken actions at the fishing community and fishery levels to address impacts on ecosystem components – from depletion of target stocks to changes on ecosystem structure and function– before or much more rapidly than major changes could be made to policies and legal frameworks. Pilot projects have often been used to “test” potential policies and regulations before formalizing them. It is therefore stressed that entry can be made at any stage in the sequence implied by the order of the columns and results may be available before revised policies or legal frames are operational. Iteration can also occur if objectives, risks, or policies change or if unexpected changes in the environment occur.

Implementation costs

¹⁰ Risk in this context does not imply that a formal risk analysis has been done; Rather, that the major types of activities or events that impede progress towards the objectives, were they to occur, have been identified.

Another aspect of the structure of the matrix related to the order of the columns is that “moving to the right” in the matrix is often associated with substantial increases in two types of costs:

1. Q
Operational costs. These are direct and recurrent sectoral management costs of the actions needed to implement measures such as: (i) Apply monitoring, control and surveillance (MCS); (ii) Intercept and prosecute offenders; (iii) Monitor stocks, fisheries, and ecosystems; (iv) Estimate appropriate benchmarks and reference points, and (v) Periodically assess the status relative to the benchmarks. Such operational implementation is generally costlier than the development of policies, legal frameworks and plans and costs tend to be recurrent.
2. S
Structural reform costs. These are strategic costs of making whatever changes to fisheries structure and practices are needed to deliver the desired outcomes. They include: (i) Adaptation of policy and legal frameworks; (ii) Re-sizing fleets and changing allocations (compensation costs); (iii) Re-organizing the sector; (iv) Developing appropriate public infrastructures, (v) Promoting cooperatives and (vi) Providing economic incentives. These costs tend to be non-recurrent.

These costs are not a problem created by the matrix but a reality to be taken into account when using it as tool for awareness-raising and communication, planning or reporting, as well as when interpreting its contents or assessing performance.

One size does not fit all

In developing the matrix, it became clear that it would not be possible to develop comprehensive and universal indicators in the different cells in the time available. Moreover, in theory, given the global scope of the Aichi Targets, reporting is to be done on the performance in governance of every fishery in the world. Because of the diversity of circumstances that would be encountered across countries, fisheries, regions, and ecosystems, even an illustrative list would be of limited value. Such a list could even be counter-productive if it was interpreted as suggesting that no alternative or better ways to fully reflect the Party’s progress could not be used. Consequently, in many of the cells in the “Indicator” rows of the matrix, entries proposed by the groups focused on highlighting the important properties that indicators should have to make them informative about that particular aspect of reporting on Target 6. These cell entries were not intended to repeat all the existing guidance already available on desirable properties of sustainability and ecological indicators. Rather, they were intended to highlight factors particularly important to consider in the selection of indicators for the specific purpose represented by the specific cell.

III. DELIBERATIONS OF THE WORKING GROUPS

Following initial discussions, the meeting split into 3 breakout groups in line with the structure of the Matrix: (I) Target and depleted species; (II) Threatened and other species; and (III) Ecosystems including vulnerable ecosystems. The three groups were tasked to reflect on the elements of Target 6 allocated to them and potential indicators that would be needed for reporting on progress towards achieving the Target. Their discussions are summarized below.

3.1 GROUP 1 – TARGET AND DEPLETED SPECIES

3.1.1 Introductory remarks

Objective

Group 1 addresses the following element of Target 6: *By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided [and] recovery plans and measures are in place for all depleted species,*

The main goal of this element is to assess sustainability of fisheries with regard to *Target species*, including *Depleted species*. This is achieved by analyzing each management or reporting unit (i.e. stock, species or fishery) in order to assert, for *Target species* in general and *Depleted species* in particular, whether:

1. There is a system in place that can respond adaptively to changing stock status to keep the stock, species or fishery around biologically safe levels or to return them to safe levels when they are not.
2. The current fishing pressure is appropriate to the productivity and status of the stock, species or fishery.
3. The current status of the stock or species is within safe biological limits.

The group discussed the potential use of a questionnaire approach for reporting on this element of Target 6. The advice given below regarding the questionnaires will aim at meeting these three objectives. The conceptual matrix (described in Section 2.3) was kept in mind to ensure that questions raised lead to a comprehensive response in terms of policy, legal frames, plans and measure, state and outcomes.

Countries' capacities to respond

Methods and reference points for monitoring and assessing the sustainability of target stocks are generally well-developed and broadly accepted. However, in many countries and certain types of fisheries, these techniques cannot be applied, or can only be partially applied due to limited resources for collecting comprehensive data, and/or the lack of technical resources and skills. Likewise, the governmental capacity to translate assessment into effective adaptive management is either lacking or only partial in many countries. This lack of capacity presents a major challenge not only to sustainable fisheries management, but also to the compilation of the data required to evaluate progress towards Aichi Target 6. The capacity available to complete the questionnaire below and the basis upon which

responses will be provided, vary enormously between countries and across fisheries within countries. Recognition of this reality has been paramount in compiling the following questions.

Theoretically increasing the detail and number of questions would make the reporting more comprehensive, but may in fact be a disincentive and reduce the reporting rate from small developing countries in which the greatest marine biodiversity is often observed. Consequently, the questions suggested have been kept to a minimum with the intention of providing a basis for estimating the metrics of interest rather than requiring Countries to directly synthesize and evaluate their own data to estimate the metrics themselves.

Reporting unit

The basic reporting unit is to be decided by Parties according to their capacity and practice. However, Parties should aim to report information at the level of stocks whenever possible. If not, then the unit should be defined by the country on the basis of the management unit used (stock, species or fishery).

For shared stocks, the ideal management unit is supranational (regional), and in cases where a regional fishery body (RFB) exists, the country report should reflect the status assessed by the regional body or, alternatively, the RFB could be mandated to report on those stocks on behalf of Countries.

Scope of the questionnaire

Reporting must be kept as simple as possible. Group 1 suggested that a web-based digital questionnaire, with drop-down tick boxes be developed by CBD, and the questions below were designed with that in mind.

The Group suggested that all questions listed below would be answered for each reporting unit. Information at higher scale than the reporting unit selected may already be available (e.g. from FAO and other sources) to contextualize the state of fisheries.

If this option were taken, it is intended that other basic questions than those considered below, including: (i) the number of target stocks, species and/or fisheries in each country; and (ii) the number or proportion of target stocks, species and/or fisheries covered with assessments and adaptive management plans etc., could be derived at CBD level on the basis of the questionnaires returned by countries, rather than calculated by countries in response to specific questions in the questionnaires.

Discussion on indicators

There is a widely varying set of reference points and techniques that can be used to judge whether target stocks / species / fisheries are sustainable. The question on stock status is intended to allow Parties to apply their own standards and judgment. Further guidance on this question may be useful, especially for countries with less capacity in terms of data and assessment expertise. At the most basic levels, the stability over several generations (of a species) of landed catches, species and size composition and area covered by the fishery might provide the basis for qualitative judgments on sustainability. When available, a series of indicators (e.g. on size composition or CPUE trends) could be combined to assess stock status. CPUE normally decreases as soon as exploitation starts, and a decrease in CPUE

without a decrease in catch is not a sign of overfishing. A growing range of data-poor assessment techniques have been developed to provide simple quantitative estimates of various stock status indices. Guidance, in this regard, should be provided to support implementation. This material could also include references and links to manuals and guides supporting data-poor stock assessment.

3.1.2 Action and indicators

In the following sections, each of the three key questions above (related to the management system, the current fishing pressure and the state of stocks) is addressed as a means to assess performance in relation to the specific elements of Target 6.

Governance and management

Is there a system in place that can respond adaptively to changing stock status to keep the stock, species or fishery around biologically safe levels, or to return them to safe levels when they are not?

This question implies a number of subsidiary ones:

1. Is there an implemented management system / plan? (Yes or No)
2. What type/s of management measures are in place? More than one option can be selected e.g.: (a) Size selective fishing gear; (b) Gear restrictions; (c) Area restrictions; (d) Effort limits; (e) Catch limits; (f) Other Please specify.
3. Can the catch and/or effort limits be adjusted in relation to stock status? (Yes or No).
4. If answering yes to question 3, characterize the decision process used. More than one option can be selected e.g.:
 - a. Top-down conventional (executive) decision making;
 - b. Pre-agreed decision rules (Harvest Control Rules);
 - c. Participatory / community based processes;
 - d. Other: Please specify
5. If the stock, species or fishery is depleted do you have a recovery plan / measures in place? (Yes or No)

Fishing pressure and stock status

Is current fishing pressure (F) appropriate for productivity of the target stocks? Is current stock status (Biomass) within safe biological limits?

Subsidiary questions applying to the country-defined reporting unit (either the stock, species or fishery) could be:

1. Is the unit assessed or unassessed?
2. If assessed:
 - a. What was the date of last assessment?
 - b. Is the stock sustainable or unsustainable?
 - c. What type of assessment was used?
 - i. Qualitative expert based, or

- ii. Empirical trend based analysis, or
 - iii. Population model based
 - iv. Other Please specify
- d. Forms of data (optional):
- i. Catch
 - ii. Effort
 - iii. Catch per unit effort (CPUE)
 - iv. Species composition
 - v. Size composition
 - vi. Age composition
 - vii. Other Please specify
- e. Status – Biomass (B)
- i. B/B_{MSY}
 - ii. $B > B_{Lim.}$
 - iii. B Increasing?
 - iv. Not Available
- f. Status – Fishing Pressure (F)
- i. F/F_{MSY} or proxy
 - ii. $F > F_{Lim.}$ or proxy
 - iii. Not Available
- g. Clarifying Comments (Optional)

3.1.3 Matrix of action and indicators

The group identified some types of actions and indicators that fit in the conceptual matrix and could potentially be used by CBD Parties (**Table 1**).

Table 1: Actions and indicators of relevance for *Target species* and *Depleted species*. Policies and Laws aim at sustainable use. Outcomes are as specified in Aichi Target 6.

		1: Policies and laws are in place	2: Management measures in use	3: State	4: Outcome
A: All Target species	Actions	1. International agreements translated into national legislation. 2. National fisheries policy implemented 3. EBFM/EAF in policy documents	1. Capacity management plan. 2. EBFM/EAFM measures. 3. Proper incentives in place. Reliable data on fishing operations and catches with regular stock assessment 4. Controls on fishing capacity & catches	1. Stock status evaluated against relevant benchmarks. 2. Harvested sustainably, within safe (stock) limits	Overfishing avoided
	Indicators	1. Number and coverage of stocks with adaptive management systems / plans 2. Number and coverage of MCS systems in place (including IUU assessment	1. Number and coverage of stocks with effort or catch limits 2. Number and coverage of stocks with capacity to adjust effort or catch levels in relation to status	1. Coverage of stocks sustainably harvested based on assessments of B and F or surrogates; 2. Coverage of stocks within safe limits	1. Coverage of stocks with unknown status 2. Coverage of stocks under overfishing 3. Coverage of stocks that are overfished or depleted

B: Depleted Target species	Actions	Policy goals, legislation and incentives in place for bycatch/discards	<ol style="list-style-type: none"> 1. Recovery plans and measures in place for depleted species, Closures. Mandatory discards reporting or bans. 2. Species status monitored. Discard levels assessed 3. Recovery plans and measures in place, Closures. Mandatory discards reporting or bans. 4. Species status monitored. Discard levels assessed 5. Recovery plans and measures in place, Closures. Mandatory discards reporting or bans. 6. Species status monitored. Discard levels assessed 	<ol style="list-style-type: none"> 1. Depleted species are rebuilding towards safe biological limits. 2. Bycatch/discard species within SBL 	Trajectory to recovery is secure
	Indicators	Presence of regulations requiring recovery of depleted species	Depleted species designated and with recovery plans developing or adopted	Number and coverage of depleted stocks with rebuilding plan in place	<ol style="list-style-type: none"> 1. Number and coverage of depleted species with $F < F_{lim}$ 2. Number and coverage of depleted species with increasing biomass

3.2 GROUP 2 – THREATENED SPECIES AND OTHER SPECIES

3.2.1 Introductory remarks

Objective

Group 2 addressed the following element of Target 6: *By 2020 ... fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems.*

Matrix structure

The group noted inconsistencies between Table 2 (related to actions) and Table 3 (related to indicators) of the background document, in relation to the titles of the elements it was supposed to discuss. The group decided that the subject under its consideration (the rows) should be “*Threatened species*” and “*Other species*”. The group agreed to bring together bycatch, discards and *Other species* not accounted for in A, B or C (i.e., in *target, depleted* or *threatened* species categories) into one row, which was subsequently referred to as “*Other species*”.

3.2.2 Threatened species

Preliminary discussions

The opportunity to include "*on which fisheries have a significant adverse impact*" in the title of the *Threatened species* row was discussed. Some felt that doing so might put a potentially unwarranted burden of proof before qualifying threatened species for consideration. It was also noted that the *Threatened species* outcome column of the conceptual framework required a fuller explanation regarding how the expression "*Significant Adverse Impacts*" should be understood and whether the definition from the FAO Deep Sea Fisheries Guidelines should be applied in this case. There was a general sense that, in the context of Target 6, the expression "*adverse impact*" was assumed to have specific definition for ecosystems but not for threatened species and that "significant" was likely intended to be interpreted in the scientific sense. The group discussed the need to put a footnote in the table to cite the FAO Deep-Sea Guidelines and to further discuss elements of how the text could be translated in plenary or in the report writing.* The relevant text of the Guidelines, in this regard, is as follows:

§17: Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in a manner that:

- i. Impairs the ability of affected populations to replace themselves;*
- ii. Degrades the long-term natural productivity of habitats; or*
- iii. Causes, on more than a temporary basis, significant loss of species richness, habitat or community types. Impacts should be evaluated individually, in combination and cumulatively.*

§18. When determining the scale and significance of an impact, the following six factors should be considered:

- i. The intensity or severity of the impact at the specific site being affected;*
- ii. The spatial extent of the impact relative to the availability of the habitat type affected;*
- iii. The sensitivity/vulnerability of the ecosystem to the impact;*
- iv. The ability of an ecosystem to recover from harm, and the rate of such recovery;*
- v. The extent to which ecosystem functions may be altered by the impact; and*
- vi. The timing and duration of the impact relative to the period in which a species needs the habitat during one or more of its life history stages.*

3.2.3 Other Species

Preliminary discussions

The group decided to define "*Other species*" as follows, incorporating definitions from the FAO glossary and UNCLOS:

The *Other species* category includes all species that are directly or indirectly impacted by one or more fisheries apart from those that have been identified as *Target species*, *Depleted species* or *Threatened species*. *Other species*

* The co-chair had made it clear that the meaning was the same

therefore includes any species associated with or dependent upon harvested [i.e. Target] species. This encompasses any species taken incidentally with the target species towards which fishing effort is directed, commonly referred to as bycatch. The latter includes species that are retained and those that are discarded. It also includes species that are indirectly impacted, for example by fishing impacts on their habitat or on their prey or predators.”

In relation to appropriate temporal scale of defining target species, and how annual shifts in target species might affect the definition of target catches versus bycatch, some expressed doubt as to whether discards were actually part of this target. Some participants addressed two issues with regard to discards: (i) population level threats; and (ii) and food waste. If discards were an important contributor to fishing mortality reaching levels that could cause a species to be *threatened*, they would be addressed under *Threatened species* rather than in the context of food waste.. The group then discussed that the assessment and inclusion of discards in management was intended to be part of Target 6, and eventually agreed to keep discards in their discussion, but use indicators focused on population-level impacts.

Specific discussion of the elements of the conceptual framework related to *Other Species* began by questioning whether policy actions and related indicators (i.e., the *sustainable use policies are in place* column) were generic and should be pulled out as an overarching topic of relevance to all Target 6 elements. Some felt that the policy elements should simply include both one overarching generic policy statement and then specify further aspects in the legal (2) column, or management (3) column. It was noted that, in some cases, it would be useful to be able to report that specific policies are in place related to the specific elements or sub-elements of the target text, as this may be the only type of information available, in some areas by 2019. The group discussed the importance of the use of narratives, in addition to quantitative indicators. In the CBD National Reports, narratives were useful in capturing the full picture of efforts and progress towards to Target 6. Two options were offered for the policy cell reflecting approximate minimum and maximum information: a) Policies to ensure that fisheries are managed and harvested using ecosystem-based approaches in place; and, b) Policies are in place to insure that mortalities and significant indirect adverse impacts on other species are accounted for. Some participants discussed the potential inclusion of the term “all” before “mortalities”, along with the qualifiers “fishery-induced” or “fishery-related” but there was no consensus on this point.

The group did not address the second column (“Resources are harvested legally”), as it was not clear whether the legal context was a generic issue to be dealt with in an overarching manner or individually in this column. There was some question as to whether information related to effort, gear types and spatial/temporal distribution would be addressed in the *Target species* category. In the discussion of management measures in use for *Other Species*, some group members emphasized the importance of providing an opportunity to Parties to report on “mitigating” measures. This topic again brought the group back to the question of whether Target 6 encompasses the moral imperative to reduce discards on food security principles. With respect to ‘status’, there was a discussion about the definition of

“sustainable levels” although it was noted that this would require further discussion and interpretation at the national level.

3.2.4 Matrix of action and indicators

Table 2. Actions and indicators of relevance for *Threatened species* and *Other species*. Policies and Laws aim at sustainable use. Outcomes are as specified in Aichi Target 6. *Threatened species* are species on which fisheries have a significant adverse impact. *Other species* are species not otherwise covered in A, B or C. The state of these species is describes strictly in relation to fisheries impact. The impact of other factors is ignored.

		1: Policies and laws are in place	2: Management measures in use	3: State	4: Outcome
C: Threatened Species	Actions	1. Policies make adequate provisions to minimize impacts of fisheries on threatened species. 2. Legal provisions in place.	Protection measures in place. Species status regularly monitored.	Direct and indirect impacts of fishing kept low. Populations are increasing. Conservation status is improved.	No significant ¹¹ adverse impacts of fisheries on <i>threatened species</i>
	Indicators ^{12,13}	1. Policies make adequate provisions to minimize impacts of fisheries on <i>threatened species</i> . 2. <i>Threatened species</i>	1. % of fisheries for which impacts on threatened species have been assessed 2. % of fisheries that require measures to minimize impacts on <i>threatened species</i> that have such measures. 2.b. Coverage of <i>threatened species</i> impacted by fisheries for which there are bycatch limits 3. Coverage of fisheries with regular monitoring and reporting of impacts on <i>threatened species</i>	Coverage (or range of coverage) of <i>threatened species</i> for which mortality rate due to fisheries is decreasing	Coverage of <i>threatened species</i> experiencing significant adverse impacts from fisheries
D: Other species¹⁴	Actions	1. Policies to ensure that fisheries are managed and harvested using ecosystem-based approaches 2. Policies to secure that mortalities and significant indirect adverse impacts on <i>other species</i> are accounted for	1. Requirements for reporting on <i>other species</i> are in place, including catches and discards 2. Management measures in place to ensure that impact of fisheries on <i>other species</i> is within safe ecological limits	Mortalities and significant indirect adverse impacts on other species reduced where they exceed sustainable levels	The impacts of fisheries on <i>other species</i> are within Safe Ecological Limits (SEL)

¹¹ Further elaboration on the term may be required. The language in the FAO deep-sea guidelines may be used as a model.

¹² Trade related policies and measures not included here as they are more directly addressed in Aichi Targets 3 or 4.

¹³ Indirect impacts of fisheries on threatened species (e.g. on habitats) are not included here as they may be dealt with by Group 3 – Ecosystems.

¹⁴ “*Other species*” includes all species that are directly or indirectly impacted by one or more fisheries apart from those that have been identified as *target species* (A and B) or *threatened species* (C). See text for further explanation

	Indicators	<p>1. Policies to ensure that fisheries are managed and harvested using ecosystem-based approaches in place</p> <p>2. Policies to secure that mortalities and significant indirect adverse impacts on other species are accounted for are in place</p>	<p>1. Coverage of fisheries with mandatory bycatch reporting (species not covered in A, B or C)</p> <p>2. Coverage of fisheries with mandatory discards reporting (species not covered in A, B or C)</p> <p>3. Coverage of fisheries with management measures to reduce bycatch and discards</p>	Trends in population of other species not covered in A, B or C	Coverage of other species within Safe Ecological Limits (SEL)
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Binary indicators

The group noted that indicators for policy in this context could be binary representations of whether the policies were in place or not, supported by a narrative explanation.

Trade measures

The group discussed management measures and the potential relevance of trade protection agreements in this context. Some raised the issue of whether the inclusion of trade protection measures and incentives might then require also listing all other different types of measures. In the end it was agreed that a footnote would be added to suggest that ‘trade related measures are not included here as they should be addressed in Target 3 or 4’.

CBD-FAO cooperation

Another repeated dialogue concerned FAO - CBD interactions and how FAO can provide data and information to the CBD reporting process. A request for guidance from plenary was put in for recommendations as to what could be done within the scope of this report to encourage interaction between FAO and CBD and encourage CBD to use existing FAO reporting mechanisms to reduce paperwork, and more broadly how collaboration can be encouraged across scales (i.e. at national and international levels)¹⁵.

Focus on fisheries’ impacts

Moving on to State and Outcome indicators, effort was made to focus on impacts of fisheries on ecosystems rather than on the state of the ecosystem in general which is impacted by many other economic and natural factors.

Partial reporting

Another suggestion to reduce the reporting burden was that there should be some potential to allow parties to only respond to the most detailed indicators (i.e., state or outcome) if they had detailed quantitative information on these aspects.

Quantitative versus qualitative indicators and narratives

¹⁵ This was taken up in Plenary, See section 1.4.5 both with regards to CBD using FAO reporting mechanisms and FAO being inclusive of CBD and its expertise in interpreting the fisheries data being reported.

Lastly it was reiterated that the values used in the indicators may come from quantitative and qualitative methods, even if they were numeric. The use of both narratives and quantitative indicators can facilitate the inclusion of various types of knowledge. The relevance of the language used in the FAO 2009 Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries on the subject of assessing current state and trends in target stocks (§ 32) was discussed. The text states: *There are many ways in which state and trends in stocks may be evaluated, that fall short of the highly quantitative and data-demanding approaches to stock assessment that are often used for large scale fisheries in developed countries. Use of less elaborate methods for stock assessment should not preclude fisheries from possible certification for ecolabelling. However, it should be noted that, to the extent that the application of such methods results in greater uncertainty about the state of the “stock under consideration”, more precautionary approaches to managing fisheries on such resources will be required which may necessitate lower levels of utilization of the resource. There is a variety of management measures commonly used in small scale or low value fisheries that nonetheless can achieve quite adequate levels of protection for stocks in the face of uncertainty about the state of the resource. A past record of good management performance could be considered as supporting evidence of the adequacy of the management measures and the management system.*

3.3 GROUP 3 –ECOSYSTEMS INCLUDING VULNERABLE ECOSYSTEMS

Group 3 addressed the following element of Target 6: *By 2020 ... fisheries have no significant adverse impacts on ...vulnerable ecosystems and the impacts of fisheries on ...ecosystems are within safe ecological limits.*

3.3.1 Introductory remarks

Safe ecological limits

The group discussed the definition of “*safe ecological limits*”, which is a term that occurs in many United Nations documents often without a clear operational definition. It was agreed upon that in the context of this discussion such definition would at least include that: impacts are reversible in a biologically or ecologically reasonable time (where “reversible” would mean that if an ecosystem was changing in response to a pressure and the pressure were released, the system would begin to move back in the direction from which it had been changed). However, there was no certainty in the group that reversibility alone would be sufficient to capture fully the intent of “*safe ecological limits*”. This is something different from the absence of *significant adverse impacts*. The latter are understood here as defined operationally in the FAO Deep-Sea Fishery Guidelines – and the definition was referred to when the Target was developed.

In the case of stocks, it is generally feasible to translate the analogous concept of “safe biological limit” into quantitative reference points provided sufficient data are available to assess the stock. However, because marine ecosystems are complex, dynamic, and open, and despite the amount of modelling work developed so far, consensus on “*safe ecological limits*” for fishing impacts at ecosystem levels has not been reached. There has also been much work investigating indicators of fishing impacts on fish communities, habitats, and

ecosystems, but reference points for these indicators have only been proposed in a limited number of instances. In most cases, these reference points were rules of thumb rather than theoretically derived and/or empirically estimated values.

Therefore, the group agreed that, if “*safe ecological limits*” were not available, at least Parties could report about progress towards conditions consistent with the Target, which will raise awareness of ecosystem impacts and possible mitigation measures as well as providing the information that will be helpful in defining *safe ecological limits* in the future.

As a consequence, the first step of the assessment comprises establishing a list of the known potentially adverse impacts and issues generated by fishing activities at the ecosystem level in the Party’s jurisdiction. Such a list could come from prior investigations conducted in the specific ecosystem under review, or if such information were not available, from experience with similar ecosystems and fisheries in better studied areas. The report then proceeds to evaluate which responses have been provided to address these impacts, and whether these responses are likely to be effective or informative (depending on their intent).

The group acknowledged that trends in indicators are not sufficient to conclude that target 6 has been achieved, until *safe ecological limits* are defined fully, and estimated for the indicators that are used. Most participants thought that estimating such reference points for ecosystem indicators is not yet possible in most parts of the world given the current state of knowledge of ecosystem processes and development of ecosystem models; work is ongoing and should be amplified. *Safe ecological limits* can be related to the recovery potential of impacted items within a time-frame appropriate to the ecosystem. This time-frame is likely to be specific to ecosystems, functional units within ecosystems or even to different types of ecosystem-impact combinations. A simple example was discussed: fisheries should not impact habitats faster than their recovery rate. To evaluate this, a list of vulnerable habitats could be provided, the indicator would be the amount (e.g. area) of vulnerable habitat adversely impacted. The “*safe limit*” (expressed as an appropriate measure of habitat impacted that may be tolerated) would depend on the type of habitat, taking into account *inter alia* vulnerability and productivity. For example, habitats known to have relatively high recovery potential (such as soft substrates in moderate or high energy areas) typically would have faster rotation rates between fishery disturbances than habitats with very slow recovery potential (such as many hard biogenic habitats).. “*Safe limits*” could be proposed based on existing knowledge of recovery rates of comparable habitats, e.g. a given proportion of a habitat type should be maintained in an undisturbed condition through spatial management of fishing pressures (e.g., gear restrictions, fishery rotation, or spatial closure).

Data limitations

Data issues were also discussed, in relation to the fact that many of the Parties who will have to report are countries with limited capacity to monitor fisheries or ecosystems. Parties should always use the best information available in their reporting. For Parties with limited science and monitoring capacity, even simple information such as catch level and composition, and basic habitat mapping might not be available, but if available, should be reported. In such cases assessments can also benefit from information in global data

bases, including FAO catch statistics, although. Some of these global data are more likely to be related to fishing pressure than to ecosystem state, but may be illustrative of trends in relevant variables on global and regional scales.

Relationships to other Aichi Targets, and ecosystem services, were also mentioned as relevant to reporting about progress towards the ecosystem part of Target 6.

3.3.2 Actions and indicators

Scope of the indicator set

It was proposed to merge the discussion on “*Vulnerable Ecosystems*” with that on “*Ecosystems*” with the requirement to maintain *structure and function* and to merge both assessments into a single section labeled “*Ecosystem properties potentially impacted by fisheries*”. Indeed, this is what Target 6 deals with in that Element. The concern is not about ecosystem status overall, but rather about potential and actual impacts by fisheries. The expression “*Vulnerable ecosystems*” was interpreted to explicitly include all “*Vulnerable Marine Ecosystems*” in the sense of UNGA Resolution 61/105 and the FAO Deep Sea Fisheries Guidelines, whether inside or outside EEZs. However, it would also include other habitat types and ecosystems, in inland, coastal, and shelf seas, if they displayed vulnerability-related features similar to those meeting the Deep Sea Fishery criteria for VMEs and the CBD EBSA criteria.

It was discussed that indicators in **Table 3** (below) should be evaluated against criteria specifically relevant to Target 6: data availability at national and regional levels, feasibility of calculating the indicator within the next four years, and ability to define “*safe limits*”.

Although it was not possible to complete a thorough review of this report, the group was informed that the indicators discussed by the AHTEG were chosen in light of various constraints such as global coverage and accessibility of the data. The group observed that this resulted in a list of indicators focused largely on fishing pressure, with a notable absence of indicators of fishing impacts at the ecosystem scale and that this list should be complemented to include:

- Indicators of fishing impacts on ecosystem properties, structure and functions in addition to indicators of fishing pressure and species-level indicators. Fishing impact indicators are more appropriate to define safe ecological limits.
- Indicators based on fisheries-independent monitoring surveys.
- Indicators selected under criteria that are in addition to global data coverage. This would allow Parties to report on their national efforts in monitoring and assessing ecosystem status, and in some cases to use their local expertise in determining safe ecological limits of fishing impacts at the ecosystem level.

Monitoring

Although the group did not discuss monitoring in detail, it noted that reporting the states of marine exploited ecosystems and ecosystem fishing impacts would be limited if such reporting relied exclusively on commercial catch and effort data with global spatial coverage, existence of long time series, and ready access. Ideally, ecosystem state and

impacts of various pressures, including fishing are better monitored by fishery-independent surveys. It was also noted that monitoring programmes benefit from being related to management objectives, with relevant spatial and temporal coverage. It is desirable that Parties report both pressure and impact indicators, however, when it is not possible then at least fishing pressure indicators should be reported. In the longer term greater accessibility of national scientific surveys, and strengthening monitoring capacities in developing countries are key to improving the ability to report fishery impacts on ecosystems in the future.

Assessing

There is a wealth of ecosystem and biodiversity indicators of fishing impacts that are monitored around the world, and methods have been developed to use them in integrated ecosystem assessments. However, these indicators (size-based, species-based, foodweb, habitat indicators) are not reported here in detail. The scientific community is working on these issues, and needs to better understand and document how ecosystem indicators of fishing impacts respond to fishing pressure, and use that understanding for selection of appropriate indicators and setting benchmarks. This understanding needs to take into account that marine ecosystems have different structure and functioning, different fishing histories, undergo various multispecies and spatial fishing management strategies, and are subject to other impacts of environmental change and variability. In this regard, to build the future and put the Parties in better position to achieve Target 6 and report, the science must fully accompany the process and be supported at national and international levels.

Examples of state indicators that could inform such assessments and were discussed include:

- Size-based indicators: The Large fish indicator (Proportion of large fish in the species community)¹⁶
- Food-web indicators: E.g. trophic level in the community, biomass of functional groups
- Species-based indicators: E.g. abundance or biomass of sensitive species or keystone species (for example, habitat building species, nodal species in wasp-waist food-webs, herbivore species in coral reefs)
- Total catch: Potentially reported by fishery or by ecosystem and should ideally be reported relative to a unit of production, e.g. surface area, primary production, or biomass of target assemblage
- Catch of vulnerable species: to be related to total catch, or some unit of effort, if possible. Vulnerable species include those of which changes in presence are important, i.e. low-productivity, threatened species, and key species.

¹⁶ http://www.helcom.fi/core%20Indicators/HELCOM-CoreIndicator-Proportion_of_large_fish_in_the_community.pdf

- Trophic level of the community (survey-based) is a fishing impact indicator; trophic level of the catch is a fishing pressure indicator.

Reporting capacity

During the meeting, it was emphasized that the reporting capacity of the Parties at the national level should be considered at a time horizon beyond 2020. In that context the challenges met by Parties in reporting on Target 6 in 2020 should encourage them to expand the efforts taken to monitor and assess the ecosystem status in the future. Such monitoring information and assessments are invaluable to support management towards reducing fishing impacts on ecosystems and allowing the ecosystems to achieve and be maintained within *safe ecological limits*.

3.3.3 Matrix of actions and indicators

Table 3. Actions and indicators of relevance for *Ecosystems*, including *vulnerable marine ecosystems*. Policies and Laws aim at sustainable use. Outcomes are as specified in Aichi Target 6. Indicators refer to fisheries impacts on ecosystems, not to state of the ecosystems in general, which may result from other impacts.

		1: Policies and laws are in place	2: Management measures in use	3: State	4: Outcome
E: Ecosystem properties	Actions	1. Inventory of potential impacts developed 2. Vulnerable ecosystems identified 3. Policies to manage the impacts in an EBFM/EAF perspective adopted. 4. Legal mandate to adopt, implement, and enforce measures preventing significant adverse impacts exists	1. Measures to monitor ecosystem impacts of fishing and the progress towards the goals below 2. Measures to avoid, minimize, or mitigate significant adverse impacts on structure and function, such as spatial and temporal management, gear management, mesh sizes and minimum landing sizes, aggregate catch limits, to: <ul style="list-style-type: none"> • Maintain extent, quality and integrity of habitats • Reduce significant adverse impacts of fishing with bottom-touching fishing gears • Reduce bycatch of unmarketable fish and invertebrates. • Reduce discarding. • Reduce incidental mortality on birds, turtles, and mammals and other vulnerable bycatch species • Keep aggregate catches of functional groups from depleting the aggregate units to levels where their function in the ecosystem may be compromised • Measures to minimize loss of gears (littering) and ghost fishing 	1. Governance mechanisms in place (ex: management plans, MSP, CBM) 2. Assessment of potential significant adverse impacts. 3. Assessment of ecosystem state (structure, function, important components) 4. Assessment of fishing pressure. 5. Assessment of effectiveness of species management and governance measures	1. Ecosystem impacts reduced to a level within Safe Ecological Limits. 2. Potential for recovery of ecosystem structure and function is enhanced and maintained

E: Ecosystem properties	Indicators	<ol style="list-style-type: none"> 1. Coverage of policies adopting ecosystem structure references 2. Coverage of management plans consistent with EAF 3. Presence of legislation allowing actions protection of vulnerable habitats (including VMEs), and addressing threats to ecosystem structure and function 	<ol style="list-style-type: none"> 1. Measures in place related to potential ecosystem impact reduction objectives 2. Existence of ecosystem impact monitoring and/or assessment programmes 3. Existence of governance arrangements that are effective in implementing measures 	<p>Governance indicators</p> <ol style="list-style-type: none"> 1. Answers to COFI questionnaire (minimal) 2. Uptake of ecosystem management measures in the fisheries (desired) 3. Level of compliance with these measures (desired) <p>Fishing impact indicators (desired):</p> <ol style="list-style-type: none"> 1. Size-based 2. Food-web 3. Species-based <p>Fishing pressure indicators</p> <ol style="list-style-type: none"> 1. Amount (spatial extent, gear type, intensity) of fishing effort within vulnerable habitats (desired) 2. Total catch (minimal) relative to best estimate of production (desired) 3. Catch of vulnerable species (minimal) 	<ol style="list-style-type: none"> 1. Trends in ecosystem impacts 2. Improvements in the indicators in Col (3) 3. Habitat rebuilding 4. Vulnerable species rebuilding

IV. ADVICE EMANATING FROM THE EXPERT MEETING

Based on discussions during the plenary sessions and breakout groups, the meeting put forward the following advice, distinguishing the actions needed in the short term (i.e. to optimize reporting by 2020) from those needed in the longer term (to improve reporting capacity and quality in the future).

4.1 ADVICE FOR IMPROVED REPORTING BY 2020

- Actions taken to achieve Aichi Target 6 fall within and are consistent with implementation of UNCLOS, the FAO CCRF and EAF. As such, actions taken by countries and requirements for national reporting on progress towards Aichi Target 6 overlap considerably with the mandate of FAO’s Committee on Fisheries (COFI) and FAO members’ commitments and reporting to COFI on their efforts towards responsible fisheries. If properly designed and implemented, greater harmonization of reporting to CBD on implementation of Aichi Target 6 and to FAO on fisheries statistics and implementation of the CCRF would reduce the burden on countries and improve the quality of information reported to both organizations. The different timing and format of reporting by Parties to the CBD and FAO Member States, and the fact that different national authorities may be responsible for reporting to each organization present some obstacles to such harmonization.

Notwithstanding those challenges, this workshop advised that early steps towards 2020 should include the Secretariats of the two organizations exploring the opportunities for greater harmonization/collaboration.

- It was recognized that the web-based questionnaire used by FAO and the related reporting process could offer a useful means of collecting information for reporting on Aichi Target 6 and discussions indicated that modifications could be made if necessary.

The meeting advised to consider improving the questionnaire through a collaborative effort between FAO and CBD to ensure full consistency with the arguments of Aichi Target 6.

- Data collection and assessment of stocks the distribution of which extend or is entirely beyond national jurisdiction is very often cooperatively assessed in Regional Fishery Bodies (RFBs). In such cases, in order to benefit from processes already in place, reducing national burden and ensuring coherence between national reports, the Parties to these RFBs could use the RFBs agreed assessment as the core information sources to report (and the compilation process will need to avoid double-counting) or, if agreeable, defer that part of the reporting to RFBs, although the group noted that reporting to the CBD is done solely by Parties through their national reports. It would be therefore be useful to have this important issue raised and resolved in RFBs by their Parties.

The meeting advised that, for reasons of timeliness, and in order to further raise awareness of RFBs on Target 6 reporting, the issue could be discussed at the next Coordinating Meeting of RFBs, organized at the same time as the FAO Committee on Fisheries (COFI) in Rome.

- Two important objectives to be pursued/achieved at the horizon of 2020 are: (1) evaluating the performance of ecosystem indicators of fishing impacts and make specific recommendations for the selection of indicators for target 6 of the Strategic Plan; and (2) establishing guidelines to determine safe ecological limits (i.e. reference levels) for ecosystem impacts of fishing. There are activities on-going in both the FAO and CBD communities that can contribute to these objectives.

These actions, in turn, may trigger development of appropriate decision rules and incorporating them into current management procedures. Roadmaps exist today to make scientific progress, so capacity needs to be strengthened to fully encompass the ecosystem dimension.

The meeting advised the CBD and FAO to identify opportunities for collaboration, in this regard. It encouraged them to prepare at least interim reports of their progress in these matters taking into account the 2020 deadline for the achievement of Target 6 and the forthcoming 6th national reporting process under the CBD.

- The experts spent quite some time discussing the concept of *significant adverse* impact as understood in the FAO Deep sea fisheries guidelines –in relation to vulnerable ecosystems– and its potential application to *Threatened species*.

No conclusion was reached and the meeting advised on the need to undertake some effort to clarify the potential scope of an application of the concept to “species” and in that regard, its relation to the concept of *safe biological limits*.

- In order to facilitate reporting relevant to progress against Target 6, it is important that all Parties are aware of and have access to relevant regional and global datasets, monitoring protocols and reporting tools, plus the capacity to use and analyse such data. This would allow Parties to improve their national assessments relative to regional and global norms, particularly in data-limited situations. Over the longer term, improved use of databases such as FAO datasets and OBIS and other relevant global and publically available databases, and increased local contribution to those global datasets through improved and more uniform monitoring, will support evaluations of how effective alternative management approaches have been in reducing fishing impacts while retaining (or improving) long-term sustainable fisheries.

The meeting advised therefore that efforts be made by CBD and FAO to encourage the owners of regional and global data sets relevant for the evaluation of Target 6 implementation to put the data at disposal of the community.

4.2 ADVICE FOR LONGER-TERM CAPACITY-BUILDING

Scientific and technical capacity-building

The areas in which cross-cutting skills and capacities need building up to increase reporting quality on all elements of Target 6 include: (i) Data collection and management; (ii) Legal competence; (iii) Policy development; and (iv) Fisheries management.

Fisheries management capacity –including in implementing EAF, rights allocations, research and monitoring, consultation and co-management and enforcement– is weak in many developed countries and what capacity there is, is typically directed towards the target species of economically valuable fisheries. In such countries, strengthening capacity for all components of management is important for achieving Aichi Target 6, particularly for threatened and neglected species that are of less, or less obvious, social and economic importance. This also includes institutional capacity related to implementation of adaptive management cycles (through the steps of data collection, assessment, provision of advice, decision-making, management action, monitoring and performance evaluation, and correction, as necessary) that while fundamental in modern fisheries management are often non-existing or poorly developed. Within this scope, capacity development for implementation of co-management (thereby strengthening compliance) and for enforcement may deserve special mention. More specifically for the two main Elements of Target 6; species/stocks and ecosystems:

- *Target species, Depleted species, Threatened species and Other species:* (i) Improved ability for undertaking data-poor assessments of status and trends in stocks and communities, for life history analyses and for assessing risks of extinction; (ii) Multi-species stock assessment methods; (iii) Application of EAF methods, tools and models; (iv) Training of inspectors and observers; (v) Fishery biology; and (vi) Fishery management (particularly co-management) and enforcement (to strengthen compliance); (vii) Gear technology and design to promote fishing gear and practices that minimize impacts on *Threatened species, Other species* and living habitats.

- *Ecosystems*: (i) Ecosystem modelling; (ii) Development of ecosystem indicators; (iii) Habitat mapping; (iv) Mapping of fishing effort/pressure; (v) Identification of species in multiple species contexts; (vi) Application of EAF methods, tools and models; (vii) Fishery independent monitoring; (vii) Cross-training of biodiversity and fisheries specialists to increase competence to utilize fisheries data in the biodiversity context; and (viii) Training on Marine Spatial Planning (MSP) tools.

The meeting noted that FAO, CBD and countries could pool forces to: (i) organize specific training courses on the above matters; (ii) prepare publications and guidelines; and (iii) develop web-based instruments containing useful information relevant to reporting, and developing skills on how to use them.

The meeting also advised that developing and pooling of such skills at regional level (e.g. by RFBs, Regional Seas Organisations and other regional bodies) could be valuable in providing such capacity, in particular to developing countries.

4.3 SYNOPSIS ON ACTIONS AND INDICATORS

Table 4: Actions and indicators of relevance to Target 6 implementation. Policies and Laws aim at sustainable use. Outcomes are as specified in Aichi Target 6. Threatened species are species on which fisheries have a significant adverse impact. Other species are species not otherwise covered in A, B or C. Ecosystem properties are those properties potentially impacted by fisheries. The elements on the state of stocks, species and ecosystems relate strictly to impacts from fisheries. The impact of other factors is not considered.

		1: Policies and laws are in place	2: Management measures in use	3: State	4: Outcome
A: All Target species	Actions	1. International agreements translated into national legislation 2. National fisheries policy implemented 3. EBFM/EAF in policy documents	1. Capacity management plan 2. EBFM/EAFM measures 3. Proper incentives in place. Reliable data on fishing operations and catches with regular stock assessment 4. Controls on fishing capacity & catches	1. Stock status evaluated against relevant benchmarks. 2. Harvested sustainably, within safe (stock) limits	Overfishing avoided
	Indicators	1. Number and coverage of stocks with adaptive management systems / plans 2. Number and coverage of MCS systems in place (including IUU assessment)	1. Number and coverage of stocks with effort or catch limits 2. Number and coverage of stocks with capacity to adjust effort or catch levels in relation to status	1. Coverage of stocks sustainably harvested based on assessments of B and F or surrogates; 2. Coverage of stocks within safe limits	1. Coverage of stocks with unknown status 2. Coverage of stocks that are not overfished 3. Coverage of stocks that are overfished or depleted

B: Depleted Target species	Actions	Policy goals, legislation and incentives in place for bycatch/discards	<ol style="list-style-type: none"> 1. Recovery plans and measures in place for depleted species, Closures. Mandatory discards reporting or bans. 2. Species status monitored. Discard levels assessed 3. Recovery plans and measures in place, Closures. Mandatory discards reporting or bans. 4. Species status monitored.. Discard levels assessed 5. Recovery plans and measures in place, Closures. Mandatory discards reporting or bans. 6. Species status monitored. Discard levels assessed 	<ol style="list-style-type: none"> 1. Depleted species are rebuilding towards safe biological limits 2. Bycatch/discard species within safe biological limits 	Trajectory to recovery is secure
	Indicators	Presence of regulations requiring recovery of depleted species	Depleted species designated and with recovery plans developing or adopted	Number and coverage of depleted stocks with rebuilding plan in place	<ol style="list-style-type: none"> 1. Number and coverage of depleted species with $F < F_{lim}$ 2. Number and coverage of depleted species with increasing biomass
C: Threatened Species	Actions	<ol style="list-style-type: none"> 1. Policies make adequate provisions to minimize impacts of fisheries on threatened species. 2. Legal provisions in place. 	Protection measures in place. Species status regularly monitored.	Direct and indirect impacts of fishing kept low. Populations are increasing. Conservation status is improved.	No significant ¹⁷ adverse impacts of fisheries on <i>threatened species</i>
	Indicators ^{18,19}	<ol style="list-style-type: none"> 1. Policies make adequate provisions to minimize impacts of fisheries on <i>threatened species</i>. 2. <i>Threatened species</i> 	<ol style="list-style-type: none"> 1. % of fisheries for which impacts on threatened species have been assessed 2. % of fisheries that require measures to minimize impacts on <i>threatened species</i> that have such measures. <ol style="list-style-type: none"> 2.b. Coverage of <i>threatened species</i> impacted by fisheries for which there are bycatch limits 3. Coverage of fisheries with regular monitoring and reporting of impacts on <i>threatened species</i> 	Coverage (or range of coverage) of <i>threatened species</i> for which mortality rate due to fisheries is decreasing	Coverage of <i>threatened species</i> experiencing significant adverse impacts from fisheries

¹⁷ Further elaboration on the term may be required. The language in the FAO deep-sea guidelines may be used as a model.

¹⁸ Trade related policies and measures not included here as they should be addressed in Target 3 or 4.

¹⁹ Indirect impacts of fisheries on threatened species (e.g. on habitats) are not included here as they may be dealt with as part of Group 3.

D: Other species²⁰	Actions	<ol style="list-style-type: none"> 1. Policies to ensure that fisheries are managed and harvested using ecosystem-based approaches 2. Policies to secure that mortalities and significant indirect adverse impacts on <i>other species</i> are accounted for 	<ol style="list-style-type: none"> 1. Requirements for reporting on <i>other species</i> are in place, including catches and discards 2. Management measures in place to ensure that impact of fisheries on <i>other species</i> is within safe ecological limits 	Mortalities and significant indirect adverse impacts on other species reduced where they exceed sustainable levels	The impacts of fisheries on <i>other species</i> are within safe ecological limits (SEL)
	Indicators	<ol style="list-style-type: none"> 1. Policies to ensure that fisheries are managed and harvested using ecosystem-based approaches in place 2. Policies to secure that mortalities and significant indirect adverse impacts on other species are accounted for are in place 	<ol style="list-style-type: none"> 1. Coverage of fisheries with mandatory bycatch reporting (species not covered in A, B or C) 2. Coverage of fisheries with mandatory discards reporting (species not covered in A, B or C) 3. Coverage of fisheries with management measures to reduce bycatch and discards 	Trends in population of other species not covered in A, B or C	Coverage of other species within safe ecological limits (SEL)
E: Ecosystem properties	Actions	<ol style="list-style-type: none"> 1. Inventory of potential impacts developed 2. Vulnerable ecosystems identified. 3. Policies to manage the impacts in an EBFM/EAF perspective adopted. 4. Legal mandate to adopt, implement, and enforce measures preventing significant adverse impacts exists. 	<ol style="list-style-type: none"> 1. Measures to monitor ecosystem impacts of fishing and the progress towards the goals below. 2. Measures to avoid, minimize, or mitigate significant adverse impacts on structure and function, such as spatial and temporal management, gear management, mesh sizes and minimum landing sizes, aggregate catch limits, to: <ul style="list-style-type: none"> • maintain extent, quality and integrity of habitats. • reduce significant adverse impacts of fishing with bottom-touching fishing gears in *reduce bycatch of unmarketable fish and invertebrates. • reduce discarding. • reduce incidental mortality on birds, turtles, and mammals and other vulnerable bycatch species. • Keep aggregate catches of functional groups from depleting the aggregate units to level where their function in the ecosystem may be compromised • Measures to minimize loss of gears (littering) and ghost fishing. 	<ol style="list-style-type: none"> 1. Governance mechanisms in place (ex: management plans, MSP, CBM) 2. Assessment of potential significant adverse impacts. 3. Assessment of ecosystem state (structure, function, important components). 4. Assessment of fishing pressure. 5. Assessment of effectiveness of species management and governance measures 	<ol style="list-style-type: none"> 1. Ecosystem impacts reduced to a level within Safe Ecological Limits. 2. Potential for recovery of ecosystem structure and function is enhanced and maintained.

²⁰ “*Other species*’ includes all species that are directly or indirectly impacted by one or more fisheries apart from those that have been identified as *target species* (A and B) or *threatened species* (C). See text for further explanation

	Indicators	<ol style="list-style-type: none"> 1. Coverage of policies adopting ecosystem structure references. 2. Coverage of management plans consistent with EAF. 3. Presence of legislation allowing actions protection of vulnerable habitats (including VMEs), and addressing threats to ecosystem structure and function 	<ol style="list-style-type: none"> 1. Measures in place related to potential ecosystem impact reduction objectives. 2. Existence of ecosystem and impact monitoring and/or assessment programmes. 3. Existence of governance arrangements that are effective in implementing measures 	<p>Governance indicators</p> <ol style="list-style-type: none"> 1. Answers to COFI questionnaire (minimal) 2. Uptake of ecosystem management measures in the fisheries (desired) 3. Level of compliance with these measures (desired) <p>Fishing impact indicators (desired):</p> <ol style="list-style-type: none"> 1. Size-based 2. Food-web 3. Species-based <p>Fishing pressure indicators</p> <ol style="list-style-type: none"> 1. Amount (spatial extent, gear type, intensity) of fishing effort within vulnerable habitats (desired) 2. Total catch (minimal) relative to best estimate of production (desired) 3. Catch of vulnerable species (minimal) 	<ol style="list-style-type: none"> 1. Trends in ecosystem impacts 2. Improvements in the indicators in Col (3) 3. Habitat rebuilding 4. Vulnerable species rebuilding
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ANNEX I – LIST OF PARTICIPANTS

Surname	Organisation
Anganuzzi, A.	FAO
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Garcia, S. M.	IUCN-CEM-FEG
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Koranteng, K.	FAO
Mannini, P.	FAO
Mattana, P.	EBCD staff
McOwen, C.	WCMC
O'Brien, C.	FAO
Oddsson, G.	Nordic Council of Ministers
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Parma, A.	Cent. Estudio de Sistemas Marinos. Centro Nacional Patagónico-CONICET
Prince, J.	Consultant. Asia-Pacific
Reeves, J.	DG MARE, European Commission
Rice, J.	FEG/CBD
Rochet, M-J.	Ifremer
Shin, Y. J..	IRD/Indiseas
Suuronen, P.	FAO
Symons, D.	EBCD
Tandstat, M.	FAO
Tokunaga, K.	Ocean Alliance. Tokyo University, Japan
Tsuji, S.	FAO
Ye, Y.	FAO

ANNEX II – AGENDA

Plenaries
Break-out groups

Tuesday 9 February 2016	
09:00-09:15	Welcome by the host (FAO); Brief speech by FAO, CBD and FEG
09:15-09:30	Nomination of office bearers: Chair or Co-chairs and Rapporteur(s).
09:30-09:40	Adoption of the Draft Agenda and time table.
09:40-10:00	Practical information: Working procedures, rooms, breaks
10:00-11:00	Presentations of reporting commitments and processes by FAO and the CBD. Overview of the background document. Presentation of the working process.
11:00-11:15	Coffee
11:15-12:30	Break-out groups: (1) Target species; (2) Bycatch species; (3) Ecosystems
12:30-14:00	Lunch
14:00-17:30	Break-out groups
Wednesday 10 February 2016	
09:00-09:30	Interim reporting on break-out groups.
09:30-12:30	Break-out groups
12:30-14:00	Lunch
14:30-17:30	Break-out groups
Thursday 11 February 2016	
09:00-10:30	Interim reporting on break-out groups. Open discussion
10:30-10:45	Coffee
10:45-12:30	Open discussion (continuing)
12:30-14:00	Lunch
14:30-16:30	Drafting of the whole report
16:30-17:30	Discussion of the whole report
17:30	Closure of the meeting