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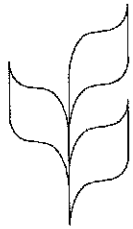
**Ninth Global Meeting of the Regional Seas
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**Integration of Outcome-oriented Targets into the Programmes of Work of the Convention,
Taking into Account the 2010 Biodiversity Target, the Global Strategy for Plant
Conservation, and Relevant Targets set by the World Summit on Sustainable Development**
Addendum

Conference of the Parties to the Convention on Biological Diversity-Seventh Meeting

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**CONVENTION ON
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CONFERENCE OF THE PARTIES TO THE
CONVENTION ON BIOLOGICAL DIVERSITY
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Item 26 of the provisional agenda*

**INTEGRATION OF OUTCOME-ORIENTED TARGETS INTO THE PROGRAMMES OF
WORK OF THE CONVENTION, TAKING INTO ACCOUNT THE 2010 BIODIVERSITY
TARGET, THE GLOBAL STRATEGY FOR PLANT CONSERVATION, AND RELEVANT
TARGETS SET BY THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT**

Addendum

***Outcome-oriented targets for the implementation of the elaborated programme of work on
marine and coastal biological diversity***

Note by the Executive Secretary

I. INTRODUCTION

1. This note presents, for the consideration of the Conference of the Parties, the revised outcome-oriented targets for the implementation of the elaborated programme of work on marine and coastal biological diversity. The development of targets is part of the process of elaborating the programme of work on marine and coastal biological diversity according to guidance given by SBSTTA in its recommendation VIII/3 A.
2. Specifically, the targets were developed in response to paragraph 2(i) of recommendation VIII/3 A. In this paragraph, SBSTTA requested the Executive Secretary to set clear targets for the implementation of activities, taking into account the Plan of Implementation of the World Summit on Sustainable Development and the Strategic Plan of the Convention. In response to this request, the Executive Secretary, with the assistance of an electronic peer review group, produced a note on outcome-oriented targets for the implementation of the elaborated programme of work on marine and coastal biological diversity (UNEP/CBD/SBSTTA/9/14/Add.3). The resulting recommendation IX/13 requested the Executive Secretary to revise these targets based on the basis of the comments made by Parties at the ninth meeting of SBSTTA, or provided to the Executive Secretary no later than 21 November 2003.

* UNEP/CBD/COP/7/1.

3. The revised targets take into account comments received from Parties during SBSTTA, and thereafter, up to the deadline indicated in paragraph 2. In addition, in its recommendation IX/13, SBSTTA stressed that specific targets for the programmes of work should be developed as part of a coherent and strategic overall approach. In response to this request, the specific targets for the programme of work on marine and coastal biological diversity have been re-formulated so that they are as consistent as possible with the overall targets presented in the note by the Executive Secretary on evaluation of progress towards the 2010 biodiversity target: development of specific targets, indicators and a reporting framework (UNEP/CBD/COP/20/Add.3).

4. The draft targets are presented in the annex to this document. In each case, the overall target from the evaluation of progress towards the 2010 biodiversity target: development of specific targets, indicators and a reporting framework and its specific application to the marine and coastal environment, are presented. In some instances, the draft targets still require further elaboration or refinement of the quantitative elements. The Conference of the Parties may wish to decide that, in such cases, SBSTTA undertake further work on refining the targets, and that once finalized, the targets be incorporated into the elaborated programme of work on marine and coastal biological diversity.

5. In accordance with recommendation IX/13, indicators will be developed subsequent to the approval of the relevant goals and targets. This work will be streamlined with the development of global indicators. The Conference of the Parties may wish to decide that a liaison group be established to assist SBSTTA in the task of further refinement of targets and in the development of indicators for monitoring progress in achieving those targets.

6. Section II of this document describes the vision, mission, goals and targets of the programme of work on marine and coastal biological diversity. Section III discusses the relationship between the programme of work on marine and coastal biological diversity and other relevant processes. The proposed list of goals and targets are contained in the annex to this document.

II. VISION, MISSION, GOALS AND TARGETS OF THE PROGRAMME OF WORK ON MARINE AND COASTAL BIOLOGICAL DIVERSITY

A. Overall vision and mission

7. The overall vision and mission for the programme (as presented in the annex to the revised programme of work on marine and coastal biodiversity (UNEP/CBD/COP/7/12/Add.2)) is to halt the loss of marine and coastal biological diversity nationally, regionally and globally and secure its capacity to provide goods and services.

B. Mission

8. The overall goal of the programme of work on marine and coastal biodiversity, consistent with the Strategic Plan of the Convention and recommendation VIII/3 (and as presented in the annex of the revised programme of work on marine and coastal biodiversity (UNEP/CBD/COP/7/12/Add.2)), is to promote the implementation of the three objectives of the Convention and to achieve significant reduction of the current rate of marine and coastal biological diversity loss by the year 2010.

C. Goals and targets

9. Nine long-term goals, each with one to three related outcome-oriented targets for the year 2010, are proposed in the annex to the present document.

III. RELATIONSHIP BETWEEN THE PROGRAMME OF WORK ON MARINE AND COASTAL BIOLOGICAL DIVERSITY AND OTHER RELEVANT PROCESSES.

A. Millennium Development Goals

10. The implementation of the programme of work on marine and coastal biological diversity makes a direct contribution to the achievement of the Millennium Development Goals (MDGs), specifically its target 9, namely, to integrate principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources. Through its promotion of sustainable fisheries and aquaculture, the programme of work also contributes to target 2, which is to halve, between 1990 and 2015, the proportion of people who suffer from hunger.

B. Plan of Implementation of the World Summit on Sustainable Development

11. The following targets of the Plan of Implementation of the World Summit on Sustainable Development (WSSD) are completely consistent with the programme of work on marine and coastal biological diversity, and will be integrated (either directly or in a modified format as appropriate) into the programme of work:

(a) *Paragraph 29 (d)*: Encourage the application by 2010 of the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem ^{1/} and decision V/6 of the Conference of the Parties;

(b) *Paragraph 31 (a)*: Maintain or restore (fisheries) stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015;

(c) *Paragraph 32 (c)*: Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use; and watershed planning and the integration of marine and coastal areas management into key sectors; ^{2/}

(d) *Paragraph 33 (d)*: Make every effort to achieve substantial progress by the next Global Programme of Action conference in 2006 to protect the marine environment from land-based activities

(e) *Paragraph 36 (b)*: Establish by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments.

(f) *Paragraph 44*: The achievement by 2010 of a significant reduction in the current rate of loss of biological diversity.

12. In addition, the programme of work on marine and coastal biological diversity makes a direct contribution to the implementation of the following paragraphs of the Plan of Implementation of the World Summit:

(a) *Paragraph 31 (d)*: Urgently develop and implement national and, where appropriate, regional plans of action, to put into effect the international plans of action of the Food and Agriculture

^{1/} See Food and Agriculture Organization of the United Nations document C200/INF/25, appendix I.

^{2/} This wording is also consistent with SBSTTA recommendation VIII/3 A.

Organization of the United Nations (FAO), in particular the International Plan of Action for the Management of Fishing Capacity ^{3/} by 2005 and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing ^{4/} by 2004. Establish effective monitoring, reporting and enforcement, and control of fishing vessels, including by flag States, to further the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing;

(b) *Paragraph 58 (g)*: Develop community-based initiatives on sustainable tourism by 2004 and build capacities necessary to diversify tourism products, while protecting culture and traditions and effectively conserving and managing natural resources.

C. Biodiversity-related conventions, United Nations organizations and other relevant regional and international organizations and processes

13. The programme of work on marine and coastal biological diversity is consistent with the relevant provisions of the United Nations Convention on the Law of the Sea, the marine and coastal components of the Ramsar Convention on Wetlands, the regional seas programmes and action plans, the International Coral Reef Initiative, the Code of Conduct on Responsible Fisheries of the Food and Agriculture Organization of the United Nations, the Reykjavik Declaration on Responsible Fisheries in the Marine Environment, and activities of the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

14. In addition, elements are relevant to provisions of other conventions, including, *inter alia*, the Convention on Migratory Species, the Convention under the International Maritime Organization (Marpol), the World Heritage Convention and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

15. The programme of work on marine and coastal biological diversity also takes note of current regional initiatives, such as those undertaken by the regional seas programmes and action plans, and by regional fisheries organizations and conventions, such as, *inter alia*, the South East Asian Fisheries Development Center (SEAFDEC), Westerns and Central Pacific Fisheries Convention (WCPFC), the Indian Ocean Tuna Commission (IOTC), and the Commission for the Conservation of Southern Blue Fin Tuna (CCSRT).

^{3/} Rome, Food and Agriculture Organization of the United Nations, 1999.

^{4/} Ibid., 2001.

*Annex***DRAFT GLOBAL OUTCOME ORIENTED 2010 TARGETS FOR THE PROGRAMME OF WORK ON MARINE AND COASTAL BIOLOGICAL DIVERSITY****A. Introduction**

In accordance with decision VI/9, the targets presented here should be viewed as a flexible framework within which national and/or regional targets may be developed, according to national priorities and capacities, and taking into account differences in diversity between countries. Parties and Governments are invited to develop national and/or regional targets, and, as appropriate, to incorporate them into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans.

Actions to reach these targets should be undertaken in the context of the ecosystem approach, which is the primary framework for the implementation of the Convention. The importance of the ecosystem approach in ensuring the long-term productivity and sustainability of marine and coastal living resources and environments has also been highlighted by the World Summit on Sustainable Development.

The effective implementation of actions to reach these targets will require capacity-building and financial resources for developing country Parties, in particular the least developed and small island developing States among them. Therefore, Parties, other Governments, the financial mechanism, and funding organizations are invited to provide adequate and timely support towards work aimed at achieving these targets. In addition, there is a need for cooperation within and between regions and countries, for the provision of alternative livelihood options for coastal communities that depend largely on fisheries resources, and for ensuring the fair and equitable sharing of benefits arising from the use of marine and coastal genetic resources.

Goal 1. Maintain the diversity of ecosystems, habitats and biomes

Overall target 1.1: At least 10% of each of the world's ecological regions effectively conserved

Specific target 1.1 (Application to marine and coastal ecosystems): This target can be directly applied to marine and coastal ecosystems in the following way: at least 10% of each marine and coastal ecological region globally effectively conserved

Technical rationale

According to paragraph 6 of SBSTTA recommendation VIII/3 B, marine and coastal protected areas are an essential element in the conservation and sustainable use of marine and coastal biodiversity. However, current data indicates that less than 0.5% of the world's oceans are protected. The World Summit on Sustainable Development, in paragraph 31 (c) of its Plan of Implementation, adopted a target of developing a representative network of marine and coastal protected areas by 2012, and this target was also endorsed in paragraph 9 of recommendation VIII/3 B. The present target and target 1.2 should be viewed in the context of this 2012 target.

The purpose of the present target is to: (i) increase the area of marine environment included in marine and coastal protected areas; (ii) increase the representation of different habitats in marine and coastal protected areas, including ecosystems under-represented to date, such as those in areas outside of national jurisdiction, where such areas should be established consistent with international law, and based on scientific information; and (iii) increase the effectiveness of marine and coastal protected areas. Effective conservation in this context refers to either: (i) representative areas where extractive uses are excluded and other human pressures minimized; or (ii) areas where threats are managed for the purposes of biodiversity conservation and/or sustainable use (see SBSTTA recommendation VIII/3 B, para. 11). In

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order to be truly effective, and in accordance with SBSTTA recommendation VIII/3 B, marine and coastal protected areas should be embedded in a framework of sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment.

The target is consistent with SBSTTA recommendation IX/4 and with the recommendations of the World Parks Congress stating that there is an urgent need for action to address the severe under-representation of marine ecosystems in the global protected areas system. Recommendation 5.22 of the 2003 World Parks Congress, as well as recent research findings, ^{5/} indicate that approximately 20-30% of each marine habitat type should be protected in order to achieve sustainable use of living resources. The 20-30% figure could be viewed as a longer-term goal, which should be adjusted as required in the context of adaptive management. Management action should not be delayed in the hope of acquiring perfect knowledge and scientific understanding. On the contrary, better use of existing knowledge can be made in the design process, and management approaches adjusted in light of monitoring and research efforts that are oriented towards providing the necessary feedback for management.

This target aims at implementing the precautionary approach through protecting representative examples of ecosystem types of which relatively little is currently known. The target also implies greatly increasing the protection provided for ecosystems that have so far been under-represented. For areas outside of national jurisdiction, the World Parks Congress in recommendation 5.23 put forward a target figure of five high-seas marine protected areas by the year 2008. Such marine protected areas should be scientifically significant and globally representative, and, in accordance with SBSTTA recommendations VIII/3 and IX/4, be established consistent with international law, including the United Nations Convention on the Law of the Sea. Adequate monitoring and enforcement should also be implemented.

The target should be implemented in a broader context of the ecosystem approach, by which effective integrated marine and coastal area management (IMCAM), or equivalent approaches, should be applied to the entire marine and coastal environment. In addition, activities to reach this target should be implemented together with those associated with goals 4, 6, 7 and 8, which emphasize the need for a sustainable management framework for all human activities. Communication, education and outreach activities are also important to the success of this target.

Overall target 1.2: Areas of particular importance to biodiversity protected

Application to marine and coastal ecosystems: Particularly vulnerable marine and coastal ecosystems effectively protected, including at least 30% of known tropical and cold water coral reefs and seamounts, and [60%] of known nursery areas and spawning aggregations.

^{5/} For example, Roberts, C.M., B.S. Halpern, R. Warner, and S. Palumbia (2002) Designing marine reserve networks: why small, isolated protected areas are not enough. *Conservation Biology in Practice* 2: 9-17; J.A. Bohnsack⁵ B. Causey, M.P. Crosby, R.B. Griffis, M.A. Hixon, T.F. Hourigan, K.H. Koltes, J.E. Maragos, A. Simons and J.T. Tilmant (2000) A rationale for minimum 20-30% no-take protection. Proceedings of the 9th International Coral Reef Symposium, Bali, Indonesia, 2000; Botsford, L.W. and S.D. Gaines (2001) Dependence of sustainability on configuration of marine reserves and larval dispersal distance. *Ecology Letters*. 4: 144-150; Mangle, M. (2000) On the fraction of habitat allocated to marine reserves. *Ecology Letters* 3(1): 15-22.; Lindholm, J.P., P.J. Auster, M. Ruth, and L. Kaufman (2000) Modeling the effects of fishing and implications for the design of marine protected areas: Juvenile fish responses to variations in seafloor habitat. *Conservation Biology* 15: 424-437; Bohnsack, J.A. (2000) A comparison of the short term impacts of no-take marine reserves and minimum size limits. *Bulletin of Marine Science* 66: 615-650.

Technical rationale

The Conference of the Parties has consistently emphasized the importance of coral reefs and their vulnerability, as is evident in the language of decisions IV/5, V/3 and VI/3. In keeping with these decisions, this target aims to provide increased protection for vulnerable ecosystems, such as coral reefs, seamounts, nursery areas and spawning aggregations. Although the target specifies these particular ecosystems and areas, it also recognizes that there are many other vulnerable marine and coastal ecosystems, and that action to protect them should also be taken in the context of this target.

This target reflects recent data from the Global Coral Reef Monitoring Network (GCRMN) and Coral Reef Degradation in the Indian Ocean (CORDIO) project, which concluded that reefs that are highly protected and are not stressed were better able to recover from bleaching events. The 30% target is based on recent research findings.^{6/} It also reflects recommendation VIII/3 B, paragraph 19, in which SBSTTA agreed on the need to protect seamounts and cold water coral reefs. It should be noted that effective protection in regards to seamounts and cold water coral reefs can be achieved through the application of tools, such as marine protected areas, or through prohibiting certain activities detrimental to their biodiversity, such as bottom trawling. The immediate and urgent need to manage risks to marine biodiversity of seamounts and cold water coral reefs, through, e.g. elimination of destructive fishing practices, has been highlighted in a number of international forums, including the recent fourth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, the World Parks Congress (recommendation 5.2.3 and the Congress document on emerging issues (UNEP/CBD/SBSTTA/9/INF/21/Add.4)), the 2003 Defying Ocean's End Conference, the Tenth Deep-Sea Biology Symposium, and the Second International Symposium on Deep Sea Corals. In addition, the implementation of effective monitoring and enforcement regimes is important for ensuring the effective application of this target.

The target also aims to increase protection of nursery and spawning areas by implementing time/area closures and other effective protection measures for nursery grounds and periods, including elimination of destructive fishing practices and gear. This acknowledges that the protection of nursery and spawning grounds is a critical step in the creation of sustainable fisheries and in the development of an ecologically functional marine protected areas network (and links it with overall target 7.1). Protection of nursery and spawning areas has been identified as a priority activity in decision IV/5 of the Conference of the Parties, and in paragraph 32 (c) of the Plan of Implementation of the World Summit. The Conference of the Parties may wish to request SBSTTA to undertake further work to determine a scientifically sound percentage target for the protection of nursery and spawning areas.

Goal 2. Maintain species diversity

Overall target 2.1: Maintain, restore or reduce the decline of populations of species of selected taxonomic groups

Overall target 2.2: Risk to currently threatened species reduced

*Combined application to marine and coastal ecosystems: **Effective programmes to conserve in situ, [90%] of the known globally threatened and endangered marine species established and implemented.***

^{6/} E.g. Hughes, T.P., Baird, A.H., Bellwood, D.R., Card, M., Connolly, S.R., Folke, C., Grosberg, R., Hoegh-Guldberg, O., Jackson, J.B.C., Kleypas, J., Lough, J.M., Marshall, P., Nyström, M., Palumbi, S.R., Pandolfi, J.M., Rosen, B. and J. Roughgarden (2003) Climate Change, Human Impacts, and the Resilience of Coral Reefs. *Science*, vol. 301: 929-933

Technical rationale

Reaching the overall target of significant reduction of the current rate of marine and coastal biological diversity loss by the year 2010 will require the effective maintenance and recovery of threatened species, including those listed in the IUCN Red List of Threatened Species (currently 737 marine species), in networks of protected areas or through other appropriate and effective management measures over the wider seascape. It will also require increased and urgent efforts to identify marine species whose life history or habitat requirements make them vulnerable to extinction and to add them to the lists of globally threatened and endangered species, where necessary, as well as to intensify efforts to prevent such vulnerable species from becoming globally threatened or endangered. It should be noted that as awareness of threatened and endangered marine and coastal species increases, it is likely that more of them will become listed, and current efforts, such as the Census of Marine Life, will likely increase our knowledge of existing marine species, as well as of their vulnerability. Because of this, the target refers to all *known* species.

Activities undertaken to reach this target should be coupled with efforts to identify, by 2010, all species that are globally endangered and threatened. The conservation of such not yet identified species is best undertaken through the use of precautionary tools, such as networks of highly protected MCPAs (see targets under goal 1). This target has been adapted from the 2003 World Parks Congress recommendation 5.04. The percentage (90%) may require further consultations, and to this end, the Conference of the Parties may wish to request SBSTTA to undertake further work to determine a scientifically sound target percentage. Ideally, measures should be undertaken to conserve *in situ* 100% of threatened and endangered species. Activities to reach this target should be implemented together with those associated with goals 1, 4, 6, 7, and 8 in order to emphasize the need to undertake species management in an ecosystem context.

Goal 3. Maintain genetic diversity

Overall target 3.1: Genetic diversity of crops, livestock, and of commercially harvested species of trees, fish and wildlife and other major socio-economically valuable species conserved, and associated indigenous and local knowledge maintained

Application to marine and coastal ecosystems: Further significant losses of known genetic diversity of commercially harvested fish and other major socio-economic marine and coastal species prevented.

Technical rationale

Genetic diversity is lost through reduction of population size caused by, for example, over-harvesting (as is the case in species targeted by unsustainable fisheries), habitat alteration and destruction, toxic materials, and invasive species. The loss of genetic diversity in the seas and coastal areas is not well documented, but is thought to be substantial because historical over-fishing has caused massive reduction in the abundance of large consumer species. ^{7/} Small populations contain less genetic

^{7/} Jackson, J.B.C., Kirby, M.X., Berger, W.H., Bjorndal, K.A., Botsford, L.W., Bourque, B.J., Bradbury, R.H., Cooke, R., Erlandson, J., Estes, J.A., Hughes, T.P., Kidwell, S., Lange, C.B., Lenihan, H.S., Pandolfi, J.M., Peterson, C.H., Steneck, R.S., Tegner, M.J. and R.R. Warner (2001) Historical overfishing and the recent collapse of coastal ecosystems. *Science*, Vol 293, pp. 629-638.

variation than large ones, reducing their adaptability, for example, to climate change, and their ability to recover from over-harvesting, as is thought to be the case with the northern right whale. This goal aims to conserve genetic diversity among and within populations in order to increase the capability of populations and individual species to adapt to rapid environmental change. Because genetic diversity of marine and coastal species is poorly known, the target itself focuses only on commercially harvested fish and other socio-economically important species with known genetic diversity, such as, for example, salmon and sea turtles. Activities to reach this target (including the maintenance of general habitat character, removal of severe selective pressures and prevention of escapes of alien species) should be implemented together with those associated with associated with goals 1, 2, 4, 5, 6, 7, and 8.

Goal 4. Reduce pressures from habitat loss, land use change and unsustainable water use

Overall Target 4.1: Rate of loss and degradation of natural habitats decreased

Application to marine and coastal ecosystems: Rate of loss and degradation of natural marine and coastal habitats, such as mangroves, coastal wetlands, seagrasses and coral reefs, decreased

Technical rationale

Habitat degradation is a major cause of biodiversity loss in the marine and coastal environment. According to *the third Global Environment Outlook (GEO-3)*, the driving force for physical alteration of habitats is ill-planned, and accelerating, social and economic development in coastal areas, which itself results from such increasing pressures as population, urbanization and industrialization, maritime transport and tourism. Estimates show that almost 50% of the world's coasts are currently threatened by development-related activities. Approximately 66% of the human population, or close to four billion, now live within 80 kilometres of the coast, with this figure expected to increase to 75% by 2020. The increase in coastal populations and economic activities is leading to an expansion of the direct use of coastal resources and negative human-induced changes to ecosystems. Mangroves, other coastal wetlands, seagrasses and coral reefs are particularly threatened. According to the 2001 report *A Sea of Troubles*, produced by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) half of the world's wetlands and over half of the world's mangrove forests were lost during the twentieth century. The loss of mangroves leads to coastal erosion and loss of nursery areas, causing wide-spread detrimental effects on biodiversity.

Activities to reach this target include the implementation of effective integrated marine and coastal area management. The Conference of the Parties may wish to consider requesting SBSTTA to undertake further work to determine a scientifically sound percentage figure for this target.

Goal 5. Control threats from invasive alien species

Overall target 5.1: Pathways for major potential alien invasive species controlled.

Application to marine and coastal ecosystems: All major pathways for potential alien invasive species in the marine and coastal environment controlled.

Technical rationale

The main sources of unintentional introductions of invasive alien species into the marine environment are considered to be ballast water from ships, and through hull fouling and other ship structure sources, and mariculture. Therefore, controlling these vectors is likely to have the greatest effect in reducing the number and severity of invasions. However, this target also recognizes that other sources of introductions exist (for example trade in marine species, and aquarium releases or escapes) and that controlling these pathways through effective regulation is important.

The effective implementation of the draft IMO International Convention on the Control and Management of Ships' Ballast Water and Sediments, once adopted, will be a key contribution to this target. Development and effective implementation of new ballast water treatment technologies to eliminate need for open-ocean discharge, will also be necessary. ^{8/} Also essential will be the identification and elimination of other potential pathways for introduction of alien species, such as the development of an international regime to address hull-fouling as a vector, development of programmes to eradicate invasive alien species and other appropriate measures.

The control of pathways is regarded as the most effective way to address the problem of invasive alien species in the marine environment, as eradication of an already established species is extremely difficult, if not impossible. This target is adapted from paragraph 34 (b) of Plan of Implementation of the World Summit.

Goal 6. Halt unsustainable use

Target 6.1: Biodiversity-based products derived from sources that are sustainably managed

Application to marine and coastal ecosystems: A minimum of [80 %] of all fishery products from wild populations derived from sources that are sustainably managed.

Technical rationale

According to recent statistics of the Food and Agriculture Organization of the United Nations, 47% of global fisheries are fully fished, while 18% are overfished and 9% depleted. In addition, 90% of large predatory fish biomass worldwide has been lost since pre-industrial times ^{9/} and the mean trophic level of fisheries landings globally have declined at a rate of approximately 0.1 per decade. ¹⁰ Overfishing affects habitats, food webs and non-target species, yet the impacts on biodiversity on the level of ecosystems, species and genes are poorly researched. Nevertheless, we know that by-catch amounts to approximately 30 million tonnes of sea life each year, and it is estimated that about 25% of catches worldwide are discarded. High impact fishing (including bottom trawling, long lining, gill netting,

^{8/} The draft Ballast Water Convention still condones the dumping of untreated ballast water into the open ocean. Scientists have raised concerns that some coastal species may thrive in the open ocean as temperatures rise, and pervasive marine debris (especially plastics) is available to provide them shelter. Development of new *in situ* treatment technologies, or other approaches, therefore remain essential to eliminate the need for open ocean discharge of untreated ballast water.

^{9/} Myers, R.A. and B. Worm (2003) Rapid Worldwide Depletion of Predatory Fish Communities. *Nature*, vol 423: 280-283.

¹⁰ Pauly, D, Christensen, V., Dalsgaard, J., Froese, R., and F. Torres (1998) Fishing Down Marine Food Webs. *Science*, vol 279: 860-863.

and dynamite fishing) causes damage to the biodiversity of sensitive habitats, such as cold-water coral reefs and seamounts.

This target should be viewed as a step towards achieving the target put forward in paragraph 31 (a) of the Plan of Implementation of the World Summit on Sustainable Development. The target of the World Summit on Sustainable Development aims to achieve 100% sustainability by the year 2015 through maintenance and restoration of fish stocks to levels that can produce maximum sustainable yield. This would imply that 70 - 80% sustainability would need to be reached by 2010, if the 2015 target is to be achieved.

Sustainability in this context can be defined through the principles and criteria put forward by the Marine Stewardship Council (<http://www.msc.org/>), which are based on the Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization of the United Nations. The principles and criteria reflect the recognition that a sustainable fishery is based on (i) the maintenance and re-establishment of healthy populations of targeted species; (ii) the maintenance of the integrity of ecosystems; (iii) the development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects; and (iv) compliance with relevant local and national local laws and standards and international understandings and agreements. By aiming for a greater degree of sustainability, the target also addresses destructive fishing practices, the minimization of by-catch, and the protection of habitats from harmful fishing gear. It should be noted that parts of the industry are already moving in this direction. For example, Unilever, the world's leading supplier of fast moving consumer foods, has committed itself to buy fish only from sustainable stocks by 2005.

This target is related to the targets under goal 1, as marine and coastal protected areas present a key tool for achieving sustainable fisheries. However, as indicated under the rationale for target 8.1, achieving sustainable fisheries and eliminating destructive impacts will require broader efforts to develop and implement a sustainable fisheries management framework in an ecosystem context that incorporates the protection of marine biodiversity. For example, the United Nations Fish Stocks Agreement contains such principles, but it needs to be more widely ratified and implemented. It should also be applied to all high seas fish stocks, not just those that are highly migratory or straddling. Paragraph 31 (d) of the Plan of Implementation of the World Summit also puts forward a number of actions that will contribute to the achievement of this target.

Target 6.2: Production areas managed consistent with the conservation of biodiversity

Application to marine and coastal ecosystems: [60-80%] of mariculture facilities operated consistent with the conservation of biodiversity.

Technical rationale:

According to the Ad Hoc Technical Expert Group on Mariculture, all forms of mariculture affect biodiversity at the genetic, species and ecosystem level. The main effects include habitat degradation, disruption of trophic systems, depletion of natural seedstock, transmission of diseases, and reduction of genetic variability. The biodiversity effects of pollutants, such as chemicals and drugs, are not very well studied, though are generally assumed to be negative. While mariculture output is still dwarfed by the tonnage of farmed freshwater organisms, it is growing worldwide, and has become an important contributor to the world's food supply. No internationally agreed criteria have yet been developed specifically for the environmental regulation of aquaculture operations, but many national and regional regulations and laws, largely based on scientifically accepted environmental criteria, have been adopted. Article 9 of the Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization

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provides a set of voluntary principles and standards that, if applied, ensure that potential social and environmental problems associated with aquaculture development are duly addressed and that aquaculture develops in a sustainable manner. This target therefore acknowledges the contribution of mariculture to food security while seeking to ensure that mariculture operations are undertaken in a sustainable manner. The Conference of the Parties may wish to consider requesting SBSTTA to undertake further work to determine a scientifically sound quantitative element for this target.

Target 6.3: No species of wild flora and fauna endangered by international trade

Application to marine and coastal ecosystems: This target and its technical rationale can be directly applied to marine and coastal ecosystems

Goal 7. Reduce pressures from climate change, pollution and soil erosion

Target 7.1: Pressures of climate change, pollution and soil erosion and their impacts on biodiversity and ecosystems reduced

Application to marine and coastal ecosystems: Substantial improvement in marine ecosystem health and coastal water quality achieved by protecting the marine environment from land-based activities.

Technical rationale

Land-based activities are a major source of threats to the health, productivity and biodiversity of the marine environment. The term “health” in this context should be interpreted as the ability of an ecosystem or population to regenerate from damage and stress, and could be considered to be equivalent to the term “persistence”. Threats from land-based activities include pollution (municipal, industrial and agricultural wastes and run-off, as well as atmospheric deposition) and physical alteration and destruction of habitats. The application of this target is consistent with paragraph 33 of the Plan of Implementation, and progress towards it can be achieved through effective application of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, regional instruments, programmes and processes, and other appropriate means. More specifically, the World Summit on Sustainable Development in its plan of implementation lists a number of related actions, which include proper coastal land use, watershed planning, and integration of integrated marine and coastal area management into key sectors. Provisions under existing regional programmes and/or conventions (such as, *inter alia*, OSPAR, International North Sea Conferences, Trilateral Protection of the Wadden Sea, HELCOM, Barcelona Convention, Istanbul Convention, Cartagena Convention) or legislation (such as, *inter alia*, within the European Community) as well as world-wide conventions (such as the London Convention) provide powerful instruments to reach this target.

Recent monitoring data ^{11/} show that coral reefs that are protected from other external stress factors are better able to recover from climate-change induced coral bleaching events, linking the implementation of this target to those under goal 1. This target, which is adapted from paragraphs 33 and 32 (c) of the Plan of Implementation of the World Summit, seeks to reduce and eliminate to the extent possible land-based impacts on the marine environment, therefore also increasing the ability of marine habitats to recover from climate-change-induced impacts, such as coral bleaching

^{11/} Wilkinson, C. (Ed) (2002) Status of Coral Reefs of the World: 2002; Linden, O., Souter, D., Wilhelmsson, D and D. Obura (Eds) (2002) Coral Reef Degradation in the Indian Ocean – Status Report 2002.

The Conference of the Parties may wish to consider requesting SBSTTA to undertake further work to determine a scientifically sound quantitative element for this target.

Target 7.2

Application to marine and coastal ecosystems: Major impacts on coastal ecosystems or vulnerable species of unusual climate events managed so that recovery rates are maximized and impacts on dependent communities minimized.

Technical rationale

Ecosystems that are healthy have a significant capacity to both resist and recover from periodic disturbances, such as coral-bleaching events or population collapses due to shifts in currents and changes in sea temperature. Ecosystems in a compromised state have limited capacity to do so. In the case of coral reefs, the destruction of associated habitats, such as mangroves and seagrass beds, which serve as nursery areas for many reef species, contributes to the limited capacity of coral-reef ecosystems to recover from natural or human-induced impacts. As noted in decision V/3 of the Conference of the Parties, most coral reefs are located in developing countries, and the majority of the people living near coral reefs are often extremely poor. Thus, even minor declines in the productivity of coral-reef ecosystems as a result of coral bleaching events could have dramatic socio-economic consequences for local people who depend on coral-reef services. A similar issue applies in areas such as the Pacific coast of South America, where El Niño/La Niña cycles have major effects on the fisheries on which many poor communities and many seabirds and marine mammals depend. Other impacts on affected species such as Humboldt penguins can remove their ability to recover from these periodic climate events, particularly if human-induced climate change alters those cycles.

This target seeks to maintain ecosystem resistance and resilience to climate change through controlling and minimizing other major human-induced impacts on coastal ecosystems and species resulting from a variety of causes including overexploitation, coastal development, destructive fishing practices, land-based pollution, coral mining, marine-based pollution, and recreational misuse. It also aims to minimize the impact of climatic events, such as coral bleaching, on coastal communities dependent on marine and coastal resources for their livelihoods. Relevant activities may include identification and institution of additional and alternative measures for securing the livelihoods of people who directly depend on the services provided by the affected ecosystems. The application of sound management practices, including marine and coastal protected areas and integrated marine and coastal area management, are integral for achieving this target. Representative networks of marine and coastal protected areas should be designed to offer resilience in the face of climate-induced threats, including through maintaining connectivity between more highly protected areas and providing for replication of habitat and ecosystem types. Activities to reach this target should be implemented together with those related to those under goals 1, 2, 3, 4, 6, and 8. It may also be appropriate to institute specific recovery programmes to assist some affected species, for example, by significantly reducing predation or by-catch of penguin populations during the recovery period.

The Conference of the Parties may wish to consider requesting SBSTTA to undertake further work to determine a scientifically sound quantitative element for this target.

Goal 8. Maintain capacity of ecosystems to deliver good and services and support livelihoods

Target 8.1: Capacity of ecosystems to deliver goods and services maintained.

Application to marine and coastal ecosystems: This target can be directly applied to marine and coastal ecosystems

Technical rationale

Marine and coastal ecosystems deliver a range of goods and services. These include: (i) provision of protein supply through fish to 6.2 billion people globally; (ii) functionality of healthy marine ecosystems that cycle nutrients, including from land run-off into food chains that ultimately supply fish for consumption; (iii) generation of significant tourism income and support to international commerce; and (iv) acting as the major component of global climate regulation. The recent World Parks Congress concluded that given the level of threat worldwide to marine ecosystems, there is an urgent need for action to protect and restore ocean health and productivity. This is reinforced by the growing evidence of fisheries decline and collapse, and the increasing pressures on coastal resources as a result of over 50% of the world's population living within 100 miles of the coast. Furthermore, the growing reach of technology means that the last natural refuges are becoming accessible.

Management of marine and coastal resources is always undertaken in the context of ecological uncertainty, and because of this, management action that is precautionary in nature, based on the best available science, and is applied on a broad ecosystem scale can best maintain ecosystem capacity to deliver goods and services. This target can be seen as an application of the target set forward in paragraph 30 (d) of the Plan of Implementation of the World Summit on Sustainable Development also, which called for the implementation of the ecosystem approach by the year 2010. The ecosystem approach is the primary framework for the implementation of the Convention, and its importance in ensuring the long-term productivity and sustainability of marine and coastal living resources and environments has been highlighted, for example, by the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem, the World Summit on Sustainable Development and the recent fourth meeting of the United Nations open-ended informal consultative process on oceans and the law of the sea.

The Conference of the Parties may wish to consider requesting SBSTTA to undertake further work to determine a scientifically sound percentage figure for this target

Target 8.2: The decline of biological resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.

*Application to marine and coastal ecosystems: **Decline in biological resources, which coastal and indigenous communities and others rely on for their livelihoods, and for food security and health halted, and protection of relevant traditional and local knowledge and its incorporation into policy formulation and management enhanced, where that incorporation will benefit the achievement of this objective.***

Technical rationale

Indigenous, traditional and local communities have a wealth of knowledge about biodiversity and its sustainable management, and in many countries marine and coastal biodiversity underpins livelihoods and food security. Application of local and traditional knowledge in the management of biological resources may also promote the maintenance of local and traditional knowledge systems. This target is consistent with target 9 of the Millennium Development Goals (to integrate principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources). Measures to address the decline in associated indigenous and local knowledge should be implemented consistent with the Convention's programme of work on Article 8(j) and related provisions.

Goal 9. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources

Target 9.1: All transfers of genetic resources in line with the Convention on Biological Diversity, International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.

Application to marine and coastal ecosystems: This target can be directly applied to marine and coastal ecosystems

Technical Rationale

In order to assist Parties, Governments and relevant stakeholders with the implementation of the access and benefit-sharing provisions of the Convention, the Conference of the Parties adopted at its sixth meeting the Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits arising from their Utilization. These voluntary guidelines are meant to assist Parties and relevant stakeholders when establishing legislative, administrative and policy measures on access to genetic resources and benefit-sharing and/or when negotiating contractual arrangements for access and benefit sharing. Against this background, this target aims to ensure that national systems established to implement the access and benefit-sharing provisions of the Convention, also cover access to marine and coastal genetic resources and the fair and equitable sharing of benefits arising out of the utilization of these resources, in accordance with the Convention.

It should be noted however that genetic resources in the deep seabed in areas outside of national jurisdiction are not covered by the access and benefit-sharing provisions of the Convention, and that this issue may deserve further consideration in the context of SBSTTA recommendation VIII/3 D.
