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AD HOC TECHNICAL EXPERT GROUP ON REVIEW OF IMPLEMENTATION OF THE PROGRAMME OF WORK ON FOREST BIOLOGICAL DIVERSITY
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# FURTHER DEVELOPMENT OF GOALS AND TARGETS TO FACILITATE COHERENCE AMONG THE PROGRAMMES OF WORK, AND TO PROVIDE A FLEXIBLE FRAMEWORK FOR NATIONAL TARGETS

***Draft outcome-oriented targets for the implementation of the expanded programme of work on forest biological diversity***

## I. INTRODUCTION

1. In its decision VII/30, the Conference of the Parties decided to develop a framework (annex II to the decision) to facilitate the evaluation of achievements and progress in the implementation of the Strategic Plan of the Convention and, in particular, its mission to achieve by 2010, a significant reduction in the current rate of biodiversity loss at global, regional, and national levels. The framework, which includes goals and sub-targets embedded within 7 focal areas, aims at promoting coherence among the various programmes of work of the Convention, as well as providing a flexible framework within which national and regional targets may be set.

2. In paragraph 12 (d) of the same decision, the Conference of the Parties further requested the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to develop recommendations for the integration of outcome-oriented targets into each of the thematic programmes of work, when these are reviewed. Following the multiyear programme of work of the Convention, the expanded programme of work on forest biological diversity adopted at the sixth meeting of the Conference of the Parties will be reviewed at the ninth meeting of the Conference of the Parties (annex to decision VII/31).

3. Pursuant to decision VI/26 of the Conference of the Parties on forest biological diversity, the review process of the forest work programme has started. In November 2003, the Ad Hoc Technical Expert Group (AHTEG) on the Review of Implementation of the Programme of Work on Forest Biological Diversity was established. At its first meeting, the Group developed initial recommendations on how to carry out the review process, and in particular, took preliminary steps towards developing outcome-oriented targets for the expanded programme of work on forest biological diversity (UNEP/CBD/COP/7/INF/20, annex III). In its decision VII/1 on forest biological diversity, the Conference of the Parties further requested the Executive Secretary, prior to its eighth meeting, to propose in collaboration with the Group, outcome-oriented targets to be integrated into the forest work programme

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for consideration by SBSTTA in accordance with the framework contained in annex II of decision VII/30. A preliminary draft was posted for electronic discussion by members of the AHTEG between June and September 2004 at the Secretariat's restricted website. 1/ This preliminary work provided input for the draft outcome-oriented targets of the forest work programme contained in the annex to this note.

4. The draft outcome-oriented targets were developed taking into consideration SBSTTA recommendation IX/14, which called for integrating the targets of the Global Strategy for Plant Conservation (decision VI/9, annex) into the thematic programmes of the Convention, as well as using the approach delineated in annex III of decision VII/30. In some cases, sub-targets were incorporated into the forest work programme without modifying those contained in the framework adopted by the Conference of the Parties. In other cases, specific modifications were made reflecting particularities of forest biological diversity. Pursuant to the request by the Conference of the Parties contained in paragraph 11 (b) of decision VII/30, the proposed list of outcome-oriented sub-targets contains a list of proposed indicators for consideration by SBSTTA.

5. Section II of this note describes the vision, mission, goals and outcome-oriented targets of the expanded programme of work on forest biological diversity. Section III discusses the relationship between the forest work programme with other relevant global and regional processes and instruments.

## II. VISION, MISSION, GOALS AND OUTCOME-ORIENTED TARGETS OF THE EXPANDED PROGRAMME OF WORK ON FOREST BIOLOGICAL DIVERSITY

### *A. Overall vision*

6. The overall vision of the expanded programme of work on forest biological diversity is to halt the loss of forest biological diversity and ensure its capacity to provide goods and services.

### *B. Mission*

7. The mission of the programme of work on forest biodiversity, consistent with the Strategic Plan of the Convention, as adopted in decision VI/26 of the Conference of the Parties, is to promote the implementation of the three objectives of the Convention and to achieve significant reduction of the current rate of forest biological diversity loss by the year 2010 at the global, regional and national level as a contribution to poverty alleviation and to the benefit of life on Earth.

### *C. Goals and targets*

8. Eleven goals and 18 outcome-oriented targets are proposed in the annex to the present note. The targets are considered 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 forest biological diversity between countries.

1/ https://www.biodiv.org/doc/restricted/forest/comments.aspx.

## III. RELATIONSHIP BETWEEN THE EXPANDED PROGRAMME OF WORK ON FOREST BIOLOGICAL DIVERSITY AND OTHER RELEVANT PROCESSES AND INSTRUMENTS

### *A. Millenium Development Goals*

9. The implementation of the expanded programme of work on forest biological diversity makes a direct contribution to the achievement of the Millennium Development Goals (MDGs). More specifically, to target 9 ("integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources"). In addition it contributes indirectly or potentially to target 2 ("halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day").

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

10. The expanded programme of work on forest biological diversity makes a direct contribution to the implementation of paragraphs 44 and 45 of the Plan of Implementation of the World Summit on Sustainable Development:

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

(b) *Paragraph 45*: Sustainable forest management of both natural and planted forests, and for timber and non-timber products is essential to achieving sustainable development, significantly reduce deforestation, halt the loss of forest biodiversity and improve food security and affordable energy. This would include actions to:

(i) Enhance political commitment to achieve sustainable forest management;

(ii) Support the United Nations Forum on Forests (UNFF);

(iii) Promote and facilitate the means to achieve sustainable timber harvesting;

(iv) Develop and implement initiatives to address the needs of those parts of the world that currently suffer from poverty and the highest rates of deforestation;

(v) Create and strengthen partnerships and international cooperation to facilitate the provision of increased financial resources, and transfer of environmentally sound technologies;

(vi) Recognize and support indigenous and community-based forest management systems;

11. The expanded programme of work on forest biological diversity contributes indirectly or potentially to the implementation of several other elements of the Plan of Implementation of the World Summit on Sustainable Development including:

(a) *Paragraphs 7 (c)* Development of national programmes for sustainable development and local community development;

(b) *Paragraph 9 (b) and (c)*: Access to modern biomass technologies and fuelwood resources and sustainable use of biomass;

(c) *Paragraph 10 (f)*: Support for natural resource management for creating livelihoods for the poor;

(d) *Paragraph 26 (b):* Employ the full range of policy instruments, including regulation, monitoring, voluntary measures, market and information based tools, land-use management and cost

recovery of water services, without cost recovery objectives becoming a barrier to access to safe water by poor people, and adopt an integrated water basin approach;

(e) *Paragraph 37 (d):* Reduce the risk of flooding and drought in vulnerable countries;

(f) *Paragraph 38*: Contribution of forests to sequester carbon dioxide;

(g) *Paragraph 41*: Contribution to the reduction of desertification and land degradation and measures to prevent and combat desertification;

(h) *Paragraph 42 (a) and (b)*: Develop and promote programmes, policies and approaches that integrate environmental, economic and social components of sustainable mountain development and implement programmes to address deforestation, erosion, land degradation, loss of biodiversity, disruption of water flows and retreat of glaciers;

(i) *Paragraph 58 (g):* Development of community-based initiatives on sustainable tourism by 2004 and build the capacities necessary to diversify tourism products;

(j) *Paragraph 132*: Development and wider use of Earth observation technologies, including satellite remote-sensing, global mapping and geographic information systems, to collect quality data on environmental impacts, land use and land-use change.

### *C. Biodiversity-related conventions and United Nations organizations*

12. The expanded programme of work on forest biological diversity is complementary with the work of the United Nations Forum on Forests (UNFF); and many of the goals and objectives of the forest work programme are also reflected in the UNFF IPF/IFF proposals for action (UNEP/CBD/COP/6/INF/9 and UNEP/CBD/SBSTTA/9/INF/31).

13. Furthermore, goals and activities of the expanded programme of work are variously relevant to the provisions of a number of conventions, including the World Heritage Convention (WHC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Plant Protection Convention (IPPC), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD) as well as to the work of members of the Collaborative Partnership on Forests, and to the "Forest Principles" agreed at 1992 United Nations Conference on Environment and Development.

### *D. Other thematic programmes of work of the Convention*

14. Other relevant programmes of work under the Convention that are relevant to forest biological diversity are mountain biological diversity (decision VII/27), protected areas (decision VII/28), and biological diversity of inland water ecosystems (decision VII/4).

*Annex*

**DRAFT GLOBAL-OUTCOME ORIENTED TARGETS FOR THE YEAR 2010 FOR THE EXPANDED PROGRAMME OF WORK ON FOREST BIOLOGICAL DIVERSITY**

The following goals and targets are based upon the framework adopted by the Conference of the Parties in annex II of decision VII/30 of the Conference of the Parties on the Strategic Plan of the Convention.

### *A. Protect the components of biodiversity*

**Goal 1. Promote the conservation of the biological diversity of ecosystems, habitats and biomes.**

**Target 1.1.** At least 10% of each of the world's ecological regions effectively conserved.

***Application to forest biological diversity:*** *At least 15 percent of the world's major forest types effectively conserved*

***Application to forest biological diversity (target 1.1 bis):*** *Comprehensive, representative, and effectively managed national and regional protected area system for major forest types established*

**Target 1.2**. Areas of particular importance to biodiversity protected

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity*

*Technical rationale*

Targets 1.1 and 1.2 derive from targets 4 and 5 of the Global Strategy for Plant Conservation. The term "particular importance to biodiversity" is understood here as forests with distinct ecological roles and/or that are underrepresented both in terms of protection status and current area under protection. Suggested forest types under this category include: cloud forests, temperate rain forests, mangrove forests, Mediterranean forests, semi-arid forests, tropical dry forests, riparian/gallery forests, and peat/swamp forests. Both sub-targets are in line with the ongoing "forest at risk" initiative from the United Nations Environment Programme's World Conservation and Monitoring Centre (UNEP/WCMC), and that includes these specific forest types. The term "effectively conserved" is understood to mean that the area is managed for a favorable conservation status by achieving its goals and objectives. The term "major forest types" refer to the classification in the 2000 Global Forest Resources Assessment (FRA) of the Food and Agriculture Organization of the United Nations (FAO) classification: tropical, subtropical, temperate, and boreal.

These two sub-targets aim at: (i) increasing the representation of major forest types in protected areas; (ii) increasing their management effectiveness; and (iii) protecting particular forest types. Criteria for identifying ecologically significant forests include degree of endemism, species richness, and specific attributes such as their role in providing essential ecosystem services such as carbon storage and regulation of hydrologic regimes. Globally, the percentage of forest area under protection of major forest types is about 12 per cent, regardless of whether recent estimates from FAO or United Nations are used. 2/ These estimates are likely to vary at regional and national levels but much less is known about

2/ Van Tol, G., and Gidda, S. B. 2004. Protected forest areas: their representativeness and efficacy for the conservation of biological diversity. In: Biodiversity Issues for Consideration in the Planning, Establishment and Management of Protected Area Sites and Networks. Secretariat of the Convention on Biological Diversity, Montreal. (CBD Technical Series no. 15).

figures for the specific forest types mentioned above. Implementation of activities under objective 3 of Goal 3, programme element 1, 3/ as well as those under objective 3 of goal 1, element 3 4/ of the expanded programme of work on forest biological diversity are essential for achieving these two targets.

**Goal 2. Promote the conservation of species diversity**

**Target 2.1.** Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity*.

*Technical rationale*

Restoration of forest biological diversity through natural regeneration, enrichment planting, reintroduction of forest fauna, and catalysing secondary succession by planting native or otherwise threatened tree species, generate environment and its people through products for food and raw materials, erosion control, recreation, clean water, provision of wildlife habitat, and maintenance of selected forest animal and plant populations. In particular, forest restoration practices link forest fragments in order to enhance ecological connectivity and promote ecosystem resilience to climate change by serving as plant and animal corridors.

The sub-target aims at: (i) restoring forest biodiversity in degraded sites as a contribution to reducing their decline, and (ii) indirectly increasing the area of forest in accordance with the ecosystem approach. The 12 principles of the ecosystem approach directly apply to ecological restoration activities. Essential elements of this relationship can be found in the forest web portal of the Convention on Biological Diversity as a way to implement the target 5/ Activities under objective 1 of goal 3, element 1 6/ of the expanded programme of work on forest biological diversity are fully in line for achieving the sub-target. Degradation is implied here as any combination of loss of soil fertility, absence of forest cover, soil compaction, and salinization, that either impedes or retards unassisted recovery through forest succession.

**Target 2.2.** Status of threatened species improved.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

Conservation *in situ* is understood to mean that populations of the species are effectively maintained in at least one protected area or through other *in situ* measures. Establishment of protected forest areas, forest restoration activities, and reintroduction of fauna can help to achieve the sub-target for *in situ* conservation. *Ex situ* mechanisms such as conservation stands, seed banks, gene plantations, botanical and zoological gardens, tissue culture collections are the means to achieve the target within the country of origin, in particular with respect to critically endangered forest plant species. Since direct assessments of the conservation status of forest plants are limited, estimates of trends in degree of forest cover will have to be used as a proxy for determining degree of threat. In the case of animals, relevant

3/ "*Ensure adequate and effective protected forest area networks*."

4/ "*To develop, where appropriate, specific forest ecosystem surveys in priority areas for conservation and sustainable use of forest biodiversity*."

5/ http://www.biodiv.org/programmes/areas/forest/portal/topic1/ecosystem.shtml

6/ "*Restore forest biological diversity in degraded secondary forests and in forests established on former forestlands and other landscapes, including in plantations*."

data can be readily obtained from the IUCN Red List. Objective 2 of goal 3, element 1 7/ of the expanded programme of work on forest biological diversity contains activities relevant for achieving the sub-target.

**Goal 3. Promote the conservation of genetic diversity**

**Target 3.1.** Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.

***Application to forest biological diversity:*** *Genetic diversity of harvested tree species and other major socioeconomic valuable forest species conserved.*
*The genetic diversity of [sixty] per cent of threatened and socio-economically important forest species maintained.*

*Technical rationale*

This sub-target derives from target 9 of the Global Strategy for Plant Conservation. Contrary to agricultural crops, the vast majority of forest species is found *in situ*, in natural or semi-natural ecosystems where the conservation of a particular set of species, populations or genes depends on the integrity of the forest estate, and is therefore intimately linked to sustainable forest management. Ideally**,** *in situ* conservation programmes need to be based on substantial knowledge of the species. However, and in spite of the current threats to forest genetic resources, very little information is available at this level, not to mention on the genetic structure and composition of most forest plants. Development of information systems is a necessary step to achieve the target.

Practical experience suggests that sound management of genetic resources must include conservation efforts based on finding a balance between (i) management of natural forests and plantations with due respect to their genetic resources; and (ii) the establishment of networks of smaller areas for genetic conservation. The right balance between these two approaches will depend upon biological factors, and management objectives. Tools and approaches on how to develop general strategies for conservation of forest genetic diversity for focal species, and at the ecosystem level, have been recently made available. 8/ Implementing activities contained in objective 4 of goal 4, element 1 9/ of the expanded programme of work on forest biological diversity will also contribute to achieving the sub-target.

## *B. Promote sustainable use*

**Goal 4. Promote sustainable use and consumption.**

**Target 4.1.** Biodiversity-based products derived from sources that are sustainably managed, and production areas consistent with the conservation of biodiversity.

**Target 4.2.** Unsustainable consumption, of biological resources or that impacts upon biodiversity, reduced.

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7/ "*Promote forest management practices that further the conservation of endemic and threatened species*."

8/ "Forest genetic resources conservation and management. Vols. 1, 2, 3. International Plant Genetic Resources Institute. Rome, Italy."

9/ "*Develop effective and equitable information systems and strategies and promote implementation of those strategies for in situ and ex situ conservation and sustainable use of forest genetic diversity, and support countries in their implementation and monitoring."*

***Application to forest biological diversity (target 4.1):*** (*combined*) *Forests products managed according to the principles of sustainable forest management which includes conservation of biological diversity, and their unsustainable consumption reduced.*

*Technical rationale*

This sub-target is derived from targets 6 and 12 of the Global Strategy for Plant Conservation. Its objective embraces the overall objective of sustainable forest management which attempts to balance environmental, socio-cultural, and economic benefits for present and future generations—in line with the Forest Principles agreed at the United Nations Conference on Environment and Development in 1992. Within these objectives, biodiversity conservation is essential for the continuous flow of goods and services the forests provide—including timber and non-timber forest products (which include bushmeat). The application of sustainable forest management include a suite of approaches, tools, and techniques implemented under particular sets of criteria and indicators suited at the national, regional, and global levels.

Recent global estimates 10/ suggest that almost 90 per cent of forests in industrialized countries (which account for about 45 per cent of the world's forest area) are currently being managed according to a formal or informal management plan or have been designated as areas where no active management should take place. A much lower figure—about 12 per cent of the total forest area—applies for developing countries using similar criteria. Although there are inherent differences in definitions among countries and geographical coverage, the study indicates that, overall, the situation as regards to planning for sustainable forest management has improved within the past 20 years. This does not necessarily mean that products are being extracted and/or managed in a sustainable manner in these areas; therefore the sub-target seems justified. The various activities under objectives 1, 2 and 3 of goal 4, element 1 11/ of the expanded programme of work on forest biological diversity are also relevant for achieving the sub-target.

**Target 4.3. No species of wild flora or fauna endangered by international trade.**

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

This sub-target corresponds to target 11 of the Global Strategy for Plant Conservation. The target focuses on those species that are actually threatened by international trade. So formulated, the target is attainable and is complementary to target 12 of the Global Strategy for Plant Conservation (30 per cent of plant-based products derived from sources that are sustainably managed). Species of wild flora endangered by international trade include but are not limited to species listed on appendix 1 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The target is consistent with the main purpose of the CITES Strategic Plan (to 2005): "No species of wild flora subject to unsustainable exploitation because of international trade". Objective 4 of goal 1, element 2 12/ of the expanded programme of work on forest biological diversity contains relevant actions for achieving the sub-target.

10/ Wilkie, M. L. *et al*. 2003. Forest area covered by management plans: global status and trends. Paper presented at the XII World Forestry Congress. Quebec City, Canada.

11/ "*Promote sustainable use of forest resources to enhance the conservation of forest biological diversity.*"
"*Prevent losses caused by unsustainable harvesting of timber and non-timber forest resources.*"
"*Enable indigenous and local communities to develop and implement adaptive community-management systems to conserve and sustainably use forest biological diversity*."

12/ "*Promote forest law enforcement and address related trade*."

### *C. Address threats to biodiversity*

**Goal 5. Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced .**

**Target 5.1.** Rate of loss and degradation of natural habitats decreased.

***Application to forest biological diversity:*** *The current rate of forest loss, degradation, and conversion to other land uses is reduced.*

*Technical rationale*

By reducing forest cover, forest degradation and fragmentation leads to forest biodiversity by reducing available habitat of forest-dependent species and indirectly through disruption of major ecological processes such as pollination, seed dispersal, and gene flow. Fragmentation may also hamper the ability of plant and/or animal species to adapt to global warming as previously connected migration routes to cooler sites disappear. Forest fragmentation may also exacerbate the probability of forest fires which further affects biological diversity in negative ways. The aim of this sub-target is to counteract the effects of forest degradation and fragmentation on forest biological diversity.

Recently developed global scenarios for the year 2100 suggest that for terrestrial ecosystems, land-use change probably will have the greatest effect on biodiversity—followed by climate change and nitrogen deposition. 13/ Furthermore, a recent global analysis reveals that: (i) over half of the temperate broadleaved and mixed forest biome and nearly one quarter of the tropical rainforest biome have been fragmented as opposed to about 4 per cent of the boreal forest; (ii) these and other major forest biomes and selected forest ecoregions 14/ show contrasting degrees of forest fragmentation across regions; and (iii) for all forest biomes considered, a high proportion of residual forest also means a lesser degree of fragmentation. 15/ This last fact suggests that deforestation rates are also likely to indicate fragmentation rates. Implementation of activities within objective 6 of goal 2, element 1 16/ of the expanded programme of work on forest biological diversity may be needed to achieve the sub-target.

**Goal 6. Control threats from invasive alien species.**

**Target 6.1.** Pathways for major potential alien invasive species controlled.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

Invasive alien species are defined as exotic or non-native species that alter ecosystem processes and threaten the survival of native species in natural ecosystems or cause a significant economic impact in agricultural or other managed lands. In native forest ecosystems, invasive alien plants are able to dominate the understory, and to suppress the regeneration of native species. They can also promote fire occurrences and alter water and nutrient availability. Even natural disturbances in forests such as tree falls can facilitate the establishment of exotic species. Since very few forests are disturbance-free, virtually all are vulnerable to invasion by alien plants.

This sub-target aims at preventing primarily the entry of potentially alien invasive plants into native forest ecosystems. The need to restore degraded forest lands, protect fragile forested watersheds

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13/ Sala, O. E. *et al*. 2000. Global biodiversity scenarios for the year 2100. Science 287: 1770-1774.

14/ Olson, D. M. et al. *2001*. Terrestrial ecoregions of the world. BioScience 51: 933-938.

15/ Wade, T. G. et al. *2003*. Distribution and causes of global forest fragmentation. Conservation Ecology 7 (www. consecol.org/vol7/iss2/art7).

16/ "*To prevent and mitigate losses due to fragmentation and conversion to other land uses.*"

and establish potential timber species usually stimulate extensive planting of a variety of alien species that have the potential to become invasive as has been demonstrated in many forest ecosystems across the globe; even plants imported as ornamentals that become naturalized have greatly altered indigenous forest ecosystems, particularly in oceanic islands. 17/ Because of the large scale and long time frame of forestry operations and their potential impacts on the composition and health of native forests, there is a need to assess the potential consequences of species choices. The effective implementation of articles VII and VIII of the International Plant Protection Convention on the prevention of introduction of plant products and on international cooperation are key to achieving this target.

**Target 6.2.** Management plans in place for major alien species that threaten ecosystems, habitats or species.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

There is no agreed reliable estimate of the number of alien species that threaten indigenous forest ecosystems, habitats, and species, to such an extent that they may be considered as "major". It is recommended therefore that the target be established for an absolute number of such major invasive alien species at the national level. For any alien species, it is expected that different management plans will be required in different countries in which they threaten indigenous forest ecosystems, habitats, and species. The implementation of the two activities contained under objective 1 of goal 2, element 1 18/ of the expanded programme of work on forest biological diversity are means to achieve the target.

**Goal 7. Address challenges to biodiversity from climate change, and pollution.**

**Target 7.1.** Maintain and enhance resilience of the components of biodiversity to adapt to climate change.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity*

*Technical rationale*

Maintaining and enhancing resilience is directly related to the a*daptive capacity* of a forest ecosystem; that is, its intrinsic options for reorganization following climate change. The attributes of a forest ecosystem that maintain and/or enhance resilience include: (i) redundancy (the number of species is less important to an ecosystem than the presence of "functional groups"); (ii) complementarity (the number of species, as different species contribute to its forest ecosystem structure and function in complementary ways); (iii) Spatial heterogeneity (as it favors the coexistence of different species in a given area); and (iv) memory (e.g., genetic make-up present in current biological communities selected over favorable/unfavorable periods and that expresses differentially different environmental conditions).

Taking into account the above attributes of ecosystem resilience, the work of the Ad Hoc Technical Expert Group on Biodiversity and Climate Change 19/ present specific strategies and options to achieve this target. These include: (i) land use, land-use change and forestry activities (LULUCF) eligible under the Kyoto Protocol; (ii) the maintenance of representative forest ecosystems and genetic

17/ See, e.g., Denslow, J. S. 2002. Invasive alien woody species in Pacific island forests. UNASYLVA vol. 209.

18/ "*Prevent the introduction of invasive alien species that threaten ecosystems, and mitigate their negative impacts on forest biological diversity in accordance with international law.*"

19/ See: Interlinkages between biological diversity and climate change: advice on the integration of biodiversity considerations into the implementation of the United Nations Framework Convention on Climate Change and its Kyoto Protocol. CBD Technical Series No. 10.

resources; (iii) use of mixed-species native tree plantations; (iv) minimizing deforestation and fragmentation; (v) maintenance of natural disturbance processes; (vi) provision of ecological connectivity between forest fragments; (vii) provision of buffer zones for adjustment of reserve boundaries; and (viii) practising low-intensity forestry. In addition, the implementation of specific sub-targets 1.1,1.2, 2.1, 3.1, and 5.1. above, will also contribute to achieving the above sub-target. All six objectives contained in goal 2, 20/ element 1 of the expanded programme of work on forest biological diversity contains a set of activities whose implementation will contribute to achieve the target.

**Target 7.2.** Reduce pollution and its impacts on biodiversity.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity*

*Technical rationale*

Forest health is affected by a variety of factors including air and water pollutants. In particular, local and long-range air pollution can cause considerable damage to planted and natural forests, as well as the emission of pollutants into groundwater. In particular, a great deal of accumulated scientific evidence reveals that sulphur and nitrogen inputs persisting for many decades impair forest ecosystem health—affecting directly trees and soils—especially in temperate regions. This leads to further reductions in the capacity of forest soils to retain airborne pollutants. In tropical and sub-tropical latitudes, forests are also suffering from the effects of long-range air pollution. 21/

The primary objective of this target is to reduce the deposition loads of nitrogen and sulphur in forest soils. In the case of nitrogen, curtailing its anthropogenic fixation is likely to be difficult since the production of nitrogen fertilizer is expected to increase as well as its release into the atmosphere from fossil-fuel combustion. 22/ Nevertheless, nitrogen-efficient technologies and management practices that can increase the efficiency of fertilizer have been recognized. There are also ways that nitrogen lost from fertilized farmland can be prevented from reaching watercourses, where it contributes to eutrophication. Restoration of forested wetlands and riparian forests have been shown to be effective at reducing the transfer of nitrogen from agricultural land to other environments.

In the case of nitrogen and sulphur, the implementation of clean-air policies to reduce the effect of airborne pollutants on forest health are also necessary to achieve the target. This is in line with the ongoing efforts of: (i) the 1979 Geneva Convention on Long-range Transboundary Air Pollution; in particular with the Protocol on Further Reduction of Sulphur Emissions and the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone; (ii) the Male Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia—adopted in 1998; and (iii) the Harare Resolution on the Prevention and Control of Regional Air Pollution in Southern Africa and its Likely Transboundary Effects (1998). Implementation of the target will also need systematic regional monitoring networks. 23/ Objective 2 of goal 2, element 1 24/ of the expanded programme of work on forest biological diversity contains a set of actions for achieving the target, including mitigating the effects of other, local pollutants (e.g. mercury, cyanide, hydrocarbons).

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20/ "*To reduce the threats and mitigate the impacts of threatening processes on forest biological diversity*."

21/ Innes, J. L., and Haron, A. H. (eds.). 2000. Air Pollution and the Forests of Developing and Rapidly Industrializing Countries. CABI Publishing, United Kingdom.

22/ Galloway, J. N. et al. 1994. Year 2020: consequences of population growth and development on the deposition of oxidized nitrogen. *Ambio* 23: 120–123.

23/ E.g., the International Cooperative Programme in Europe; and the Acid Deposition Monitoring Network in East Asia.

24/ "*Mitigate the impact of pollution such as acidification and eutrophication on forest biodiversity.*"

### *C. Maintain goods and services from biodiversity to support human well-being*

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

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

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

Biodiversity—from genes to ecosystems—regulates the rate, magnitude, and direction of major processes that are critical for the provision of ecosystem services. The obvious consequence of forests being large biodiversity repositories is that they provide numerous ecological services. These include resource provision (fiber, fuelwood, non-timber products), biotic regulation (of water and carbon dioxide flows; erosion control, disease control), cultural and social aspects (e.g., tourism, spiritual and religious values), and support of biological processes (e.g., pollination, nutrient cycling). The main purpose of this sub-target is to maintain the flow of different ecosystem services with minimal conflict, to the extent possible, and according to predetermined management objectives.

As identified by the Millenium Ecosystem Assessment (Conditions and Trends), large-scale, land-use change is perhaps the major threat for the flow of ecosystem services to be maintained, and that furthermore, the consequences of land-use change are more obvious to vulnerable human groups whose livelihoods rely on the use of natural and semi natural ecosystems. In the case of forests, which comprise a direct resource for about 1 billion people—and mostly the poor—the target needs no further justification. Achieving the target will require the further implementation of the sustainable forest management concept as identified in the 1992 Rio Forest Principles and which explicitly incorporate the continuous flow of goods and services as one of their key concepts. As noted in decision VII/11 of the Conference of the Parties on the ecosystem approach, sustainable forest management can be considered as a means for applying the ecosystem approach to forests. In this context, the ecosystem approach can be used as a complementary tool to achieve the sub-target. Of particular relevance to forests is the implementation of activities under objective 1 of goal 1, element 1 25/ of the expanded programme of work on forest biological diversity as well as the further guidance on the implementation of the principles of the ecosystem approach adopted by the Conference of the Parties at its seventh meeting. 26/

**Target 8.2.** Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people, maintained.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity*

*Technical rationale*

Forest biological diversity underpins livelihoods, food security and health care. Relevant resources and methods to address their decline are largely site specific and thus implementation must be locally driven. The scope of the target is understood to encompass forest biodiversity and associated ethnobotanical knowledge. 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. The development and implementation of adaptive community-based forest management systems by indigenous and local communities depending upon forests would also help to achieve the target. Particularly relevant activities whose implementation can help to achieve the sub-target are

25/ Obj. 1 of Goal 1, P. E. 1: *To apply the ecosystem approach to the management of all types of forests*.
26/ Annexes I and II of decision VII/11 of the Conference of the Parties on the ecosystem approach.

contained under objective 3 of goal 4, element 1 27/ of the expanded programme of work on forest biological diversity.

### *D. Protect traditional knowledge, innovations, and practices*

**Goal 9. Maintain socio-cultural diversity of indigenous and local communities.**

**Target 9.1.** Protect traditional knowledge, innovations and practices.

**Target 9.2.** Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit-sharing.

***Application to forest biological diversity:*** (*combined*) *Forest traditional knowledge, innovations and practices are protected, as well as the rights indigenous and local communities have over them, including benefit-sharing.*

*Technical rationale*

The contribution of traditional knowledge to the conservation, sustainable use, and benefit-sharing of forest biological diversity has been recently acknowledged by the United Nations Forum on Forests 28/ and by the Convention on Biological Diversity. 29/ Furthermore, the Convention on Biological Diversity is the primary international instrument with the mandate to address issues regarding the respect, preservation and maintenance of knowledge, innovations and practices of indigenous and local communities—including those that depend on forests for their livelihood. The aim of this target is thus in line with the Convention's programme of work on Article 8(j) and related provisions; and in particular, with the development of elements of *sui generis* systems for the protection of traditional knowledge, innovations and practices (decision VII/16 of the Conference of the Parties) as a means to effectively protect their knowledge against misuse and misappropriation. In addition, the Akwé:Kon guidelines recently adopted by the Conference of the Parties in decision VII/16 F provide guidance on the incorporation of cultural, environmental and social considerations of indigenous and local communities into new or existing impact-assessment procedures whenever developments are proposed to take place or are likely to impact on sacred sites and on lands and waters traditionally occupied by indigenous and local communities.

### *E. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources*

**Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.**

**Target 10.1** All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.

**Target 10.2.** Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources.

***Application to forest biological diversity:*** *These targets can be applied directly to forest biological diversity.*

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27/ "*Enable indigenous and local communities to develop and implement adaptive community-management systems to conserve and sustainably use forest biological diversity*."

28/ United Nations Economic and Social Council. Report of the Secretary General on Traditional Forest Related Knowledge. E/CN.18/2004/7.

29/ UNEP/CBD/WG8J/3/2 and UNEP/CBD/WG8J/3/4.

*Technical rationale*

Forests are an important source of genetic resources. There is therefore a need to ensure that access to forest genetic resources and the sharing of benefits arising out of their utilization is carried out in accordance with the provisions of the Convention. The third objective of the Convention is the "fair and equitable sharing of the benefits arising out of the utilization of genetic resources". Article 15 on access to genetic resources further sets out the obligations of Parties as providers and users of genetic resources. In order to assist Parties with the implementation of these provisions, the Bonn Guidelines on access and benefit-sharing were adopted in 2002 by the Conference of the Parties in order to assist Parties when establishing legislative, administrative and policy measures on access and benefit-sharing and/or when negotiating contractual arrangements for access and benefit-sharing. Further work is ongoing under the Convention to further assist Parties with the implementation of the ABS provisions of the Convention. If goal 10 and targets 10.1 and 10.2 related to access and benefit-sharing were met, it would be an indication that the access and benefit-sharing provisions of the Convention were being efficiently implemented by Parties and stakeholders and that the international system of access and benefit-sharing is running smoothly, including with respect to the access to forest genetic resources and the sharing of benefits arising from their utilization. The further implementation of activities under objective 1, goal 5, element 1 30/ of the expanded programme of work on forest biological diversity are needed to help achieving both targets.

### *F. Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention*

**Goal 11. Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.**

**Target 11.1.** New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

This sub-target reflects the unique feature of the Convention in which collective efforts in ensuring the sustainable provision of global public goods should be carried out by developing country Parties with financial support from developed country Parties. Thus the sub-target will have a great bearing on the realization of other sub-targets established under the expanded programme of work on forest biological diversity. According to decision VII/30 of the Conference of the Parties, official development assistance provided in support of the Convention will be assessed using information from Statistics Committee of the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD-DAC). OECD-DAC purpose codes under its Creditor Reporting System (CRS) classify official development assistance related to forest biological diversity under forestry (DAC5 code #312) and general environmental protection (DAC5 code #410). Although the methodology of measuring new and additional financial resources being transferred to developing country Parties remains to be elaborated, the rule of thumb is that the provision of new and additional financial resources implies no decrease or more than zero increase in official development assistance related to forest biological diversity.

30/ "*Promote the fair and equitable sharing of benefits arising from the utilization of forest genetic resources and associated traditional knowledge*."

**Target 11.2.** Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.

***Application to forest biological diversity:*** *This target can be applied directly to forest biological diversity.*

*Technical rationale*

Paragraph 4 of Article 20 of the Convention states that the extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology. The Convention's programme of work on technology transfer and technological and scientific cooperation 31/ is the primary means to achieve this target. The purpose both of this target and of the programme of work is to promote and facilitate the transfer of and access to technologies from developed to developing countries, necessary to ensure implementation of the three objectives of the Convention and in support of the 2010 global biodiversity target, including the participation, approval, and involvement of indigenous and local communities. Partnerships and cooperation among the private sector, governments, indigenous and local communities, academic institutions, and funding institutions will be needed for the effective implementation of the target.

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31/ Annex to decision VII/29 of the Conference of the Parties.