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Global Strategy for Plant Conservation








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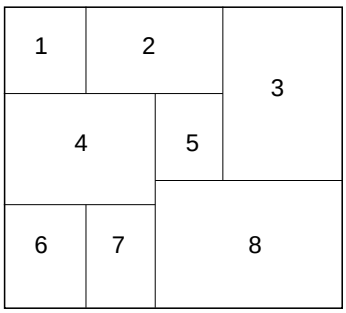

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Foreword

Plants are a vital part of the world's biological diversity and an essential resource for human well-being. Besides the crop plants that provide our basic food and fibres, many thousands of wild plants have great economic and cultural importance and potential, providing food, medicine, fuel, clothing and shelter for vast numbers of people throughout the world. Traditional Chinese medicine alone uses over 5,000 plant species and traditional medicines in India are based on 7,000 different plants. Plants also play a key role in maintaining basic ecosystem functions and are essential for the survival of the world's animal life.

Yet, despite our reliance on plants, crisis point has been reached. Although much work remains to be carried out to evaluate the status of the world's plants, it is clear that between 60,000 to 100,000 plant species are threatened worldwide.

Plants are endangered by a combination of factors: over-collecting, unsustainable agriculture and forestry practices, urbanisation, pollution, land use changes, and the spread of invasive alien species and climate change.

Working through a unique partnership of international and national organizations, Parties, other Governments and NGOs, the Convention on Biological Diversity has developed — in only two years since the Gran Canaria Declaration – a Global Strategy for Plant Conservation which was adopted unanimously at the sixth meeting of the Conference of the Parties to the Convention held in The Hague in April, 2002 (decision VI/9). While the entry point for the Strategy is plant conservation, other aspects such as sustainable use, benefit-sharing and capacity building are also included.

The Strategy provides an innovative framework for actions at global, regional, national and local levels. A global dimension is important because it can facilitate the development of a consensus of key objectives, targets and actions and enhance collaboration and synergy at all levels. The Strategy is supported by a wide range of organizations and institutions – governments, intergovernmental organizations, conservation and research organizations (such as protected-area management boards, botanic gardens, and gene banks), universities, research institutes, non-governmental organizations and their networks, and the private sector. The most innovative element of the Strategy is the inclusion of 16 outcome-orientated targets, aimed at achieving a series of measurable goals by 2010. This is the first time that such targets have been adopted under the Convention, and the success of this approach will be watched with interest as a potential model for other work programmes.

National Governments are being invited to adopt their own targets within the framework of the Strategy and to work in a coordinated way to achieve its goals by 2010.

I am grateful to all of those organizations and individuals worldwide who contributed to the development of the Global Strategy for Plant Conservation. I also acknowledge the generous support given by Botanic Gardens Conservation International and HSBC, through the "Investing in Nature" partnership, who have made it possible for the Global Strategy for Plant Conservation to be published in this booklet.

The Strategy and its 16 targets clearly set out the challenge for all of us. I invite you to join with us to implement the Strategy at all levels, from local to international, and achieve its targets by 2010 to safeguard the world's plant diversity.

Hamdallah Zedan
Executive Secretary
Convention on Biological Diversity

Introductory Notes

The Global Strategy for Plant Conservation is presented here as approved in Decision VI/9 of the Conference of the Parties (COP) to the Convention on Biological Diversity, on 19 April, 2002 in The Hague.

Decision VI/9 adopting the GSPC is contained below. Readers please note that the original text of the decision contains three parts: the recommendations, the annex containing the strategy and the appendix to the annex containing the "Terms and technical rational for the sixteen targets of the Global Strategy". For easy reference, the terms and technical rationale of the appendix have been presented in boxes inserted under each target of section C of the annex (page 6 to 11).

Decision VI/9.

Of the Conference of the Parties to the Convention on Biological Diversity on the Global Strategy for Plant Conservation

The Conference of the Parties

1. *Adopts* the Global Strategy for Plant Conservation, including outcome-oriented global targets for 2010, annexed to the present decision;

2. *Invites* relevant international and regional organizations to endorse the strategy and to contribute to its implementation, including to adopt these targets, in order to promote a common effort towards halting the loss of plant diversity;

3. *Emphasizes* that the targets 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 plant diversity between countries;

4. *Invites* Parties and Governments 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;

5. *Stresses* the potential role of the strategy in contributing to poverty alleviation and sustainable development;

6. *Emphasizes* the need for capacity-building, particularly in developing countries, small island developing States, and countries with economies in transition, in order to enable them to implement the strategy;

7. *Invites* Parties, other Governments, the financial mechanism, and funding organizations to provide adequate and timely support to the implementation of the strategy, especially by developing country Parties, in particular the least developed countries and small island developing States among them, and Parties with economies in transition;

8. *Decides* to review, at its eighth and tenth meetings, the progress made in reaching the global targets, and provide additional guidance in light of those reviews, including, as necessary, refinement of the targets;

9. *Decides* to consider the Global Strategy for Plant Conservation as a pilot approach for the use of outcome targets under the Convention within the context of the Strategic Plan and, also consider the wider application of this approach to other areas under the Convention, including other taxonomic groups;

10. *Requests* the Subsidiary Body on Scientific, Technical and Technological Advice:

(a) To take the targets into consideration in its periodic reviews of the thematic and crosscutting programmes of work of the Convention;

(b) To develop ways and means, within the Convention's thematic and cross-cutting programmes of work, for promoting implementation of the global strategy for plant conservation, and for monitoring and assessing progress; and to report to the Conference of the Parties at its seventh meeting;

11. *Welcomes* the contribution of the "Gran Canaria Group" in developing this Strategy, and invite the organizations involved, and other relevant organizations, in collaboration with the Executive Secretary, to contribute to the further development, implementation and monitoring of the Strategy.

Annex
Global Strategy for Plant Conservation

A. Objectives

As many as two-third of the world's plant species are in danger of extinction in nature during the course of the 21st century, threatened by population growth, deforestation, habitat loss, destructive development, over consumption of resources, the spread of alien invasive species and agricultural expansion. Further loss of plant diversity is predicted through genetic erosion and narrowing of the genetic basis of many species.

Gran Canaria Declaration, 2000

1. The ultimate and long-term objective of the Global Strategy for Plant Conservation is to halt the current and continuing loss of plant diversity.

2. The Strategy will provide a framework to facilitate harmony between existing initiatives aimed at plant conservation, to identify gaps where new initiatives are required, and to promote mobilization of the necessary resources.

3. The Strategy will be a tool to enhance the ecosystem approach to the conservation and sustainable use of biodiversity and focus on the vital role of plants in the structure and functioning of ecological systems and assure provision of the goods and services such systems provide.

4. The Strategy will also:

(a) Provide a pilot exercise under the Convention for the setting of targets that relate to ultimate objectives of the Convention;

(b) Act as a means to develop and implement the thematic programmes of work of the Convention.

5. Within the ultimate and long-term objective, a number of sub-objectives can be identified as follows:

The ecosystem approach
The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach helps to reach a balance of the three objectives of the Convention, which are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems. As described by the Conference of the Parties, the ecosystem approach is the primary framework for action under the Convention.

(a) Understanding and documenting plant diversity:

(i) Document the plant diversity of the world, including its use and its distribution in the wild, in protected areas and in *ex situ* collections;

(ii) Monitor the status and trends in global plant diversity and its conservation, and threats to plant diversity, and identify plant species, plant communities, and associated habitats and ecosystems, at risk, including consideration of “red lists”;

(iii) Develop an integrated, distributed, interactive information system to manage and make accessible information on plant diversity;

(iv) Promote research on the genetic diversity, systematics, taxonomy, ecology and conservation biology of plants and plant communities, and associated habitats and ecosystems, and on social, cultural and economic factors that impact biodiversity, so that plant diversity, both in the wild and in the context of human activities, can be well understood and utilized to support conservation action;

(b) Conserving plant diversity:

Improve long-term conservation, management and restoration of plant diversity, plant communities, and the associated habitats and ecosystems, *in situ* (both in more natural and in more managed environments), and, where necessary to complement *in situ* measures, *ex situ*, preferably in the country of origin. The Strategy will pay special attention to the conservation of the world’s important areas of plant diversity, and to the conservation of plant species of direct importance to human societies;

The significance of measurable targets
Worldwide there is an increasing trend towards the incorporation of measurable outcome targets into strategies and other plans adopted for biodiversity conservation. Probably the best known example is the United Nations Millennium Development Goals which have been adopted by many countries, both donors and developing countries.

Thematic programmes of work of the CBD
The Conference of the Parties to the Convention has initiated five thematic work programmes, addressing marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, the biodiversity of inland waters, and dry and sub-humid lands. Each thematic programme establishes a vision for, and basic principles to guide, future work; sets out key issues for consideration; identifies potential outputs; and suggests a timetable and means for achieving these outputs.

(c) Using plant diversity sustainably:

(i) Strengthen measures to control unsustainable utilization of plant resources;

(ii) Support the development of livelihoods based on sustainable use of plants, and promote the fair and equitable sharing of benefits arising from the use of plant diversity;

(d) Promoting education and awareness about plant diversity:

Articulate and emphasize the importance of plant diversity, the goods and services that it provides, and the need for its conservation and sustainable use, in order to mobilize necessary popular and political support for its conservation and sustainable use;

(e) Building capacity for the conservation of plant diversity:

(i) Enhance the human resources, physical and technological infrastructure necessary, and necessary financial support for plant conservation;

(ii) Link and integrate actors to maximize action and potential synergies in support of plant conservation.

B. Rationale, scope and general principles

6. Plants are universally recognized as a vital part of the world's biological diversity and an essential resource for the planet. In addition to the small number of crop plants used for basic food and fibres, many thousands of wild plants have great economic and cultural importance and potential, providing food, medicine, fuel, clothing and shelter for vast numbers of people throughout the world. Plants play a key role in maintaining the planet's basic environmental balance and ecosystem stability and provide an important component of the habitats for the world's animal life. At present, a complete inventory of the plants of the world has not been assembled, but it is estimated that the total number of vascular plant species may be of the order of 300,000. Of particular concern is the fact that many are in danger of extinction, threatened by habitat transformation, over-exploitation, alien invasive species, pollution and climate change. The disappearance of such vital and large amounts of biodiversity sets one of the greatest challenges for the world community: to halt the destruction of the plant diversity that is so essential to meet the present and future needs of humankind. The Global Strategy for Plant Conservation is proposed to address this challenge. While the entry point for the Strategy is conservation, aspects of sustainable use and benefit-sharing are also included.

7. The rationale for a strategy focusing on plants has two aspects:

(a) Plants are primary producers and provide habitat infrastructure for many ecosystems;

(b) Setting meaningful targets is feasible since scientific understanding of at least higher plants, though incomplete, is better than for most other groups.

8. Accordingly, the Strategy addresses the Plant Kingdom with focus on higher plants, and other well-described groups such as Bryophytes and Pteridophytes. The setting of measurable targets for this set of taxa is more credible than for many lower plant groups. This does not imply that these groups do not have important

The Bonn Guidelines
The Bonn Guidelines on access to genetic resources and the fair and equitable sharing of the benefits arising from their utilization were adopted by COP VI of the Convention (decision VI/24). They are recognized as a useful first step of an evolutionary process in the implementation of relevant provisions of the Convention in this area and provide guidance also on such issues as traditional knowledge and technology transfer. The voluntary guidelines are aimed at assisting Parties, other Governments and other stakeholders to develop an overall access and benefit-sharing strategy, and in identifying the steps involved in the process of obtaining access to genetic resources and benefit-sharing. They are also to provide assistance when legislative, administrative or policy measures on access and benefit-sharing are being established and/or when negotiating contractual arrangements for access and benefit-sharing.

Article 8(j) of the Convention states:
Each Contracting Party shall, as far as possible and as appropriate, subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Article 10(c) of the Convention states:
Each Contracting Party shall, as far as possible and as appropriate: Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

ecological functions, nor that they are not threatened. However, effective action will be best achieved by focusing, in an initial phase at least, on achievable outcomes for known taxa. Parties may choose on a national basis to include lower taxa.

9. The Strategy applies to plant genetic diversity, plant species and communities and their associated habitats and ecosystems.

10. The Strategy would provide a framework for actions at global, regional, national and local levels. A global dimension to the Strategy is important because it can:

(a) Facilitate the development of a global consensus of key objectives, targets and actions;

(b) Strengthen possibility of implementing necessary transnational actions (such as some recovery programmes);

(c) Optimize availability and usefulness of information;

(d) Be used to focus research on key generic issues (such as conservation methods);

(e) Allow the identification of appropriate standards for plant conservation;

(f) Mobilize support for globally significant actions (globally threatened species; “centres of plant diversity” and “hot spots”); and

(g) Allow for collaboration between national, regional and international entities.

11. The Global Strategy for Plant Conservation will:

(a) Apply the Convention provisions on access and benefit-sharing, drawing as appropriate on the Bonn Guidelines for access and benefit-sharing, with a view to ensuring a fair and equitable sharing of benefits arising from the use of genetic resources, and consistent with the International Treaty on Plant Genetic Resources for Food and Agriculture;

(b) Build upon the knowledge, innovations and practices of indigenous and local communities, with the approval and involvement of the holders of such knowledge, innovations and practices, and contribute to the implementation of Article 8(j) of the Convention;

(c) Apply the ecosystem approach adopted under the Convention, recognizing the interaction of plants and plant communities, with other components of ecosystems, at all scales, and their role in ecosystem functions and processes. The ecosystem approach also implies, *inter alia*, intersectoral cooperation, decentralization of management to the lowest level appropriate, equitable distribution of benefits, and the use of adaptive management policies that can deal with uncertainties and are modified in the light of experience and changing conditions;

(d) Employ *in situ* conservation measures as the primary approach for conservation, complementing them where necessary with *ex situ* measures. The Strategy provides an opportunity to explore linkages between in situ and *ex situ* conservation, including in restoration programmes.

(e) Adopt a multidisciplinary approach that takes into account scientific, social and economic issues;

(f) Strengthen initiatives on national inventories.

C. Targets

12. The global targets for the year 2010 are as follows, and their terms and technical rationale are appended to the present Strategy: The date of 2010 has been used to synchronize the Strategy with the Convention's Strategic Plan.

(a) Understanding and documenting plant diversity:

(i) A widely accessible working list of known plant species, as a step towards a complete world flora;

Some 900,000 scientific names are used for 270,000 known plant species

Terms and technical rationale

A working list of known plant species is considered to be a fundamental requirement for plant conservation. The target is considered to be attainable by 2010, especially given that is to be a *working* rather than a definitive list, and it is limited to *known* organisms (currently about 270,000, which may increase by 10 – 20% by 2010). Some 900,000 scientific names are known for these 270,000 species. In effect the target will require the compilation and synthesis of existing knowledge, focusing on names and synonyms, and geographical distribution. Both national flora and compilations and international initiatives are important in this respect. The list could be made *accessible* through the World Wide Web, complemented by CD-ROM and printed versions. Further work on national and regional floras is necessary to lay the basis for the longer term aim of developing a complete world flora, including local and vernacular names.

(ii) A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels;

34,000 plant species are classified as globally threatened with extinction

Terms and technical rationale

Over 60,000 species have been evaluated for conservation status according to internationally accepted criteria, of which 34,000 are classified as globally threatened with extinction (IUCN, 1997). In addition, many countries have assessed the conservation status of their own floras. There are currently about 270,000 known species. Of those still to be evaluated, sufficient information for a full assessment is only available for a proportion. Thus, only a *preliminary* assessment will have been carried out on the remaining, "data-deficient" species. Subsequently, further fieldwork will be essential to enable more comprehensive assessments to be undertaken.

(iii) Development of models with protocols for plant conservation and sustainable use, based on research and practical experience;

Terms and technical rationale

Conservation biology research, and methodologies and practical techniques for conservation are fundamental to the conservation of plant diversity and the sustainable use of its components. These can be applied through the development and effective dissemination of relevant models and protocols for applying best practice, based on the results of existing and new research and practical experience of management. 'Protocols' in this sense, can be understood as practical guidance on how to conduct plant conservation and sustainable use activities in particular settings. Key areas where the development of models with protocols is required include: the integration of *in situ* and *ex situ* conservation; maintenance of threatened plants within ecosystems; applying the ecosystem approach; balancing sustainable use with conservation; and methodologies for setting conservation priorities; and methodologies for monitoring conservation and sustainable use activities.

(b) Conserving plant diversity:

(iv) At least 10 per cent of each of the world's ecological regions effectively conserved;

Natural grasslands (such as prairies) and coastal and estuarine ecosystems, including mangroves, are poorly represented in protected areas

Terms and technical rationale

About 10% of the land surface is currently covered by protected areas. In general, forests and mountain areas are well represented in protected areas, while natural grasslands (such as prairies) and coastal and estuarine ecosystems, including mangroves, are poorly represented. The target would imply: (i) increasing the representation of different ecological regions in protected areas, and (ii) increasing the effectiveness of protected areas. Since some ecological regions will include protected areas covering more than 10% of their area, the qualifier "at least" is used. In some cases, ecosystems restoration and rehabilitation may be necessary. Effective conservation is understood to mean that the area is managed to achieve a favorable conservation status for plant species and communities. Various approaches are available for use in the identification of ecological regions, based on major vegetation types. Further targets may be agreed in the future.

(v) Protection of 50 per cent of the most important areas for plant diversity assured;

Terms and technical rationale

The most important areas for plant diversity would be identified according to the criteria including endemism, species richness, and/or uniqueness of habitats, including relict ecosystems, also taking into account the provision of ecosystem services. They would be identified primarily at local and national levels. *Protection* would be *assured* through effective conservation measures, including protected areas. Experience from regional initiatives on important plant areas, as well as a similar approach on important bird areas suggests that 50% is a realistic target for 2010. In the longer term the protection of all important plant areas should be assured.

(vi) At least 30 per cent of production lands managed consistent with the conservation of plant diversity;

Terms and technical rationale

For the purpose of the target, *production lands* refer to lands where the primary purpose is agriculture (including horticulture), grazing, or wood production. *Consistent with conservation of plant diversity* implies that a number of objectives are integrated into the management of such production lands: Conservation of plant diversity which is an integral part of the production system itself (i.e., crop, pasture or tree species and genetic diversity); Protection of other plant species in the production landscape that are unique, threatened, or of particular socio-economic value; Use of management practices that avoid significant adverse impacts on plant diversity in surrounding ecosystems, for example by avoiding excessive release of agro-chemicals and preventing unsustainable soil erosion.

2. Increasingly, integrated production methods are being applied in agriculture, including integrated pest management, conservation agriculture, and on-farm management of plant genetic resources. Similarly, sustainable forest management practices are being more broadly applied. Against this background, and with the above understanding of the terms used, the target is considered feasible. Higher targets are appropriate for natural or semi-natural forests and grasslands.

(vii) 60 per cent of the world's threatened species conserved in situ;

Terms and technical rationale

Conserved *in situ* is here understood to mean that populations of the species are effectively maintained in at least one protected area or through other *in situ* management measures. In some countries this figure has already been met, but it would require additional efforts in many countries. The target should be seen as a step towards the effective *in situ* conservation of all threatened species.

(viii) 60 per cent of threatened plant species in accessible ex situ collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes;

It is estimated that currently, some 30% of known threatened species are maintained in living collections while 2% of threatened species are included in recovery and restoration programmes. A target of 10% is recommended.

Terms and technical rationale

Currently, over 10,000 threatened species are maintained in living collections (botanic gardens, seed banks, and tissue culture collections), representing some 30% of known threatened species. It is considered that this could be increased to meet the proposed target by 2010, with additional resources, technology development and transfer, especially for species with recalcitrant seeds. Within this target it is suggested that priority be given to critically endangered species, for which a target of 90% should be attained. It is estimated that currently about 2% of threatened species are included in recovery and restoration programmes. Against this baseline, a target of 10% is recommended.

(ix) 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained;

For some 200–300 crops, it is expected that 70% of genetic diversity is already conserved ex situ in gene banks.

Terms and technical rationale

Theory and practice demonstrate that, with an appropriate strategy, 70% of the genetic diversity of a crop can be contained in a relatively small sample (generally, less than one thousand accessions). For any one species, therefore, the target is readily attainable. For some 200–300 crops, it is expected that 70% of genetic diversity is already conserved *ex situ* in gene banks. Genetic diversity is also conserved through on farm management. By working with local communities, associated indigenous and local knowledge can also be maintained. Combining genebank, on farm, and other *in situ* approaches, the target could be reached for all crops in production, as well as major forage and tree species. Other major socioeconomically important species, such as medicinal plants, could be selected on a case-by-case basis, according to national priorities. Through the combined actions of countries, some 2,000 or 3,000 species could be covered in all.

(x) Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems;

Terms and technical rationale

There is no agreed reliable estimate of the number of alien species that threaten indigenous plants, plant communities and associated habitats and ecosystems 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. The wording "At least 100" is considered appropriate. The 100 invasive alien species would be selected on the basis of national priorities, also taking into account their significance at regional and global levels. For many alien species, it is expected that different management plans will be required in different countries in which they threaten plants, plant communities and associated habitats and ecosystems. This target would be considered as a first step towards developing management plans for all major alien species that threaten plants, plant communities and associated habitats and ecosystems.

(c) Using plant diversity sustainably:

(xi) No species of wild flora endangered by international trade;

Terms and technical rationale

The proposed formulation of the target is more precise since it focuses on those species that are actually threatened by international trade. So formulated, the target is attainable and is complementary to target 12. 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".

(xii) 30 per cent of plant-based products derived from sources that are sustainably managed;

Terms and technical rationale

1. *Plant-based products* include food products, timber, paper and other wood-based products, other fibre products, and ornamental, medicinal and other plants for direct use.
2. *Sources that are sustainably managed* are understood to include:
   - Natural or semi-natural ecosystems that are sustainably managed (by avoiding overharvesting of products, or damage to other components of the ecosystem), excepting that commercial extraction of resources from some primary forests and near-pristine ecosystems of important conservation value might be excluded.
   - Sustainably managed, plantation forests and agricultural lands.
3. In both cases, sustainable management should be understood to integrate social and environmental considerations, such as the fair and equitable sharing of benefits and the participation of indigenous and local communities.
4. Indicators for progress might include:
   - Direct measures e.g.: products meeting relevant verified standards (such as for organic food, certified timber, and intermediate standards that codify good practices for sustainable agriculture and forestry);
   - Indirect measures e.g.: products from sources considered to be sustainable, or nearsustainable, on the basis of farming system analyses, taking into account the adoption of integrated production methods. Assessment of progress will be assisted by the development of criteria and indicators of sustainable agricultural and forest management.
5. Certified organic foods and timber currently account for about 2% of production globally. For several product categories, examples exist of 10–20% of products meeting intermediate standards. Against this baseline, the target is considered to be attainable. It would be applied to each category of plant-based products, understanding that for some categories it will be more difficult to reach and more difficult to monitor progress. Implementation would require a combination of product-specific and sectorwide approaches, consistent with the Convention's programme of work on agricultural biodiversity.

(xiii) The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted;

"ensure that current trends in the loss of environmental resources are effectively reversed at both global and national levels by 2015".

Terms and technical rationale

Plant diversity underpins livelihoods, food security and health care. This target is consistent with one of the widely agreed international development targets, namely to "ensure that current trends in the loss of environmental resources are effectively reversed at both global and national levels by 2015". It is recommended feasible to halt the decline by 2010 and subsequently to reverse the decline. Relevant plant 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 plant resources 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.

(d) Promoting education and awareness about plant diversity:

(xiv) The importance of plant diversity and the need for its conservation incorporated into communication, educational and public -awareness programmes;

Communication, education and the raising of public awareness about the importance of plant diversity are crucial for the achievement of all the targets of the strategy.

Terms and technical rationale

Communication, education and the raising of public awareness about the importance of plant diversity are crucial for the achievement of all the targets of the strategy. This target is understood to refer to both informal and formal education at all levels, including primary, secondary and tertiary education. Key target audiences include not only children and other students, but also policy-makers and the public in general. Consideration should be given to developing specific indicators to monitor progress towards achievement of the overall target. It may be helpful to develop indicators for specific target audiences. Given the strategic importance of education about plant conservation, this issue should be included not only in environmental curricula, but should also be included in broader areas of mainstream education policy.

(e) Building capacity for the conservation of plant diversity:

(xv) The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy;

It is likely that the number of trained people working in plant conservation world-wide will need to double by 2010.

Terms and technical rationale

The achievement of the targets included in the Strategy will require very considerable capacity building, particularly to address the need for conservation practitioners trained in a range of disciplines, with access to adequate facilities. In addition to training programmes, the achievement of this target will require long-term commitment to maintaining infrastructure. “Appropriate facilities” are understood to include adequate technological, institutional and financial resources. Capacity-building should be based on national needs assessments. It is likely that the number of trained people working in plant conservation world-wide will need to double by 2010. Given the current geographical disparity between biodiversity and expertise, this is likely to involve considerably more than a doubling of capacity in many developing countries, small island developing States and countries with economies in transition. Increased capacity should be understood to include not only in-service training, but also the training of additional staff and other stakeholders, particularly at the community level.

(xvi) Networks for plant conservation activities established or strengthened at national, regional and international levels.

Terms and technical rationale

Networks can enhance communication and provide a mechanism to exchange information, knowhow and technology. Networks will provide an important component in the coordination of effort among many stakeholders for the achievement of all the targets of the strategy. They will also help to avoid duplication of effort and to optimise the efficient allocation of resources. Effective networks provide a means to develop common approaches to plant conservation problems, to share policies and priorities and to help disseminate the implementation of all such policies at different levels. They can also help to strengthen links between different sectors relevant to conservation, e.g. the botanical, environmental, agricultural, forest and educational sectors. Networks provide an essential link between on-the-ground conservation action and coordination, monitoring and policy development at all levels. This target is understood to include the broadening of participation in existing networks, as well as the establishment, where necessary, of new networks.

13. These targets provide a framework for policy formulation and a basis for monitoring. National targets developed within this framework may vary from country to country, according to national priorities and capacities taking into account differences in plant diversity.

D. The Strategy as a framework

14. The Strategy is not intended to be a "programme of work" analogous to existing thematic and cross-cutting programmes of work under the Convention. It does not, therefore, contain detailed activities, expected outputs, etc. Rather, the Strategy provides a framework by means of setting outcome-orientated targets (these differ from the "process" targets used so far under the Convention). It is envisaged that the activities necessary to reach those targets could be developed within this framework. In many cases, activities are already under way, or envisaged in existing initiatives. These include:

(a) Activities aimed at plant conservation within national biodiversity strategies and action plans and relevant sectoral and cross-sectoral plans, programmes and policies. In this respect, Parties and Governments may wish to report on the incorporation of the Strategy in their national plans, programmes and policies;

(b) Relevant activities under existing relevant initiatives, in particular

- the Strategic Plan and work of the Plants Committee of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- the International Plant Protection Convention (IPPC);
- the International Treaty on Plant Genetic Resources of the Food and Agriculture Organization;
- the Berne Convention on the Conservation of European Wildlife and Natural Habitats;
- the FAO Global Plan of Action for Plant Genetic Resources for Food and Agriculture;
- the Man and the Biosphere programme of the United Nations Educational, Scientific Cultural Organization (UNESCO);
- the Global Strategy on Invasive Alien Species of the Global Invasive Species Programme (GISP);
- the plant conservation programme of the IUCN Species Survival Commission;
- the International Agenda for Botanic Gardens in Conservation;
- activities of the International Association of Botanic Gardens;
- the WWF-UNESCO people and plant programme,
- and regional strategies such as the European Plant Conservation Strategy of the Council of Europe and Planta Europa;

and

(c) Relevant activities under the programmes of work of the Convention on Biological Diversity, including those relating to agricultural biodiversity, forest biological diversity, inland water biological diversity, marine and coastal biological diversity, and dry and sub-humid lands, as well as activities involving cross-cutting issues such as access and benefit-sharing, sustainable use, indicators, alien species, the Global Taxonomy Initiative, and issues related to Article 8(j).

15. The Strategy and its 16 targets are intended to provide a framework for policy makers and public opinion and catalyse the reforms necessary to achieve plant conservation. Clear, stable, long-term targets that are adopted by the international community can help shape expectations and create the conditions in which all actors, whether Governments, the private sector, or civil society, have the confidence to develop solutions to address threats to plant diversity. For the targets to be widely understood, and appealing to public opinion, they need to be kept fairly simple and straightforward. They should be understood in a commonsensical rather than a literal way. In order that the number of targets be kept manageable, they need to focus on a set of activities that are strategic, rather than aiming to be comprehensive. Targets may be reviewed, and appropriate revised, as major new scientific evidence becomes available on important areas for plant diversity, threats to diversity, and major alien species that threaten plants, plant communities and associated habitats and ecosystems.

E. Further work required to develop and implement the Strategy

16. Measures to implement the Strategy will need to be put in place at international, national, and subnational levels. This will include development of national targets and their incorporation into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans. National targets will vary from country to country according to differences in levels of plant diversity and national priorities. Multilateral and bilateral funding agencies should consider putting in place policies and procedures to ensure that their funding activities are supportive of and do not run counter to the strategy and its targets.

17. For each target, the scope of activities may need to be clarified and sub-targets, or milestones, developed. In order to monitor progress towards achieving the targets, baseline data and a series of indicators may need to be developed. This would draw upon relevant national and international data sets (such as national "red lists"), and make full use of the clearing-house mechanism.

18. Regional components of the Strategy might be developed, perhaps using a biogeographical approach.

19. In addition to the Parties to the Convention, the design, development and implementation of the strategy should involve a range of actors, including:

(a) International initiatives (e.g., intergovernmental organizations, United Nations agencies, multilateral aid agencies);
(b) Conservation and research organizations (including protected-area management boards, botanic gardens, gene banks, universities, research institutes, non-governmental organizations and networks of non-governmental organizations);
(c) Communities and major groups (including indigenous and local communities, farmers, women, youth);
(d) Governments (central, regional, local authorities);
(e) The private sector.

20. In order to promote implementation of the strategy and facilitate cooperation between these initiatives, the Executive Secretary will collaborate with relevant stakeholders. To ensure full participation, the actors mentioned in paragraph 19 above should reflect not only United Nations geographical regions but also biogeographical regions. This collaboration will aim at avoiding duplication of effort, promote collaboration and synergies among existing initiatives, and facilitate analysis of the status, trends, and effectiveness of different measures on the conservation and sustainable use of plant diversity. Consideration might also be given to the establishment of a flexible coordination mechanism.

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