

October 2005



منظمة الأغذية
والزراعة
للأمم المتحدة

联合国
粮食及
农业组织

Food
and
Agriculture
Organization
of
the
United
Nations

Organisation
des
Nations
Unies
pour
l'alimentation
et
l'agriculture

Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

E

Item 5 of the Draft Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

WORKING GROUP ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Third Session

Rome, 26 – 28 October 2005

THE GLOBAL STRATEGY FOR PLANT CONSERVATION

Table of Contents

	Paragraphs
1. INTRODUCTION	1 - 4
2. CONTEXT	5 - 10
3. REQUEST MADE TO FAO BY THE EXECUTIVE SECRETARY OF THE CBD	11 - 12
4. OUTCOMES OF THE STAKEHOLDER CONSULTATIONS	13 - 22
5. ONGOING PROCESS	23 - 27
6. SPECIFIC CONTRIBUTIONS OF FAO INSTRUMENTS ON THE IMPLEMENTATION OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION (GSPC)	28 - 34

ANNEX 1: TERMS AND TECHNICAL RATIONALE FOR THE SIXTEEN TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION

ANNEX 2: BRIEF DESCRIPTION OF THE TARGETS 6, 9, 12 AND 13 OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION

1. INTRODUCTION

1. 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 relatively small number of crop plant species used for basic food and fibres, many thousands of wild plants have 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, also providing an important component of the world's habitats for animal life. To date, a complete inventory of the plants of the world has not been compiled, but it is estimated that the total number may be in the order of 300,000 species of which many are in danger of extinction. The disappearance of such vital and large amounts of biodiversity sets one of the greatest challenges for the global community: to halt the erosion of the plant diversity that is so essential to meet the present and future needs of humankind.

2. The need to conserve and sustainably use plant diversity has long been recognized and supported by national and international activities, particularly the *Global Plan of Action* for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (*Global Plan of Action*). This need has also been recognized in the Global Strategy for Plant Conservation (GSPC, or "Strategy") adopted by Decision VI/9 of the Conference of Parties (COP) to the Convention on Biological Diversity (CBD)¹.

3. The GSPC provides a framework to facilitate harmony among existing initiatives aimed at plant conservation, to identify gaps where new initiatives are required, and to promote mobilization of the necessary resources. While the entry point for the Strategy is plant conservation, aspects of sustainable use, capacity building and benefit-sharing are also included.

Purpose of this document

4. The purpose of this paper is to present a brief overview of: the context of the Global Strategy for Plant Conservation; the request made to FAO by the Executive Secretary of the CBD; and FAO's activities that can contribute to the implementation of the GSPC and particularly Target 9 ("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").

2. CONTEXT

Context of the Global Strategy for Plant Conservation

5. The Global Strategy for Plant Conservation was adopted at the sixth meeting of the Conference of the Parties to the Convention on Biological Diversity (decision VI/9) in 2002. The ultimate and long-term objective of the Strategy, which provides a framework for action at regional and national level as well as at the global level, is to *halt the current and continuing loss of plant diversity*.

6. The Strategy includes 16 outcome-oriented global targets for 2010 (see Annex I and II for details of the targets) that contribute to understanding and documenting plant diversity, conserving plant diversity, using plant diversity sustainably, promoting education and awareness about plant diversity, and building capacity for the conservation of plant diversity.

7. In February 2004, a global partnership for plant conservation was established to support the implementation of the GSPC, encouraging the participating organizations to continue the implementation of the Strategy (COP Decision VII/10). Launched during COP VII (Kuala Lumpur, 2004), the partnership is a voluntary initiative supported by a wide range of international and national agencies and organisations active in plant conservation.

¹ COP Decision VI/9: <http://www.biodiv.org/decisions/default.asp?dec=VI/9#>

Commission on Genetic Resources for Food and Agriculture

8. At its Fifth meeting in Nairobi in May 2000, the Conference of the Parties (COP) of the Convention on Biological Diversity recognized the important role of other existing initiatives - in particular the *Global Plan of Action*, and the International Undertaking (now the *International Treaty on Plant Genetic Resources for Food and Agriculture*, referred to as the “International Treaty”) - in the establishment of the Global Strategy for Plant Conservation.

9. In Decision VII/10 the COP invited FAO’s Commission on Genetic Resources for Food and Agriculture (CGRFA) to consider how *Global Plan of Action* contributes to the implementation of the Strategy, in particular Target 9 (“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”).

10. At its 10th Session, the CGRFA accepted the invitation of the Conference of Parties to the CBD² (COP Decision VII/10), to consider how the *Global Plan of Action* can contribute to the Global Strategy for Plant Conservation, in particular Target 9, and noted the need for higher order indicators in this regard.

3. REQUEST MADE TO FAO BY THE EXECUTIVE SECRETARY OF THE CBD

Invitation from the CBD Executive Secretary in 2002

11. Following the adoption of the Strategy (COP Decision VI/9), the Executive Secretary of the CBD invited FAO, as lead organization in collaboration with the International Plant Genetic Resources Institute (IPGRI), to support the further development and, more specifically, to consider facilitating the organisation of the stakeholder consultations of the following targets:

- Target 6 “At least 30 per cent of production lands managed consistent with the conservation of plant diversity”;
- Target 9 “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”;
- Target 12 “30 per cent of plant based products derived from sources that are sustainably managed”;
- Target 13 “The decline of plant resources and associated local and indigenous knowledge innovations and practices that support sustainable livelihoods, local food security and health care, halted”.

12. These targets are related to sustainable livelihoods, sustainable agriculture, *in situ* and *ex situ* plant conservation, and management of production land. All of these are areas of work that FAO and/or the Commission on Genetic Resources for Food and Agriculture (CGRFA) are currently addressing, and in particular, Target 9.

4. OUTCOMES OF THE STAKEHOLDER CONSULTATIONS

13. The following section presents the outcomes of the stakeholder consultation on Target 9 and other targets of the GSPC. These outcomes were presented and discussed at an Expert Group meeting on the Global Strategy for Plant Conservation (GSPC) held in Ireland (October 2003).

² Paragraph 76 of the Report of the Tenth Regular Session of the Commission on Genetic Resources for Food and Agriculture (CGRFA-10/04/REPORT): <ftp://ext-ftp.fao.org/ag/cgrfa/cgrfa10/r10repe.pdf>

The consultation process

14. Consultation documents were drafted, for each Target, by FAO in consultation with IPGRI. These documents were based on draft terms of reference and suggestions that were provided by the CBD Secretariat for this purpose. The documents formed the basis for the discussion during stakeholder consultations and included sections on:

- (i) the contribution of existing country driven processes (in the agriculture and forest sectors) lead by FAO that can contribute to the implementation of the GSPC
- (ii) the scope of activities of the targets,
- (iii) possible sub-targets and milestone(s) for each target,
- (iv) existing baseline data and possible indicators for monitoring progress towards achieving the targets.

15. The consultation process was undertaken electronically, during which it was possible for FAO to consult a wide range of stakeholders. Results of this consultation are available in Annex IV of document UNEP/CBD/SBSTTA/9/Inf.24³.

Outcomes – stakeholder consultation for Target 9

16. Stakeholders had common views on the background paper for Target 9. Analyses of their comments indicate that Target 9, while achievable for major crop species, may be difficult to achieve for some forest species, other wild socio-economically valuable species such as medicinal, aromatic, ornamental plants and other ‘important’ species and crop wild relatives, and under-utilized and orphan species and commodities. Some stakeholders also expressed concerns regarding appropriate indicators and capability to measure progress towards achieving the Target. The importance of including local knowledge in conservation assessments was highlighted. Stakeholders stressed that existing mechanisms should be used for the implementation of Target 9 at the national level.

17. Stakeholders generally agreed that the Target can be achieved for the most important crop species. By combining *ex situ* and *in situ* methods in complementary ways and focussing on centres of diversity, it is expected that 70% of the diversity of the species that fall within the Multilateral System on Access and Benefit-Sharing of the International Treaty⁴, will be effectively conserved. Regarding crops, countries supporting the implementation of the FAO *Global Plan of Action* will have identified which species have priority in their conservation efforts depending on national distribution, production, use and ethnobotanical significance.

18. The 70% threshold may be difficult to achieve for genetic diversity of tree species, other wild socio-economic valuable species like medicinal, aromatic, ornamental and other ‘important’ species and crop wild relatives, and under-utilized and orphan species and commodities (UOCs). The genetic diversity of these species has only been described for a limited number of these species and little work has been undertaken on their genetic conservation so far. Conservation efforts will have to be made on a case-by-case basis, according to the conservation status, socio-economic importance, national and local priorities, capacity and available resources.

19. Maintenance of associated indigenous and local knowledge remains the aspect of Target 9 that probably presents the greatest challenge. Other major obstacles that stakeholders confirmed are a lack of tested methodologies and limited assessments of indigenous and local knowledge associated to plant genetic diversity. Stakeholders also identified the incomplete description of genetic diversity of forest trees and other non-domesticated plant species, and partial work undertaken on the genetic conservation of these species as the most important gaps in baseline information.

³ <http://www.biodiv.org/doc/meetings/sbstta/sbstta-09/information/sbstta-09-inf-24-en.doc>

⁴ the scope of the International Treaty covers all plant genetic resources for food and agriculture

Outcomes – stakeholder consultation for Targets 6, 12 and 13

Outcomes – stakeholder consultation for Target 6

20. Stakeholders provided inputs to clarify the scope of the Target, and in particular regarding the term "production lands and management consistent with conservation of plant diversity". In addition, the importance of international certification programmes and standards were highlighted by stakeholders.

Outcomes – stakeholder consultation for Target 12

21. Stakeholders could not indicate if the 30% figure of the Target is feasible. Stakeholder comments mostly addressed the selection of plant based products, the selection sources of plant-based products and what could be defined as sustainable management in the scope of the Target.

Outcomes – stakeholder consultation for Target 13

22. Stakeholders agreed that baseline data to ultimately assess the status of plant resources and associated local and indigenous knowledge, and their impact on livelihoods, food security and health care is currently insufficient and too scattered to validate the feasibility of the Target. Major gaps relate to associated local indigenous knowledge, practices, innovations and indicators available to assess associated local and indigenous knowledge. Stakeholders generally agreed that sub-targets can be organized around categories of resources such as (i) plant resources for food and agriculture, (ii) forest plant resources; and (iii) pasture plant resources, but recommended to avoid a 'user-focused' classification. Stakeholders also provided valuable inputs regarding studies and non-governmental organisations whose work is relevant to the other cross-cutting targets of the GSPC and recommended to develop a questionnaire that will assist the formulation and integration of national targets.

5. Ongoing process

At the national level

23. Parties and Governments were invited to develop national and/or regional targets, and, as appropriate, to incorporate them into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans, according to national priorities and capacities (COP Decision VI/9). During COP VII, Parties were encouraged to nominate focal points to promote and facilitate implementation and monitoring of the GSPC at national level, including the identification of national targets and their integration in national biodiversity strategies and action plans and sectoral and cross-sectoral plans programmes and activities (COP decision VII/10).

24. Countries have started assessing the existing state of understanding, current and planned activities, and the priority for each of the targets of the GSPC. An example is the response of the United Kingdom to the establishment of the GSPC⁵.

At the international level

25. COP Decision VII/10 (2004) also requested the Executive Secretary, with the support of members of the global partnership for plant conservation, to elaborate proposals for a toolkit, including a checklist to assist Parties in integrating the targets into their strategies, plans and programmes, for review by the twelfth Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prior to the ninth meeting of the Conference of the Parties.

26. An International Conference on the Global Partnership on Plant Conservation will be held at the National Botanic Gardens of Ireland, Glasnevin in Dublin (from 23-25 October 2005).

⁵ "Plant Diversity Challenge: The UK's response to the Global Strategy for Plant Conservation": www.jncc.gov.uk

During the Conference the Partnership will start documenting case studies of the GSPC implementation at national and regional levels. The National Botanic Gardens of Ireland will undertake and support the publication of a volume of case studies from the meeting. Participants at the Conference will try to find consensus on the working practices and, identify gaps and priorities for the Partnership. National implementation of the GSPC will be supported by identifying elements of a toolkit for national implementation and providing guidance on developing resource mobilisation strategies.

27. The GSPC will be reviewed by the twelfth Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prior to the review of the GSPC by the Conference of the Parties, at its ninth meeting in 2008.

6. SPECIFIC CONTRIBUTIONS OF FAO INSTRUMENTS ON THE IMPLEMENTATION OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION (GSPC)

28. Activities that contribute to achieving Targets 6, 9 and 12 will mainly be implemented at national level while activities that contribute to achieving Target 13 will also be implemented at local levels. The consultation papers for targets 6, 9, 12, 13 stressed the importance of capitalizing on existing instruments, initiatives and processes in order to ensure synergies, minimise duplication of efforts and capitalize on limited resources available. The ongoing country driven processes led by FAO were identified.

29. As mentioned earlier, during the stakeholder consultations, it was recognized that FAO's work would contribute towards the implementation of many of the GSCP targets, especially through the *Global Plan of Action*, the Forest Resources Assessment (FRA) and the International Treaty on Plant Genetic Resources for Food and Agriculture. Target 9 is especially of relevance to FAO in the context of genetic diversity. More precisely, national and international activities of the *Global Plan of Action* support the implementation of Target 9 of the GSPC and also contribute to targets 1, 2, 4, 5, 6, 7, 8, 12 and 13, and cross-cutting targets such as 3, 14, 15 and 16. During its Tenth Regular Session, the FAO Commission on Genetic Resources for Food and Agriculture adopted indicators and a reporting format to monitor implementation of the *Global Plan of Action*⁶ Some of these indicators are pertinent to measuring progress in the conservation of crop genetic diversity *in situ* and *ex situ*, as well as crop wild relatives and other wild plants used in food production. FAO's normative areas of work also contribute to the other targets of the Strategy (in particular targets 1, 2, 4, 5, 7 and 8 and cross cutting targets such as 3, 14, 15 and 16).

30. FAO holds data on the numbers and characteristics of *ex situ* collections and on the total numbers of crop and forage accessions maintained in *ex situ* collections, which were collected in 1996 and 2003. Under the World Information and Early Warning System for Plant Genetic Resources for Food and Agriculture (WIEWS), FAO is developing national information sharing mechanisms to monitor implementation of the *Global Plan of Action* in collaboration with Member States. The data will be rolled up at regional and global levels during 2007-08 and published in the second Report of the State of the World's Plant Genetic Resources for Food and Agriculture (SoW), planned for 2008.

31. The first Report of the State of the World's Plant Genetic Resources for Food and Agriculture (SoW) and the country reports to the Fourth FAO International Technical Conference on Plant Genetic Resources in 1996 contain data of relevance to monitor and implement several targets of the GSPC. New datasets are being developed in the preparation of the second Report on the SoW and the process of monitoring the implementation of the *Global Plan of Action*.

⁶ *Indicators and reporting format for monitoring the implementation of the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture*, document CGRFA-10/04/Inf.5

32. The preparation of the second Report on the SoW can further contribute to developing baseline data and tools to assess progress towards the implementation of GSPC targets, in particularly Target 9. To this end, some of the proposed thematic background studies of the second Report SoW can assist in the process of facilitating the implementation of the GSPC. These are:

- (i) Plant genetic resources of forage crops, pasture and rangelands
- (ii) The conservation of crop wild relatives
- (iii) Indicators of genetic diversity, genetic erosion and genetic vulnerability
- (iv) The contribution of plant genetic resources to health and dietary diversity
- (v) Managing plant genetic resources in the agro-ecosystem; global change, crop-associated biodiversity and ecosystem services

33. Other FAO instruments that contribute to the implementation of the GSPC include the following:

- REFORGEN - FAO information on Forest Tree Genetic Resources (after extensive data gathering and checking). 1995-2003
- Country Reports on the State of Forest Tree Genetic Diversity (approx. 50 country reports available at the end of 2003);
- The FAO Panel of Experts on Forest Tree Genetic Resources
- Forest Resources Assessment (FRA)
- Criteria and indicators for sustainable forest management
- Forest Products Trade and Non Wood Forest Products Programmes of FAO

34. The Working Group may wish to examine how the Second Report of the State of the World and the *Global Plan of Action* for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture contribute to the implementation of the Strategy, in particular Target 9 (“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”).

ANNEX 1

TERMS AND TECHNICAL RATIONALE FOR THE SIXTEEN TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION⁷

A. Understanding and documenting plant diversity

Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora

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 it 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.

Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels

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.

Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience

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

Target 4: At least 10 per cent of each of the world's ecological regions effectively conserved

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

⁷ Extracted from the appendix of COP Decision VI/9

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.

Target 5: Protection of 50 per cent of the most important areas for plant diversity assured

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.

Target 6: At least 30 per cent of production lands managed consistent with the conservation of plant diversity

1. 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.

Target 7: 60 per cent of the world's threatened species conserved in situ.

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

Target 8: 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

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.

Target 9: 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

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 socio-economically 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.

Target 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems

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

Target 11: No species of wild flora endangered by international trade

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 CITES appendix 1. 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".

Target 12: 30 per cent of plant-based products derived from sources that are sustainably managed

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 over-harvesting 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 near-sustainable, 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 sector-wide approaches, consistent with the Convention's programme of work on agricultural biodiversity.

Target 13: 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.

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

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education 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. 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

Target 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

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.

Target 16: Networks for plant conservation activities established or strengthened at national, regional and international levels

Networks can enhance communication and provide a mechanism to exchange information, know-how 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.

ANNEX 2

BRIEF DESCRIPTION OF THE TARGETS 6, 9, 12 AND 13 OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION⁸

Target 6

Target 6 “At least 30 per cent of production lands managed consistent with the conservation of plant diversity” recognizes that all terrestrial areas are valuable for global plant diversity, not just semi-natural or natural habitats and protected areas. Primarily production land is essential to the maintenance of global plant diversity for the following reasons:

- It ensures the continuous distribution of many common and widespread plant species. Whilst these species might be more abundant in other habitats, they must maintain their presence in production land in order to avoid unnatural isolation and fragmentation that can, on occasions, be detrimental to the conservation of the species.
- The survival of some threatened plant species have, over time, become completely dependant on production land. This means that for these species production lands have to be managed to ensure their continued existence.
- Production land brings people into everyday contact with plant diversity and provides a range of benefits to people, particularly in the rural areas. For these reasons it is extremely important to raise awareness of biodiversity issues and for making tenable links between biodiversity issues and rural development.

Production land also has an impact on adjacent natural or semi-natural ecosystems and habitats through the intrusive direct or secondary effects of intensive management practices. By managing production land consistent with plant diversity the negative impacts on adjacent ecosystems would also be reduced.

To achieve this Target many different activities by a range of stakeholders will be needed. Agroecosystems, for example, are highly managed and it is in the specific detail of how they are managed that determines impacts on biological diversity, and this is a result of many socio-economic factors and is influenced by the needs of the farmer, characteristics of the market, and the conditions of the environment.

Target 9

While other targets of the GSPC focus on maintaining species and ecosystem diversity, Target 9, “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”, recognizes the central role that within species genetic diversity plays in improving production and use of crops and useful wild species. The need to conserve this genetic diversity has long been recognized and supported by national and international activities, particularly the Global Plan of Action. In addition, Target 9 creates the appropriate framework and objective to secure the diversity needed to achieve key CBD objectives and the Millennium Development Goals.

Target 9 refers to socio-economically valuable plant species as well as to crop plants and explicitly recognizes the importance of conserving indigenous and local knowledge as well as the genetic diversity itself. There are a large number of socio-economically valuable plant species which are not crops (e.g. Heywood (2003)⁹ estimates about 100,000 species used in some way or another) including important forage, agroforestry and forestry species, as well as important ornamentals, medicinals, crop wild relatives and plants with other uses such as for hedging. Conservation and use of genetic diversity of these different groups of plants involves different approaches and methods, and the conservation need is often driven by different forces.

⁸ Extracted from background papers prepared by FAO

⁹ Heywood, V. 2003. Conservation and sustainable use of wild species as sources of new ornamentals. In: Düzyaman, E. & Tüzel, Y. (eds), *Proceedings of the International Symposium on Sustainable Use of Plant Biodiversity to Promote New Opportunities for Horticultural Production Development*, *Acta Horticulturae* Number 598, 2003, 43–53.

The achievement of this Target will involve conservation actions by countries and national institutions throughout the world on the selected species. Over the past decades, countries and international agencies have worked together to develop a range of instruments and procedures that can be used to support and stimulate national actions and improve coordination between countries and agencies.

A draft background paper on the implementation of Target 9 was prepared by FAO in collaboration with IPGRI and was distributed to stakeholders in September 2003. The stakeholders include selected national focal points for the GPA and experts, organisations and institutes involved in the conservation of crop plants and other socio-economically valuable species and of genetic diversity aspects of conservation, including members of the plant genetic resources networks and the Forest Gene Expert Panel.

The Background Paper for Target 9 stressed the role of the contribution of the International Treaty, the Global Plan of Action, and the work of the Commission on Genetic Resources for Food and Agriculture as the main instruments to address agricultural biodiversity. Other key FAO instruments that had been identified in the background paper were the Report on State of the World's PGRFA, the GPA, ex situ collections of the Consultative Group on International Agricultural Research (CGIAR), WIEWS, REFORGEN (FAO Worldwide Information System on Forest Genetic Resources) and Country Reports on the State of Forest Tree Genetic Diversity.

The background paper listed institutions or related initiatives that can contribute to the development and implementation of Target 9. These include international PGR networks, the International Treaty on PGRFA, the Intergovernmental Panel on Forests, the Intergovernmental Forum on Forests, the Programme of Work on Agricultural Biodiversity of the CBD, the Expanded Programme of Work on Forest Biological Diversity of the CBD, the FAO Panel of Experts on Forest Gene Resources and the IPGRI-FAO-IUCN-GEF Crop Wild Relatives project. Key issues of discussion, presented in the background paper, included the selection of species (crop and tree); how to ensure the conservation of sufficient intra-specific diversity; conservation methods and approaches; and the maintenance of associated indigenous and local knowledge. Discussions in the background paper pertained to clarifying the scope of the Target, establishing baselines, and establishing sub-targets, milestones and indicators of progress towards the Target over time.

The background paper suggested that appropriate sub-targets and milestones should reflect existing international plans and objectives that are relevant to conservation of genetic diversity, and conversely, to use existing instruments to achieve the Target. These include, for example, the specific objectives in the GPA on ex situ and in situ conservation. Possible sub-targets could include components on: crop species listed in Annex I of the International Treaty (e.g. most important crops species for food and agriculture and under-utilized and orphan species), socio-economically valuable non crop species (e.g. forest tree species, crop wild relatives and other socio-economic valuable wild species) and indigenous and local knowledge. Milestones related to food and agriculture should take into account the timetable established for the Second Report of the State of the World on Plant Genetic Resources for Food and Agriculture.

Main observations from the consultation

Target 12

Plants and their derivatives provide a range of products including amongst other things fuel, food, shelter, clothing and medicines. Such plants or plant products may be harvested from wild or semi-natural conditions, or cultivated. Current levels of reliance on plant products from unsustainable resources are too high. Target 12 "30 per cent of plant based products derived from sources that are sustainably managed" aims to remedy that.

It requires a coordinated approach that applies across all sectors of international, national and local production and trade of plant products. In the case of plant material collected from wild or

semi-natural ecosystems, harvesting, to be sustainable, must be below replacement rates and the process of harvesting should not cause significant damage to other components of the ecosystem. Sustainable management of plants and their products relates to environmental as well as social issues, including fair trade, equitable sharing of benefits and participation of indigenous and local communities.

Target 13

Target 13 focuses explicitly on the status of plants used by, and important to, local people and is most relevant to subsistence economies in developing countries. Plant resources may be either domesticated or wild and their products include the material (e.g. food, medicines, firewood, ecological services) and the immaterial (e.g. contribution to the cultural life and sense of well being of local people). This Target recognizes the relationship between biodiversity conservation, diverse cultures and local practices for sustainable use. The Target recognizes that locally managed plant resources are essential biological assets for improving the livelihoods of the rural poor.

To make this Target more concrete and to gain a better understanding of the ways local communities use plant resources to secure their livelihoods, there is a need to:

- specify the meaning and scope of “plant resources”;
- understand the types of traditions and forms of knowledge that people use to shape and manage local plant resources; and
- identify and understand processes whereby local and indigenous communities develop local innovations and integrate new practices for the sustainable use of plant resources.

One way to achieve advance the implementation of this Target would be through case-studies that analyse specific relations between local practices and knowledge of particular communities and the plant they depend upon for their livelihoods. The local practices, institutions and knowledge systems could then be identified in ways that would facilitate positive recognition and mainstreaming into policies for improving rural livelihoods, agricultural development and biodiversity conservation.