UNEP

CBD

CONVENTION ON BIOLOGICAL DIVERSITY

Distr.
GENERAL

UNEP/CBD/SBSTTA/12/INF/9
20 June 2007

ORIGINAL: ENGLISH

SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE
Twelfth meeting
Paris, France, 2 – 6 July 2007
Item 3.2 of the provisional agenda*

THE GLOBAL STRATEGY FOR PLANT CONSERVATION

A review of the activities of major partners and organizations in implementing the Global Strategy for Plant Conservation

Note by the Executive Secretary

I. INTRODUCTION

1. In decision VII/10 the Conference of the Parties welcomed the establishment, by the Executive Secretary, of a flexible coordination mechanism for the Strategy, comprising: liaison groups to be convened as necessary according to established procedures; national focal points, as determined by Parties; the Global Partnership for Plant Conservation; and the Secretariat, including the Programme Officer supported by Botanic Gardens Conservation International.

2. In addition, in Decision VII/10, the COP invited the Commission on Genetic Resources for Food and Agriculture of the Food and Agriculture Organization of the United Nations to consider how the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture 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").

3. Also, at the seventh meeting, the welcomed the decisions of the Conference of the Parties and Plants Committee of the Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES) to consider how they can contribute to the implementation of the Strategy, especially regarding target 11 ("No species of wild flora endangered by international trade").

4. Subsequently, the Executive Secretary invited the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP-WCMC) to provide support in monitoring the

* UNEP/CBD/SBSTTA/12/1.

/…

implementation of the strategy. He also invited the Commission on Genetic Resources for Food and Agriculture (FAO) to consider how the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture contributes to the implementation of the strategy, in particular target nine.

5. At its Tenth Regular Session, the Commission on Genetic Resources for Food and Agriculture of FAO decided to accept the invitation of the Conference of Parties to the CBD 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, and importance of higher order indicators in this regard. In addition, the Executive Secretary and UNEP-WCMC have developed a joint work plan to facilitate monitoring of the GSPC at the global, regional level as well as provide relevant input and guidance to national level monitoring.

6. In preparation for the in depth review, the Executive Secretary invited relevant international organizations and other stakeholders to submit reports on their progress in the implementation of the Strategy. A summary of key elements contained in the reports are highlighted in section II below.

II. CONTRIBUTION BY INTENATIONAL ORGANIZATIONS IN THE IMPLEMENTATION OF THE STRATEGY

A. THE GLOBAL PARTNERSHIP FOR PLANT CONSERVATION

7. Since its establishment the Global Partnership for Plant Conservation has undertaken a broad range of activities in support of the Global Strategy for Plant Conservation and towards the achievement of particular targets of the Strategy. Some of these activities are outlined below. However these examples are only illustrative of the wide range of activities undertaken both collectively by the Partnership and by its individual members, some who also reported directly to the Executive Secretary on their relevant activities that contribute towards achieving the targets of the Strategy.

8. Members of the Partnership have made major contributions to implementation of the Global Strategy for Plant Conservation through their own programmes and continue to facilitate, as appropriate, particular stakeholder consultations on GSPC targets.

9. A wide range of national and sectoral meetings were held since 2002 to help develop national plans, programmes and other activities to address the implementation of the GSPC. In many cases the Partnership, or individual members of the Partnership, were active in supporting, facilitating or resourcing these meetings. To date such workshops have been held in countries including China, Honduras, Ireland, the Philippines, the Seychelles, South Africa, New Zealand, UK and others.

10. From 23 to 25 October, 2005, the Partnership organized a major conference on the GSPC (The ‘Plants 2010 Conference’). The conference brought together delegates from 37 countries and from a wide range of national and international organizations to consider urgent priorities for implementation of the Global Strategy for Plant Conservation and the future roles of partnerships in plant conservation. It was hosted by the National Botanic Gardens of Ireland and supported by the Office for Public Works, Botanic Gardens Conservation International and HSBC’s Investing in Nature programme.

11. Many other priority programmes and activities of importance to the GSPC are being implemented individually by members of the Partnership. In order to provide an illustration of the wide-ranging activities undertaken by the Partnership and its members in support of the implementation of the GSPC at national levels, some examples of relevant activities are outlined in Annex I.

12. To date, the major thrust of efforts made by the Partnership in communications and awareness raising has been to provide information on the GSPC, its importance and implementation to selected target audiences. Successful and sustained efforts were made by BGCI and its partners to prepare,

publish and disseminate new language versions of the Global Strategy for Plant Conservation Brochure. These are now available in the following languages: Chinese, English, French, Japanese, Portuguese, Russian and Spanish. The GSPC brochure has been widely distributed at a series of major botanical and conservation meetings and is available for download from the BGCI website (www.bgci.org).

13. A major symposium aimed at raising awareness of the GSPC was organised at the XVII International Botanical Congress held in Vienna, Austria from 17 – 23 July, 2005. The Congress was attended by c.5,000 botanists from most countries of the world. Copies of the GSPC brochure were provided to the Congress organization for inclusion in all delegate packs. A second symposium on the implementation of Target 8 of the GSPC was also included in the programme of the Congress. The resolutions of the Congress included a strong statement in support of the GSPC, urging governments, inter-governmental bodies, organizations and institutions at all levels to support its implementation and make the achievement of its targets an urgent priority.

14. The GPPC www.plants2010.org. website aims to act as a comprehensive resource and clearing house for information, tools and resources for the partnership in support of the GSPC, making information accessible and providing links to the individual organizations.

15. The Global Partnership for Plant Conservation jointly organised (with the CBD Secretariat) a Liaison Group meeting of the Global Strategy for Plant Conservation in Dublin, Ireland from 23-25 October 2006, hosted by the National Botanic Gardens of Ireland. Participation in the meeting included representatives of a wide range of organizations that are members of the Partnership (see Annex II), as well as representatives nominated by the Parties to the Convention.

B. THE CONTRIBUTION OF SOME MAJOR PARTNERS AND ORGANIZATIONS BY TARGET

16. There is a wide range of activities being undertaken by various institutions at regional and international level to implement the Strategy. The examples below are highlights sampled from the reports submitted to the Secretariat.

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

17. Target 1 of the GSPC is fundamental – success in this area will be crucial for the progress of many of the other targets. A global approach is essential because many of the challenges associated with developing a working list of the accepted names of known plant species cross national and regional boundaries and can only be addressed within a global context. These include: broadening access to literature and expertise, resolving problems of species delimitation over the whole range of the species in question, and clarifying differences in species delimitation and nomenclature used between different countries and regions. A global working list of the accepted names of known plant species will in turn greatly facilitate the production and refinement of regional and national lists. Additional information relevant to particular ecosystems or countries can be added to those regional and national lists.

18. Major botanic gardens are taking a key role in implementing this target. The Royal Botanic Gardens Kew (RBG Kew) was committed to producing a global checklist of plant species prior to the GSPC, but the focus on Target 1 under the Global Strategy has been very positive and has promoted participation of others. By end of 2007, Kew is expecting 70% of the checklist to be on-line, and that whole target will be achieved by 2010. Gaps at the national or taxonomic levels are still be assessed and addressed. The current status of work towards the working list can be summarised as follows: Ferns and Fern allies - completed; Gymnosperms - completed (conifers hard copy); Bryophytes - nearing completion; Flowering Plants - 53% completed (by the end of 2007) including the 10 largest families. Overall this represents 60 per cent completion by the end of 2007. Outstanding gaps are summarised in the Table below.

Major families for which checklists are needed to meet Target 1

Family	Number of species	%Gap
Apocynaceae	4555	4.48
Ericaceae	3995	3.93
Apiaceae	3780	3.72
Brassicaceae	3710	3.65
Acanthaceae	3500	3.45
Boraginaceae	2740	2.7
Urticaceae	2625	2.58
Ranunculaceae	2525	2.48
Amaranthaceae	2500	2.46
Lauraceae	2500	2.46

(a) At the Smithsonian Museum of Natural History, Herbarium, the Department is actively involved with and have contributed to many flora projects from around the world, including the Flore Analytique du Bénin, Flora of the Caribbean, Flora of China, Flora of Ecuador, Flora of the Guianas, Flora of the Hawaiian Islands, Flora of the Marquesas Islands, Flora of Myanmar, Flora Neotropica, Flora of North America North of Mexico, Flora of Puerto Rico and the Virgin Islands, Flora of Somalia, Flora of Venezuela, and Flora of the Washington-Baltimore Area. The data and images of more than 95,000 type specimens of algae, lichens, bryophytes, ferns, gymnosperms and angiosperms are available on USNH's Type Specimen Register at http://ravenel.si.edu/botany/types/.

19. The Global Biodiversity Information facility (GBIF) has significantly supported the achievement of this target by providing seed funding to address major gaps in information management and research on large plant families at global level such as the *Global Working Checklist of Compositae*. This collaborative project will produce a working checklist of the approximately 25,000 species and 75,000 synonyms of the Compositae by 2010. A grant from the Global Biodiversity Information Facility (GBIF) to Landcare Research in Lincoln, New Zealand, is paying for the first 18 months of this international project.

20. In partnership with botanical institutions around the world, Missouri Botanic Gardens (MBG) is addressing Target 1 by conducting floristic and taxonomic studies of plants and by disseminating the results in systematic monographs and regional, national, and local floras and checklists. To make this knowledge widely accessible, MBG places all work compiled on plant species on W^{3}TROPICOS. MBG has developed an integrated, distributed, interactive information system, TROPICOS — with information made available to users through the W^{3}TROPICOS Web interface (accessible at **http://www.tropicos.org**). In addition to plant names and specimen records, the TROPICOS system contains significant data on each plant species such as habits of the collected specimens, their phenology, distribution, and conservation status.

21. ***TROPICOS vital statistics:*** 1 million plant names, 3 million+ specimen records, 70,000 taxa imaged and 400,000+ literature images

(a) The Royal Botanic Gardens Edinburgh, is working in Nepal, China, Peru, Lebanon, Syria, Iraq, Jordan, Saudi Arabia, Yemen, Oman, UAE, Qatar, Bahrain, Kuwait, SE Asia, the Sinohimalaya, parts of South America and, of course, Scotland and the UK. Notable recently completed Floras include Bhutan and Turkey and work is currently underway in the Gulf of Arabia and Nepal with numerous contributions to other floristic projects. Staff are working on the following families and genera: Araucariacae, Begoniaceae (*Begonia*), Gesneriaceae, *Euphrasia*, Fabaceae, Rosaceae (*Geum*), Sapotaceae (*Manilkara*), Sterculioidae, Umbelliferae, Zingiberaceae. Over the last two reporting years, these and

other studies have resulted in the publication of flora accounts, monographs, identification guides, new species described and checklists.

22. In Africa, the consortium of institutions and herbaria are working collaboratively to develop the African Plant Checklist through a collaborative effort by South African Botanical Institute and Conservatoire et Jardin Botaniques de la Ville de Genève, Switzerland (CJBG).

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

23. Target 2 is extremely important for focusing resources available for conservation. Progress towards reaching Target 2 is variable with different activities proceeding simultaneously. These include the IUCN Red List, the IUCN rapid list- a new initiative designed specifically to meet Target 2 –and the many Regional and National initiatives.

24. In response to the call for preliminary assessments of the conservation status of plant species and due to a lack of resources needed to conduct full assessments under the IUCN Red List Categories and Criteria 3.1, several IUCN SSC plant specialist Groups have devised their own protocol for preliminary plant assessments. However, the IUCN Species Programme, in consultation with the Biodiversity Assessment Sub-Committee (BASC) of the Species Survival Commission, has developed a two-stage methodology for preliminary plant assessments. A standardized approach to preliminary assessments will ensure their scientific rigour and allow smooth integration into the full IUCN Red List. At its 12th meeting in May 2006 in Virginia, U.S.A., the SSC BASC formally approved this methodology and signaled its approval for the SSC plant network to move forward in using preliminary plant assessments. An early trial version of a tool to conduct assessments has been tested by SSC members who have verified its consistency with full Red List assessments and standards. The methodology behind the approach is closely tied to the IUCN Red List Categories and Criteria 3.1 and the forthcoming tool and database to conduct assessments and store data will be overlaid on the existing Red List tools and database to ensure that preliminary assessments can easily be turned into full assessments.

25. The IUCN Centre for Mediterranean Cooperation is to work with the Mediterranean Island Plant Specialist Group and Plantlife International to test the approach in several Mediterranean countries throughout a three-year project (2006-08) to assess as much of the biodiversity of the region. A proposal had been developed for a GEF funded project for plant conservation in six countries ("Implementing the Global Strategy for Plant Conservation identification of threatened plant species and protection of important plant areas in six priority countries"), IUCN and Botanic Gardens Conservation International (BGCI) will train and assist species experts in Cameroon, Costa Rica, Madagascar, Morocco, Sri Lanka and the Philippines in conducting preliminary plant assessments of all their native endemic flora.

26. There are other initiatives such as the Sampled Red List Index in which various botanic gardens such as Royal Botanic Gardens is involved, looked at specific plant families while the Smithsonian Institute is developing and testing an algorithm for plant assessments based on herbarium specimens.

27. Bioversity International is working with partners to prepare a list of threatened Musa species, based on the IUCN Red List categories. Ecogeographic studies to make conservation status assessments have been carried out for 37 genera containing priority crop wild relative species in Armenia, Bolivia, Madagascar, Sri Lanka, and Uzbekistan as part of the UNEP/GEF supported project on "In situ conservation of crop wild relatives through enhanced information management and field application".

28. The Global Trees Campaign – an initiative led by Fauna and Flora International, established in 1999 to save the world's most threatened trees and the habitats where they grow, has completed the Magnoliaceae Red List. BGCI is providing the Secretariat for the IUCN/SSC Global Tree Specialist Group and it is anticipated that the red listing of trees will be a major contribution to Target 2.

29. Although at the international level, Red Listing is not making the progress that might have been expected, many national and regional Red Lists are available, and botanic gardens and their herbaria play an important role in the development of such lists.

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

30. Many organizations have developed tools and protocols for plant conservation and use. For example, many of the IUCN-SSC Plant Specialist Groups regularly produce and publish guidelines and protocols on a range of topics related to species conservation.

31. A wide range of models, tools and protocols will be included in the proposed toolkit. Examples from Bioversity International to illustrate input from international organizations include:

(a) The development of cryo-preservation protocols for ex situ conservation and associated training. Protocols for cryopreservation of over 150 different plant species have now been developed, including Musa, coffee, cassava, sweet potatoes, potatoes, taro, apple, strawberries, citrus, papaya and a wide range of tropical and temperate fruit species.

(b) An analysis of current world wide practices for DNA sample storage the possibilities of integration of DNA banking in a complementary conservation and use approach.

(c) Development of best practices for germplasm management for seeds and in-vitro collections of some of the Annex 1 species of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

(d) Development of software ("PowerCore") designed to support establishment of ex situ collections with maximum genetic diversity.

(e) Construction and development of web-based plant genetic resource information platforms, including a European plant genetic resources information infrastructure and search catalogue – EURISCO (http://eurisco.ecpgr.org) – and the CGIAR System-wide Information Network for Genetic Resources (SINGER) (http://singer.cgiar.org).

(f) An international portal for an information system for collating and evaluating information relevant to the conservation and use of crop wild relatives.

(g) The development of Descriptor Lists which represent a universally understood language for describing the diversity of crops and provide a reliable and efficient way to store, retrieve and communicate information and make it easier for genetic resources workers to identify promising accessions. These are currently available for more than 80 crops.

(h) Development of analytical procedures to use geographical information systems (GIS) and temporal data to support conservation decision making for useful plant species.

32. A complete lists of protocols and tools will be made available in the toolkit when published.

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

33. Many of the activities under this target are being undertaken by various agencies whose focus is in- situ conservation including, Conservation International, Fauna and Flora International, IUCN, WWF among others.

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

34. A relevant example of the progress in the implementation of this target by international organizations is provided by the work on Important Plant Areas (IPAs)[1/] by Plantlife International. Guidelines on identification and protection of IPAs are available from www.plantlife.org.uk.

35. IPA identification using the Plantlife International standard guidelines has taken place in the following countries:

- Europe - Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Macedonia, Montenegro, Poland, Romania, Slovenia, Slovakia, UK.
- Projects also in Finland, Spain, Italy.
- Southern Africa - regional workshop and national workshops in Mozambique and Namibia
- Southeast Asia - regional workshop with 10 countries.
- Himalayas - regional workshop on IPA for medicinal plants in 5 countries (China, Bhutan, Pakistan, India, Nepal).
- Saudi Arabia - for the countries of the Arabian peninsula (this was the IUCN Arabian Plants Specialist group).
- Mediterranean - one regional workshop (including Tunisia, Egypt and Morocco) and one national workshop in Morocco.

36. However, it is acknowledged within Plantlife International's Important Plant Area (IPA) programme, that formal protected area mechanisms alone, though critically important, will not result in safeguarding the plant diversity on important plant sites. Plantlife's IPA programme seeks to promote conservation of IPA through various mechanisms, not only formal protection. Community based conservation, with an emphasis on delivering sustainable livelihoods from plant resources, is recognised as one of the most effective approaches to plant conservation at IPA. It is essential that actions to conserve plants on the ground (3-5 year timeframe) be undertaken alongside the actions aimed at integrating the conservation of IPA into policy, legislative and institutional frameworks (10-20 year time frame), to ensure sustained results.

37. In addition to the plant specific IPA programmes that are under discussion around the world, some countries are exploring the implication of developing key biodiversity area programmes (specifically the biodiversity rich regions of northern South America, Eastern Africa and Indochina). This approach involves focusing conservation action on the places that are rich in all vulnerable and irreplaceable species (birds, mammals, plants, invertebrates and fish) and is being led *by* Conservation International and BirdLife International. Key Biodiversity Area initiatives, like IPA projects, contribute to the CBD programme of work on protected areas.

38. In addition, Missouri Botanic Gardens is analyzing and interpreting plant data to support conservation decision-making, with emphasis upon identifying centers of plant diversity and endemism to assure protection of the areas that hold the greatest number of species and the most critically threatened species.

39. In the Smithsonian Institute, the Biological Diversity of the Guiana Shield Program, BDG has been operating in north eastern South America since 1983 using species data from herbarium collections (recent and historic) and published floras to identify conservation priority regions. The information gathered has assisted in the designation of protected areas in Guyana where the National Protected Area

---

1/ *Important Plant Areas (IPAs) are natural or semi-natural sites exhibiting exceptional botanical richness and/or supporting an outstanding assemblage of rare, threatened and/or endemic plant species and/or vegetation of high botanical value.* Using this definition, the selection of sites follows international and regional guidelines developed by Plantlife International, collaboratively with a range of partners and Stakeholders to ensure consistency and is based on three criteria: threatened species, species richness/diversity and threatened habitats.

System (NPAS) is sponsored by the World Bank. Others include work with the Forestry Department of Myanmar to inventory and assess plant diversity in their national parks and protected areas. Also, specimen data and floristic information have been used to assess global biodiversity hotspots in Southeast Asia and the Malay Archipelago.

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

40. Bioversity International has collaborated with FAO to facilitate the implementation of this target. Jointly a background document was prepared for an electronic stakeholder consultation in April 2003, as a means to facilitate measurement of progress towards target 6. The observations made from the consultation showed that stakeholders provided inputs to clarify the scope of the target, especially regarding the term "production lands and management consistent with conservation of plant diversity". The importance of international certification programmes and standards were also highlighted by stakeholders. The Stakeholder consultation also suggested that there should be two areas of focus: (i) promoting actions and (ii) monitoring. There is a need to also look at areas such as horticultural trade and medicinal plant trade as well as agriculture and forestry.

41. However, there is a lack of an agreed definition of what management practices can be considered consistent with the conservation of plant diversity. This gap, combined with a lack of baseline data on management practices in forest and agricultural production land makes it difficult to assess progress implementing the target at a global level.

42. FAO is developing and implementing indicators to assess the 2010 Indicator of the Convention on Biological Diversity "*Area of forest, agricultural and aquaculture ecosystems under sustainable management*". These indicators have an ecosystem and integrated scope including all components of agricultural biodiversity. Since the scope includes the sustainable management of agricultural biodiversity, it could be used as a proxy for assessing progress towards implementing target 6 at the global level.

43. The FAO Global Forest Resources Assessment 2005 has been completed and published. The results show that 11 % of total forest area designated primarily for the conservation of biological diversity while 65 per cent of the total forest area has conservation of biodiversity as one of the designated functions.

44. The Pilot test for the new monitoring system for the implementation of the Global Plan of Action has been tested and the revised indicators and reporting format were adopted by the Commission on Genetic Resources for Food and Agriculture at its 10th regular session in 2004. Data have been reported by countries using the new monitoring system. The data will be reported in the Second Report of the State of the World's Plant Genetic Resources for Food and Agriculture expected to be published in 2008.

45. The FAO Grasslands and Pasture Programme contributes to the sustainable development of cropping systems and agriculture intensification worldwide. It promotes capacity building, knowledge and information sharing, development of national capacity and policies for the adoption of improved technologies. Datasets have been developed by the Grassland and Pasture Crops Group with (i) detailed descriptions of more than 600 grassland species and a linked picture gallery of photos [2/]; and (ii) country pasture profiles providing a broad overview of relevant general, topographical, climatic and agro-ecological information with focus on livestock production systems and the pasture /forage resource [3/].

46. Working with the international networks on coconut and banana**,** Bioversity has collaborated with community-based organizations to implement poverty reduction research in a way which is consistent with this target in that socio-economic factors and needs of the farmer, are taken in to account in the

2/ See: http://www.fao.org/ag/AGP/AGPC/doc/GBASE/Default.htm

3/ See: http://www.fao.org/ag/AGP/AGPC/doc/Counprof/regions/index.htm

management their production system which maintain a high levels of biological diversity. The international coconut network, COGENT, collaborates with community-based organizations to implement poverty reduction research in which coconut seedling nurseries are established and maintained. Seedlings of farmers' varieties selected from the local communities were propagated and planted in the communities. In 2006, over 25,000 seedlings were planted in 34 communities in 12 countries with support from COGENT project funds and in collaboration with local/national coconut planting initiatives

47. Bioversity's work in Cuba, Ghana, Guatemala, Nepal, Venezuela and Viet Nam have shown that home gardens play an important role in the maintenance of both species and genetic diversity for many useful plants. More substantial programme and policy actions are being implemented in some of these countries (e.g. Cuba) that can be expected to support the continuing role of home gardens.

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

48. Through the Crop Wild Relatives Project, Bioversity International is working in 5 countries to improve the in situ conservation of crop wild relatives. Ecogeographic studies have been carried out on 37 genera of crop wild relatives and protected areas identified for their conservation. In situ conservation of amaranth (Peru), millets (India and Nepal) and aloe (Yemen) has been undertaken under Bioversity's project on neglected and underutilized project funded by IFAD.

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

49. As part of BGCI's contribution to Target 8, BGCI has developed the Plant Search Database as a means to identify plants in cultivation in botanic gardens. This database was launched on BGCI's website (www.bgci.org) in 2003. The database currently holds records for over 150,000 taxa, provided by nearly 700 botanic gardens. The plant records are presently linked to five databases – the 1997 and 2006 IUCN Red Lists of threatened Plants, the International Plant Names Index (IPNI), a list of Crop Wild Relatives Database and the Tree Conservation Database. In addition, the database is also linked to Google's image search service to enable pictures of each taxa to be found on the internet. The database allows individual institutions to upload and manage their own data and provides a valuable means for in-country organizations to manage and review data on their own and on other national collections.

50. The focus for BGCI now is to ensure that the major seed bank collections (such as the Millennium Seed Bank, European Native Seed Conservation Network (ENSCONET) seed banks and the crop genebanks) are also assessed with the Plant Search database and that data is analyzed with regard to the status of conservation in the country of origin. Further work is also required to identify and record species in recovery programmes. In this respect, BGCI is currently also adapting the 1992 BGCI Propagation database for endangered British and Irish plants and will link this to the Plant Search Database; this database will help to promote the link to *in situ* conservation and monitor the achievement of the second part of Target 8: *10% of threatened plant species included in recovery and restoration programmes*.

51. PlantNetwork, the plant collections network of UK and Ireland has developed a project in response to Target 8, linking *in situ* and *ex situ* conservation. The aim of the project is therefore for PlantNetwork's member gardens to cultivate one or more threatened species in the flora of Britain and Ireland, and in so doing to develop scientific and horticultural expertise in *ex situ* conservation of vascular plants in order to assist and support *in situ* conservation work. The project was initiated in 10 gardens and is being rolled out to further gardens during 2006

52. Bioversity International ahs a variety of activities linked to implementation of target 8 include the following: Establishment ex situ seed gene banks in Libya (with IFAD funding), Oman, Qatar, Egyptian Desert Research Centre, Egypt and Kazakstan as well as provision of technical support in the improvement of many existing genebanks (e.g. in Iran and Morocco, Eritrea, Rwanda Burundi, Bolivia,

Peru and Yemen). These efforts have facilitated the collection of local diversity ex situ, especially many neglected and underutilized species.

53. Others include reintroduction of lost varieties of lupins to local communities in Ecuador, establishment of ex-situ conservation areas for bamboo in Malaysia and China and development and implementation of procedures for ex situ conservation of dipterocarps in Malaysia.

54. The establishment of an International Coconut Genebank (ICG) in Brazil, in 2006 is the fifth in a network of field banks and provide the repository of the coconut germplasm that represents the diversity of the Latin American and Caribbean region. ICGs for other regions were previously established in Southeast Asia (ICG-SEA), South Asia (ICG-SA), South Pacific (ICG-SP) and the Africa and Indian Ocean (ICG-AIO).

55. Bioversity is also responsible for the maintenance of the world collection of banana and plantain. It produced the first version of the Global Conservation Strategy for Musa in 2006 which sets out a framework for conserving the Musa gene pool in ex situ collections (in vitro at a global level, and in field collections (and possibly also in botanic gardens) in the country of origin). Current estimates suggest that around 64% of wild Musa species is currently held in vitro in the International Network for the Improvement of the Banana and Plantain (INIBAP) Transit Centre (ITC) and this germplasm is in the process of being cryopreserved. What percentage of threatened wild species is represented in the collection may be determined once the list of threatened species is agreed (but it is likely to be less than 60 per cent).

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

56. A background paper was prepared by FAO and Bioversity and was distributed to stakeholders in mid-September 2003. The outcomes of the stakeholder consultation were reported to the Commission on Genetic Resources for Food and Agriculture at its third session in October to 2005 and the Secretariat to the CBD. By combining *ex situ* and *in situ* methods in complementary ways and focusing 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 Treaty[4/], will be effectively conserved.

57. The International Treaty on Plant Genetic Resources for Food and Agriculture (IT-PGRFA) is a comprehensive agreement, the objective of which is to achieve the conservation and sustainable use of Plant Genetic Resources for Food and Agriculture (PGRFA), and the fair and equitable sharing of benefits derived from their use, in harmony with the CBD. FAO is supporting member countries to implement the *International Treaty* which covers all plant genetic resources relevant for food and agriculture. The legally binding *International Treaty* was adopted in November 2001 and came into force in June 2004. As of November 2006, 106 countries have signed the Treaty. The first Session of the Governing Body of the IT-PGRFA was held from 12-16 June 2006 in Madrid, Spain. It includes several supporting components which are relevant to management aspects of GSPC targets. These supporting components and how they contribute to the implementation of the GSPC are described below. Implementing the *International Treaty* and its supporting components directly can contribute to the implementation of Target 9 of the GSPC and also contributes to targets 6, 8, 12 and 13, as well as cross-cutting targets such as 3, 14, 15 and 16.

58. An overview of the linkages between these activities and GSPC targets is presented in the table below.

59. Maintenance of associated indigenous and local knowledge remains the aspect of Target 9 that probably presents the greatest challenge. Other major obstacles are a lack of tested methodologies and limited assessments of indigenous and local knowledge associated to plant genetic diversity. In addition,

4/ The scope of the International Treaty covers all Plant Genetic Resources for Food and Agriculture

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.

60. The Pilot test for the new monitoring system for the implementation of the Global Plan of Action has been tested and the revised indicators and reporting format were adopted by the Commission on Genetic Resources for Food and Agriculture at its 10th regular session in 2004. Data have been reported by countries using the new monitoring system. The data will be reported in the Second Report of the State of the World's Plant Genetic Resources for Food and Agriculture to be published in 2008. At its 10th Session, the CGRFA accepted the invitation of the Conference of Parties to the CBD[5/] (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. The Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture of the Commission on Genetic Resources for Food and Agriculture (CGRFA), at its 3rd session was informed on the implementation of the GSPC.

Overview of priority activities of the Global Plan of Action contributing to Targets of the GSPC

Priority Activity Global Plan of Action	GSPC Targets
1 – 4 *In Situ Conservation and Development*	Target 3 (models with protocols)
	Target 9 (plant genetic diversity)
	Target 13 (plant resources, and associated indigenous and local knowledge)
5 – 8 *Ex Situ Conservation*	Target 3 (models with protocols)
	Target 8 (plant species in accessible ex situ collections)
	Target 9 (Plant genetic diversity)
9 - 14 *Utilization of Plant Genetic Resources*	Target 12 (plant products sustainably managed)
15 - 20 *Institutions and Capacity Building*	Target 14 (communication, educational and public-awareness programmes),
	Target 15 (trained people),
	Target 16 (networks)

61. 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.

62. Another relevant initiative is the Global Crop Diversity Trust to ensure the long-term conservation and availability of PGRFA, with a view to achieving global food security and sustainable agriculture, came into force on 21 October 2004.

63. FAO with Bioversity International have initiated activities to implement target 9 of the Global strategy on Plant Conservation at the national level in Mali. Activities that are completed include: mapping current conservation and conservation related activities; reviewing documentation (annual reports etc) on relevant projects and activities; identifying stakeholders, potential crops and other socio-economically important species, and relevant conservation activities; and developing a draft work plan to implement Target 9 of the Global Strategy for Plant Conservation in Mali.

5/ 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

64. Other FAO forestry related instruments and resource material that contribute to the implementation of PGRFA related targets of the GSPC include the following:

(a) Country Reports on the State of Forest Tree Genetic Diversity (approx. 50 country reports available at the end of 2003);

(b) The FAO Panel of Experts on Forest Tree Genetic Resources

65. More than 50 Country Reports developed on the State of Forest Tree Genetic Diversity. Data on genetic diversity of a few selected species have been collected in Europe and is available in the EUFORGEN database

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

66. FAO hosts Secretariat of the International Plant Protection Convention (IPPC)[6/] which coordinates the activities of the Convention. The Secretariat has the responsibility for coordination of the IPPC work programme involving standard setting, information exchange and technical assistance. The implementation of the Convention contributes to the implementation of Target 10 by developing: phytosanitary standards; an infrastructure for plant risk analysis; definitions and terminology; and sharing information through the International Portal on Food Safety, Animal and Plant Health.

67. During its Seventh Session the Interim Commission on Phytosanitary Measures (ICPM) indicated its desire to enhance cooperation between the IPPC and the CBD on matters relating to, *inter alia*, invasive alien species, and to further strengthen activities in this area within the framework of the IPPC. The ICPM recommended that contracting parties and NPPOs promote the IPPC and participate in broader national strategies to address threats to biodiversity posed by invasive alien species, so that maximum advantage can be taken of existing structures and capacities under the IPPC [7/].

68. The ICPM, during the same meeting, recommended contracting parties and National Plant Protection Organizations (NPPOs), to: collect, where appropriate, information on the alien invasions of pests of plants (including plants that are invasive alien species); and forward this to the CBD national focal points, to assist in monitoring progress towards the 2010 biodiversity targets outlined in the COP-7 Decision VII/30. The ICPM also requested the Secretariat to:

- Provide available and relevant information on alien invasions of pests of plants (including plants that are invasive alien species) to the CBD Secretariat, to assist in monitoring progress towards the 2010 biodiversity targets outlined in the COP-7 Decision VII/30; and
- Support the implementation of this Decision as a priority for work under the IPPC, within available resources.

69. The Global Invasive Species Programme (GISP) facilitated stakeholder consultations, the outcomes of which will guide the implementation of actions to achieve Target 10. Five countries or sub-regions where there are World Conservation Union (IUCN) offices were invited to take part in testing this matrix approach, these are: Chile (South America), Costa Rica, Senegal (West Africa), United Republic of Tanzania (East Africa) and Viet Nam (see www.gisp.org).

6/ The purpose of the IPPC is to secure common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control. As of 3 November 2006 there were 159 Parties to the IPPC. The scope of the Convention is much wider than the protection of cultivated plants and extends to the protection of natural flora and plant products

7/ ICPM 7, Report of the Seventh Session of the ICPM (2005). See: https://www.ippc.int/id/75067?language=en

70. A 'Target 10 Task Team' was formed and it recommended that national expert teams use the matrix to help them identify which invasive species are particularly threatening to plant diversity:

- In specific biodiversity priority areas, including Important Plant Areas or national parks, or
- For specific threatened plant species, e.g. Red Data List or nationally endemic plants, or
- For plants of importance in agriculture, medicine or other economic or cultural activities.

71. The teams that tested a matrix approach that was developed to identify priority taxa for the development of management plans and suggested that the approach could be improved as follows:

- ***Clearer instructions*** on how to complete the matrix are needed.
- ***Clearer criteria*** need to be set for the selection and prioritization of which invasive species to include in the matrix. This would eliminate the subjectivity of the experts who may work on particular Taxa.

72. Clearer guidelines or criteria for ***prioritizing invasive species*** are necessary to assist with completion of the matrix.

Target 11: No species of wild flora endangered by international trade; GSPC Target 11 and CITES

73. The purpose of CITES, as outlined in the CITES Strategic Vision through 2007, is to ensure that no species of wild fauna or flora becomes or remains subject to unsustainable exploitation because of international trade. In essence, Target 11 forms the core business of CITES activities. For flora species already included in CITES Appendix I, the CITES Plants Committee suggest that CBD Parties and in particular their GSPC focal points, be aware of the provisions in place through CITES by being provided with a full list of the flora species included in CITES Appendix I through the respective convention Secretariats. (They are on the website).

74. CBD Parties have been further encouraged to take Appendix I species into consideration in their *in situ*, *ex situ* and sustainable use actions (CBD Articles 8, 9 and 10), particularly in actions outlined in their National Biodiversity Strategies and Action Plans (Article 6). For example, CITES Parties have agreed to encourage cooperation between Parties with *ex situ* breeding operations and those with *in situ* conservation programmes (CITES Resolution Conf. 13.9). CBD Parties may wish to consider similar cooperative actions when developing or updating their National Biodiversity Strategies and addressing the GSPC.

75. Ongoing actions undertaken for flora species included in CITES Appendix II can help ensure Target 11 is met. Appendix II species can be subject o a Review of Significant Trade if monitoring of CITES trade data raises a concern with potentially harmful levels of international trade in the species. The periodic review of the Appendices is another monitoring tool which can identify any changes to species status that may merit a change in its listing status (transfer between Appendices or deletion from the Appendices). Finally, the requirement that a non-detriment finding be made before trade in specimens of Appendix II species occurs is in place to help ensure sustainability to trade and mitigate potential impact from international trade.

76. Among the actions undertaken by the Plants Committee the following can be given as examples that show a positive contribution to GSPC: Under the process of Significant Trade Review, important listed plant groups such as Cycads, Agarwood, Tree Ferns and some medicinal plants have been analyzed, resulting in measures being taken to ensure that the international trade is sustainable. Even on non listed species such as *Harpagophytum* the Plants Committee has facilitated collaboration between range states to ensure that harvest on this species is sustainable in such a way that the inclusion in to CITES appendices is not needed. In addition, Studies on biology and trade in taxa line: *Guaiacum* spp., *Taxus* spp., various timber species, *Tillandsia xerographica*., *Hoodia* spp., Mahogany, Orchidaceae, Cactaceae, Leaf bearing cacti, among others, have been undertaken to correctly reflect their conservation and management needs.

77. While this target is being implemented in the framework of the CITES agreement, many botanic gardens contribute to CITES implementation, for example through providing training and acting as rescue centres for confiscated plant materials. For example, the Smithsonian Institution Department of Botany is involved in two programs that will eventually assist trafficking agents identify endangered plants: plant image recognition technology and plant identification protocols using DNA barcode technology. Plant image recognition software uses shape matching algorithms that can identify specimens by comparing the shape of leaves from an unknown species to the shape of leaves of a digitized species image library. DNA barcode technology, a rapid, cost effective system, uses short gene sequences taken from a standardized portion of the genome, used to identify species.

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

78. In the background paper by FAO prepared for the stakeholder consultations, the following sub targets were identified in relation to particular products that fall in the scope of Target 12, such as: *Sub-target 1: Agricultural products, Sub-target 2: Forest products (Sub-target 2.1: Wood products, Sub-target 2.2: Fuel wood products and Sub-target 2.3: Non wood forest products)* or Sub-targets related to certification programmes or standards. The outcomes of stakeholder consultation were reported to the Commission on Genetic Resources for Food and Agriculture at its third session in October to 2005 and the Secretariat to the CBD.

79. However, it was noted that monitoring progress towards the implementation of target 12 will be challenging. There is a lack of an agreed definition of what management practices can be considered consistent with the conservation of plant diversity. This gap, combined with a lack of baseline data on management practices in forest and agricultural production land makes it difficult to assess progress implementing the target at a global level.

80. FAO has facilitated the collection, analyses and dissemination of national, regional and international statistics on all aspects of forest and forest industry resources, production and trade and other important socio-economic variables. This is an ongoing activity of which the statistical data has been analyzed and reported in *Global and Regional Forest Sector Outlook Studies* and *Yearbook of Forest Product.* FAO has been providing support to all the nine regional criteria and indicators processes for monitoring progress towards sustainable forest management.

81. FAO also monitors and advises on developments in trade and marketing of forest products, conducts capacity surveys for the analysis of trade and marketing conditions and provides technical assistance to FAO Members in related fields of activities. A product of this work is the FAO Pulp and Paper Capacities Survey, which presents statistics on pulp and paper capacity and production by country and grade. In addition, FAO works towards the enhancement of forests and forest products' contribution to poverty alleviation while ensuring environmental sustainability by: 1) identifying the potential of non-wood forest products (NWFPs), improved harvesting and production methods, and wide dissemination of related knowledge at all levels; 2) re-appraising the value and potential of wood fuels as a clean, safe and economical energy source and raising awareness of their importance at policy level, including improved information systems; and 3) developing a regional code of forest harvesting for South America and assisting countries in Asia, Africa and South America to introduce reduced impact logging practices based on regional codes of harvesting.

82. These statistics can contribute to monitoring progress towards the implementation of Target 11 (trade in endangered plant species) and Target 12 (plant products from sources that are sustainably managed). The challenges on using forest trade statistic are that they are not collected by species and there is little information available on the sustainability of forest management in relation to plant diversity. Currently there are no certification or existing environmental and social standards and certification programmes that include the conservation of plant diversity.

83. Bioversity has also worked with Bolivia on establishing organic banana production in Bolivia. China, Ecuador, Morocco and Uganda are implementing a UNEP/GEF supported project on the use of within crop diversity to reduce the damage caused by pests and diseases. This project will improve sustainable production in rice, barley, Fava bean, banana, *Phaseolus* bean. The increased use of crop diversity arising from enhanced production of neglected and underutilized crops including nutritious millets, Andean grains, Bambarra groundnut, and Fonio is also expected to improve sustainability.

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

84. 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. Target 13 therefore deals with two of the main challenges facing plant conservation: firstly, overexploitation of plant resources and secondly, the loss and erosion of local systems of knowledge and management of plant resources due to socio–economic changes. Three additional large challenges are (1) habitat loss and fragmentation; (2) global climate change (3) species introductions and invasions. Other key issues that were addressed include the selection of plant resources and livelihoods / communities and defining associated indigenous knowledge and sustainable livelihoods. Also the issues of the relationship between plant resources and associated indigenous knowledge, innovations and practices, and livelihoods and the integration of scale and sectors are integral.

85. The outcomes were also reported to Commission on Genetic Resources for Food and Agriculture at its third session in October to 2005 and the Secretariat to the CBD. The stakeholder consultation 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.

86. FAO has several programmes that address the subject of the conservation and sustainable use of biodiversity and associated local indigenous knowledge. These activities are not limited to, but include plat biodiversity and resources. Some examples of the most relevant project and programmes are the following:

- Farm Management and Production Economics Service's work on the role of wild plants in many farming systems[8/]
- FAO's programme on the promotion and development of non-wood forest products
- Several studies have been completed in 2005 on local knowledge in relation to management of agrobiodiversity for food security in the United Republic of Tanzania under the FAO-LinKS project.
- Activities on access to forest resources and other plant resources under the FAO Livelihood Support Programme (LSP).
- The FAO Non-Wood Forest Products (NWFP) programme in particular (in view of the many types of NWFP) are investigating tools and practices to support livelihoods based on forest products use, such as certification and benefit sharing arrangements. (more info : http://www.fao.org/DOCREP/ARTICLE/001/AB542E01.HTM
- Support provided to community based institutions and user groups provided in various projects in the conservation and sustainable use of PGRFA and local seed systems Within the framework of

8/ See: http://www.fao.org/docrep/003/W8801E/w8801e00.HTM

the implementation of the Global Plan of Action on the Conservation and Sustainable Utilization of PGRFA (GPA).

- The FAO-GEF-UNDP project on conservation and adaptive management of Globally Important Agricultural Heritage systems (GIAHS) aiming to establish the basis for the global recognition, conservation and sustainable management of such systems and their associated landscapes, biodiversity, knowledge systems and cultures. During the preparatory phase (2002-2006), the GIAHS initiative has identified pilot sites in Peru, Chile, China, the Philippines, Tunisia, Morocco and Algeria.

87. Relevant initiatives supporting this target include certification schemes developed for forest products, organic agriculture etc.; IUCN Sustainable Use Initiative; International Treaty on Plant Genetic Resources for Food and Agriculture; GPA activity 12: promoting development and commercialisation of under-utilised crops and species and GPA activity 14: developing new markets for local varieties and "diversity-rich" products.

88. For the crops under Bioversity International's mandate, indigenous knowledge has been documented and practices for using and processing Musa diversity for commercial products have been tested and implemented in 4 locations in Uganda and the United Republic of Tanzania. The global coconut conservation strategy was developed and is currently in the final stages of refinement. COGENT is implementing poverty reduction research in coconut-growing communities that will encourage conservation through the use of coconut diversity. A catalogue of farmer's coconut varieties which includes description of traits with special economic uses and a book of coconut recipes from different countries, is currently being prepared (to be printed in 2007). Methods and good practices regarding indigenous knowledge and community-based organization associated with the use and conservation of crop diversity in Nepal and the Sahel have been developed, tested and implemented.

89. Through BGCI, many botanic gardens are involved in projects in which plant diversity is being used sustainably to support human well-being. Such projects involve the use of plants for medicinal and nutritional purposes and using plants to generate income and social and community benefits. A full report on this was published by BGCI in 2006 (www.bgci.org/wellbeing). The report provides many examples and case studies of the work of botanic gardens in this area – but still only describes a fraction of the work actually being undertaken by botanic gardens in support of this Target. BGCI itself has supported over 40 projects related to human well-being through the Investing in Nature programme. These projects have taken place in India, Brazil, Argentina and Mexico.

90. Overall, major challenges remain in implementing Targets 6, 9 and 12 of the GSPC. These relate to the need for:

- Integration of conservation and sustainable use into agriculture agenda
- Institutional strengthening
- Linkages with farmers and communities
- Address market related challenges

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes

91. Target 14 was originally considered to be a 'cross-cutting' target – and therefore was expected to be addressed in the context of the implementation of the other GSPC targets. However, it soon became clear that this was not going to provide an adequate means of monitoring progress on this important target. Given that botanic gardens worldwide receive around 300 million visitors every year, the botanic garden community was thus considered to be well placed to take a lead role in the implementation of Target 14.

92. Following an expert group meeting on the GSPC in 2003, BGCI was therefore invited to help facilitate a stakeholder consultation on Target 14, involving expertise in communication, education and public awareness in relation to plant conservation. Further workshops on Target 14 were held in 2004 in the UK and at the 2nd World Botanic Gardens Congress in Spain and a series of stakeholder consultations were held in 2006 in Brazil, China, Indonesia, Russia, UK and USA. A summary report of these consultations was provided at the recent GSPC Expert Group meeting that was held in Dublin Ireland 23-25 October 2006. Reports of the stakeholder consultation were also presented at the International Congress for Education in Botanic Gardens, Oxford UK, September 10-14, 2006 (see www.bgci.org)

93. A number of recommendations were made during the stakeholder meetings. The full text of the Target 14 stakeholder consultation summary report is available on the website of the Global Partnership for Plant Conservation: www.plants2010.org and a more complete document, with case studies, is being developed.

94. Bioversity has done much in communicating to its stakeholders the importance of conserving and sustainably used biodiversity to improve the well being of people. The following are some of the actions undertaken by the centre:

- The "No end to the banana" exhibition of posters and artifacts concerning Musa diversity and the future of the banana was launched in 2005 and has been displayed in Leuven in Belgium, in Botanic Gardens in Edinburgh, UK, and Dublin, Ireland, and in the Eden Project in the UK. It is currently being transferred to the Annual General Meeting of the CGIAR in Washington (in December 2006), and, thereafter, will be hosted in a World Bank building.

- A high level Public Awareness Workshop was organized in Ghardaia, Algeria in 2003 where for the first time ever, high level journalists and media experts from 7 CWANA countries met to discuss on how to reach out policy makers and public opinion aiming at raising their level of support to PGR.

- Public awareness activities on the importance of crop wild relatives have been carried out in Armenia, Bolivia, Madagascar, Sri Lanka and Uzbekistan as part of the UNEP GEF supported crop wild relative project. A baseline study of awareness of the importance of crop wild relatives has been followed by activities targeted at policy makers, research scientists, protected area managers and other key groups. The mote recent edition of Geneflow has a section entirely devoted to crop wild relatives.

95. To reach the national and international plant systematics community in a public forum, the Department has been hosting the annual Smithsonian Botanical Symposium since 2001. The Symposium frequently has speakers that address plant conservation, with the 2002 Symposium having the entire focus on the impact of the CBD on scientists (see Annex III).

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

96. All partners organizations and stakeholder organizations have been actively involved in implementing activities related to this target.

97. For example, the Red Latinoamericana de Botánica- RLB (Latin American Plant Sciences Network, http://www.rlbbotanica. org), a member of the Global Partnership for Plant Conservation, has been engaged in the task of improving the number of qualified Latin American botanists in order to adequately survey vegetation, understand the functioning of the ecosystems and provide the basis for the conservation and management of the important natural resources within Latin America. Through a consortium of a select number of prestigious Latin American institutions located in Mexico, Costa Rica, Venezuela, Brazil, Chile and Argentina, the RLB has trained almost 200 graduate level researchers from

18 countries as well as offered 56 short-term specialized graduate courses, it has funded ca. 100 scientific events and provided more than 160 small grants for botanical research in Latin America. During these years, RLB has developed these and other kind of activities, all of them focused on capacity building, education, conservation and sustainable use of plant biodiversity in Latin America.

98. From another perspective, the Royal Botanic Gardens, Kew UK has been hosting a biennual International Diploma Course in Plant Conservation Strategies, with the curriculum based on the sixteen targets of the Strategy (www.kew.org). Kew has been actively involved in supporting capacity building at a regional level in Africa, Asia and Caribbean for the implementation of the Strategy.

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

99. Networking helps to build capacity through the exchange of information and experiences. There are various international, regional and national networks, such as those for botanic gardens (BGCI); plant genetic resources (Bioversity International); agriculture (FAO) and taxonomic networks (GBIF) among others.

100. At the regional level, BGCI has helped to establish and strengthen botanic garden networks in the Caribbean, Europe, the Middle East, South East Asia and East Asia. In addition, a BGCI-supported workshop at the recent Latin American Botanical Congress allowed the formulation of a regional response to the GSPC for Latin America and the Caribbean and the formation of a regional partnership for plant conservation.

101. At the international level, the organization of the Global Botanic Gardens Congress every three years provides an ideal opportunity for networking between botanic gardens worldwide. The 3rd Global Botanic Gardens Congress, held in April 2007 in Wuhan, China (www.bgci.org) had its whole programme based around the GSPC and assessing progress towards the targets. BGCI is also involved in networking with the broader plant conservation community, being a key member of the Global Partnership for Plant Conservation. (GPPC) This Partnership was set up to support the implementation of the GSPC and includes the main international organizations involved in plant conservation. BGCI provides the Secretariat for the GPPC and hosts its website: www.plants2010.org

102. Bioversity supports and participates in many different regional and international networks, providing the secretariat in some cases. This support has been continuous over the period under review. A critical analysis of the status of network activities and the ways in which they can be strengthened is currently in progress. The networks include regional and sub-regional ones concerned with plant genetic resources conservation, crop networks, and subject area networks. Within the crop plant conservation community, networks have always been an essential way of doing business and this is likely to continue to be the case. It is expected that the importance of network based activities will increase as a result of the work of the Crop Diversity Trust and the entry into force of the ITPGRFA.

103. However, closely linked to the GSPC is the Planta Europa Network, which working closely with the Council of Europe has mobilised its' plant conservation expertise to develop a master plan with concrete and achievable targets to halt the loss of wild plant diversity across pan-Europe, resulting in the European Plant Conservation Strategy (EPCS), which has been agreed as the way forward for plant conservation across a wider Europe in June 2001, at the 3rd Planta Europa Conference in Pruhonice, Czech Republic.

104. The CBD decision VI/9 recognised the EPCS in this as regional contribution, a step that significantly helped raising the profile of protecting plants in Europe. The European Plant Conservation Strategy (EPCS) was also submitted to the Standing Committee of the Bern Convention and recognised as a valuable contribution to the GSPC (Recommendation No 87, 2001). The five key objectives of the GSPC are mirrored in the European Plant Conservation Strategy (EPCS). The European Strategy

translates the wider global targets into the regional political and cultural framework and provides a set of more concrete targets to be achieved by 2007.

105. In a highly complex conservation arena such as Europe, effective cooperation is impossible without the focussed cooperation of Networks or working groups. Planta Europa, European Council for the Conservation of Fungi (ECCF), ENSCONET, European Committee for Conservation of Bryophytes (ECCB) and the newly established European Mycologists Association (EMA) are just a few examples of cooperation for plant conservation in Europe. Through links with Planta Europa, they are actively contributing to the implementation of the European Strategy for Plant Conservation.

106. At the 4th Planta Europa Conference in Valencia, Spain, September 2004, plant conservationists from across Europe carried out a mid-term review of the EPCS (see www.plantaeuropa.org). The objective of this mid-term review was to identify obstacles and assess the progress in the implementation of the EPCS targets. The outcome of this review was very promising: More than 50% of the 42 targets of the EPCS were progressing well and two had already been achieved by 2004.

107. The focus of the EPCS review was centred on the contribution of the Planta Europa Network in implementing the EPCS. As a result the development of the Seven Critical Targets for Planta Europa Network was a key output of the mid-term review. In 2007, the Planta Europa Network and Council of Europe will carry out an extensive review of the implementation of the first set of EPCS targets. All relevant stakeholder groups in the region are being consulted in this process. As part of this process, a vision for plant conservation beyond 2010 will be developed based on the long-term vision incorporated in the current EPCS. The final review process of the first set of EPCS targets will be concluded during the 5th Planta Europa Conference in Cluj-Napoca, Romania, in September 2007.

Annex 1

ACTIVITIES OF THE GLOBAL PARTNERSHIP FOR PLANT CONSERVATION

(1) 4th Planta Europa Conference in Valencia, Spain, from 17 to 22 September, 2004. This conference reviewed progress in the implementation of the European Plant Conservation Strategy and the achievement of its targets (*Plantlife International and Planta Europa*);

(2) Support for the implementation of the *International Agenda for Botanic Gardens in Conservation* worldwide. The *International Agenda* provides a policy framework for botanic garden contributions to the GSPC throughout the world. Led by BGCI, the *International Agenda* has been formally adopted and endorsed by c.500 individual botanic gardens. A major five-year programme in support of its implementation was launched by BGCI in 2002, the 'Investing in Nature' initiative, supported through a GBP£8.6 million grant from the HSBC Banking Corporation plc. Activities have included a wide range of national programmes relevant to the GSPC in such countries as Argentina, Brazil, Canada, China, India, Indonesia, Jordan, Mexico, the Russian Federation and the United States. In-country programmes have included elements of capacity building, communications and public awareness, plant conservation action and support for the sustainable use of plant resources *(BGCI).*

(3) Support for a national workshop in the Seychelles from 15 to 16 March, 2004 to develop a National Plant Conservation Strategy (*BGCI*);

(4) Assisting in the organization of a national workshop in November 2006 in China to review national GSPC implementation (*BGCI, the Chinese Academy of Sciences and other national partners*);

(5) A Caribbean regional GSPC workshop to increase the understanding and implementation of the GSPC in the region (*BGCI, Royal Botanic Gardens Kew and the UK Joint Nature Conservation Committee*);

(6) Support for a regional training course for plant conservation practitioners in Africa, held in Kampala, Uganda from 10 October to 3 November, 2004 (*Royal Botanic Gardens Kew, Makerere University of Uganda, SCBD and BGCI*);

(7) Organization and support for the 2nd World Botanic Gardens Congress held in Barcelona, Spain from 17 to 22 April, 2004 where GSPC-related 2010 targets for botanic gardens were developed and adopted (*BGCI*);

(8) Conservation of Important Areas for Plant Diversity (IPAs) (Target 5) in various European and other countries, including defining criteria for designating such areas, their identification and subsequent management (*Plantlife International*);

(9) Establishment of a major new on-line database of plants included in botanic gardens worldwide (The Plant Search), as a contribution to monitoring the achievement of Target 8. This database has already incorporated data on more that 150,000 taxa held in plant collections in at least 600 botanic gardens worldwide. To date the database has been used to locate in excess of 12,000 rare or endangered plants listed by IUCN as globally threatened. The database is accessible through the BGCI website (www.bgci.org) and includes the means for individual institutions to upload and manage their own data. The database provides a valuable means for in-country organizations to manage and review data on their own and on other national collections. *(BGCI).*

(10) Strengthening awareness of invasive alien species as a threat to plant habitats, as part of Target 10 implementation *(GISP)*;

(11) Development of a project supported by the Global Environment Facility (GEF) involving several countries to identify important and threatened plants in each of the countries and their Important Plant Areas, as well as to put in place sustainable management plans for these areas (*IUCN* and *BGCI*);

(12) Participating in a 'Gap Analysis' meeting held at Kew, U.K. from 28 to 30 June 2004 to review progress towards GSPC Target 1 (*RBG Kew; GBIF, Species2000; BBSRC*);

(13) Organization of two regional meetings to explore the potential for an Arabian Regional Plant Conservation Strategy (2004 and 2005) *(IUCN Arabian Plant Specialist Group and other partners);*

(14) Organization of a keynote addresses, a symposium and workshop at the Latin American Botanical Congress in Santo Domingo, Dominican Republic in June 2006 to raise awareness of and promote national implementation of the GSPC in Latin American countries and support the development of a regional partnership for plant conservation in Latin America *(Red Latinoamericana de Botánica and the Global Partnership for Plant Conservation);*

(15) Organization of a workshop in December 2005 in Bogota, Colombia for botanic gardens in Latin America to develop regional 2010 targets for Latin American botanic gardens *(Asociación Latinoamericana y del Caribe de Jardines Botánicos, BGCI, the Red Nacional de Jardines Botánicos de Colombia and partners);*

(16) Organization of a series of workshops and other sessions on the GSPC at the 4th European Botanic Gardens Congress in Prague, Pruhonice, the Czech Republic in September 2006 *(BGCI, the BGCI/IABG European Botanic Gardens Consortium and partners);*

(17) Participating in an ad hoc meeting of representatives of Partnership member organizations held at Kew, U.K. on 6-7 May, 2004 to review the ways and means of national implementation of the GSPC that can be supported by the Partnership, while at the same time reviewing existing and suggesting new global level enabling activities;

(18) Completing a pilot project investigating ways of accelerating production of a working list of known plant species (Target 1) and preliminary assessments of conservation status of selected species (Target 2) *(RBG Kew, Missouri Botanical Garden, New York Botanical Garden*) and large-scale mobilization and analysis of specimen data to assist in targeting seed collections and preparation of preliminary assessments of conservation status (Targets 2 and 8) *(RBG Kew).*

(19) Work on the implementation of a Global Threatened Trees programme to highlight the importance of trees and the threats they face has continued *(Fauna and Flora International(FFI and BGCI);*

(20) Investing in the completion of global checklists for Leguminosae, Rosaceae and Rubiaceae and all monocot families as contributions to Target 1 *(GBIF, ILDIS, Royal Botanic Garden Edinburgh; RBG Kew);*

(21) Establishing a European network of seed banks for the conservation of wild species (*RBG Kew, ENSCONET)* and on-going collaboration with 31 institutes in 17 countries engaged in *ex situ* seed conservation (Target 8) (*RBG Kew and partners*);

(22) Organizing the International Conference in Education in Botanic Gardens in September 2006, contributing in particular to the implementation of Target 14 *(BGCI, the University of Oxford Botanic Garden, the Royal Botanic Gardens Kew and other partners);*

(23) Development of a *North American Botanic Gardens Strategy for Plant Conservation,* including 2010 targets *(BGCI, the Canadian Botanical Conservation Network, the Center for Plant Conservation and the American Public Garden Association);*

(24) Workshops and other meetings involving over 500 stakeholders held at the World Parks Congress in Durban, South Africa in September 2003 on the conservation of important areas for plant diversity (Target 5) *(IUCN and Plantlife International);*

(25) Convening an international technical task team to strengthen the short- and medium-term activities contributing to Target 10 *(GISP and IUCN SSC Invasive Species Specialist Group);*

(26) Recognizing the GSPC as a priority for ECAT (Electronic Catalogue of Names of Known Organisms) proposals in 2004 for ECAT seed money grants (http://www.gbif.org/rfp2004/ecat_rfp2004) *(GBIF);*

(27) The Global Biodiversity Information Facility (GBIF) has set up seed funding mechanisms to support the implementation of Target 1 of the GSPC and included consideration of the GSPC in its Science Symposium held in Cape Town, South Africa from 4-6 April, 2006 *(GBIF);*

(28) A project on the *in situ* conservation of crop wild relatives through enhanced information management and field application has been undertaken since 2004, supported by UNEP/GEF to address national and global needs to improve global food security through effective conservation and use of crop wild relatives. It brings together national partners in five countries: Armenia, Bolivia, Madagascar, Sri Lanka and Uzbekistan. Four international conservation agencies are partners in the project (*IPGRI, FAO, BGCI, UNEP-WCMC and the German Centre for Documentation and Information in Agriculture (ZADI)*);

(29) A conference of the Caribbean Botanic Gardens for Conservation network was held in Belize in September 2005, hosted by the Belize Botanic Gardens where priorities for GSPC implementation and the role of Caribbean institutions was considered. Draft regional targets for botanic gardens in the Caribbean were proposed *(BGCI, CBGC and partners).*

Annex II

MEMBERSHIP OF THE GLOBAL PARTNERSHIP FOR PLANT CONSERVATION

1. The Partnership consists of organizations, institutions, secretariats and other bodies that have substantial programmes in plant conservation.

2. Any bona fide organizations and institutions, including governmental and non-governmental organizations (NGOs), indigenous peoples organizations (IPOs), the private sector, that are playing an important role in supporting the implementation of the Global Strategy for Plant Conservation are invited to participate in the Partnership. Membership is open to all bodies that endorse the objectives of the GPPC and are committed to facilitating and promoting its implementation, unless the participation of that organization in the Partnership would be likely to jeopardize the aims of the Partnership.

3. The Partnership has no existing legal status but represents a voluntary approach by member organizations to a common cause, the GSPC, who have agreed to come together to support the GSPC implementation. The Partnership does not seek to compromise the independence of any of its members but aims to create synergies and add value to existing initiatives, particularly in support of national GSPC implementation and in supporting efforts being made by Parties in responding to the GSPC.

4. At its General Meeting on 25th September 2005 the Partnership elected Dr Peter Wyse Jackson as its Chairman until the next General Meeting and appointed Botanic Gardens Conservation Secretariat as providing its Secretariat.

5. Members of the Global Partnership for Plant Conservation as of 23rd November 2006 are as follows:

- Asociación Latinoamericana y del Caribe de Jardines Botánicos (ALCJB)
- BioNET International
- Botanic Gardens Conservation International (BGCI)
- BGCI/IABG European Botanic Gardens Consortium
- Chinese Academy of Sciences – Botanic Garden Network
- Earthwatch
- Fauna and Flora International (FFI)
- Food and Agriculture Organization of the United Nations (FAO)
- Global Biodiversity Information Facility (GBIF)
- Global Invasive Species Programme (GISP)
- International Plant Genetic Resources Institute (IPGRI)
- IUCN - The World Conservation Union - Species Survival Commission
- Jardí Botànic de la Universitat de València, Spain
- King's Park and Botanic Gardens, Australia
- Missouri Botanical Garden, St Louis, U.S.A.
- National Botanic Gardens of Ireland
- National Museum of Natural History - Smithsonian Institution, Washington D.C., U.S.A. (NMNH-SI)
- People and Plants International (PPI)
- Planta Europa
- Plantlife International
- Rede Brasileira de Jardins Botânicos (RBJB)
- Red Latinoamericana de Botánica

- Red Nacional de Jardines Botánicos de Colombia (RNJB)
- Royal Botanic Gardens Kew, U.K.
- Royal Botanic Garden, Edinburgh, U.K.
- South African National Biodiversity Institute (SANBI), South Africa
- Species 2000
- UNEP World Conservation Monitoring Centre (UNEP-WCMC)
- University of Oxford Botanic Garden & Harcourt Arboretum
- World Agroforestry Centre, ICRAF
- WWF International (WWF)

Annex III

The following presentations at the Smithsonian botanical symposiums have addressed Issues in plant conservation:

2002 – The Convention on Biological Diversity: The Globalization of Natural History Science

(a) "Caught Up in the Moment: Botanists and the CBD a Decade After Rio" by Brian M. Boom (Center for Environmental Research and Conservation)
(b) "The CBD Challenge in Botany: Emerging Responsibilities, Priorities and Practices" by Stella Simiyu (National Museums of Kenya)
(c) "Linking Science and Policy: The Case of the United Nations Convention on Biological Diversity" by Cristián Samper K. (Smithsonian Tropical Research Institute)
(d) "Impact of the Convention on Biological Diversity on Taxonomy and Biodiversity Information" by Scott Miller (National Museum of Natural History)
(e) "Access and Discovery of Pharmacologically Active Metabolites from Fungi and Other Microorganisms" by Gerald Bills (Merck Research Laboratories, Spain)
(f) "The Convention on Biological Diversity: Challenges and Opportunities in Mainstreaming Biodiversity into Society and Economy" by Braulio Ferreira de Souza Dias (Brazilian Ministry of the Environment)
(g) "Commentary" by Tom Lovejoy (The World Bank)
(h) "A Retrospective View of the Rio Convention" by Keynote Speaker, The Hon. Bruce Babbitt (Secretary, U.S. Department of the Interior, 19922000)

2003 – Botanical Frontiers in Southeast Asia

(a) "Conservation in Myanmar: A Tale of Taxonomy in the Golden Land" by Christen Wemmer (Conservation and Research Center, Smithsonian Institution) and U San Lwin (Institute of Forestry, Yezin, Union of Myanmar)
(b) "Botanical Diversity in Viet Nam: New Discoveries and Challenges in Conservation" by Jack Regalado (Viet Nam Botanical Conservation Program, Missouri Botanical Garden) and Nguyen Tien Hiep (National Center for Science and Technology, Hanoi, Viet Nam)

2005 –The Future of Floras: New Frameworks, New Technologies, New Uses

(a) "Using Computer Vision to Help Biologists Recognize Organisms" by David Jacobs (University of Maryland)
(b) "DNA Barcoding in Plants: Prospects and Problems" by Vincent Savolainen (Royal Botanic Gardens, Kew).
