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**PROGRESS IN ACHIEVING THE TARGETS OF THE GLOBAL STRATEGY FOR PLANT
CONSERVATION 2011-2020**

Note by the Executive Secretary

I. INTRODUCTION

1. At its tenth meeting, the Conference of the Parties, through decision X/17, adopted the consolidated update of the Global Strategy for Plant Conservation, including the outcome-oriented global targets for the period 2011-2020. In the same decision, it was decided to undertake a mid-term review of the implementation of the Global Strategy for Plant Conservation 2011-2020, in tandem with the mid-term review of the Strategic Plan for Biodiversity 2011-2020.

2. In decision XI/26, the Conference of the Parties agreed that monitoring the implementation of the Global Strategy for Plant Conservation, including the use of indicators, should be seen in the broader context of, and linked to, the monitoring, review and evaluation of the Strategic Plan for Biodiversity 2011-2020 (paragraph 6), and requested the Executive Secretary, in collaboration with the Biodiversity Indicators Partnership and other relevant organizations, when preparing indicator-based information for the fourth edition of the Global Biodiversity Outlook, to disaggregate information relevant to plant conservation, where possible (paragraph 8).

3. This note is intended to assist the Subsidiary Body on Scientific, Technical and Technological Advice to prepare the mid-term review of the Global Strategy for Plant Conservation 2011-2020 and to prepare recommendations on this topic for consideration by the twelfth meeting of the Conference of the Parties. It draws on a technical background document on progress made in implementing the Strategy, prepared by Botanic Gardens Conservation International, in collaboration with the Global Partnership for Plant Conservation and the Secretariat of the Convention on Biological Diversity, which focuses on developments since the tenth meeting of the Conference of the Parties, i.e., on the period 2011-2013.¹

* UNEP/CBD/SBSTTA/18/1.

¹ Updates from incoming national reports and national biodiversity strategies and action plans will be incorporated until the date when the document needs to be issued.

4. The document provides an overview of the approaches Parties have taken towards plant conservation (section II), summarizes major achievements for each of the GSPC targets (section III) and lists suggested recommendations (section IV). A summary assessment of progress is contained in the annex. An earlier draft of this note was made available for peer-review from 27 March to 17 April 2014.

II. NATIONAL APPROACHES TOWARDS IMPLEMENTATION OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION (GSPC)

5. In paragraph 6 (a) of decision X/17, the Conference of the Parties invited Parties and other Governments to develop or update national and regional targets as appropriate, and, where appropriate, to incorporate them into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans, and to align the further implementation of the Strategy with national and/or regional efforts to implement the Strategic Plan for Biodiversity 2011-2020.

6. Accordingly, countries have taken varied approaches towards planning and implementing plant conservation activities. Between 2011 and 2013, two countries (Mexico and South Africa) have developed national plant conservation strategies, and a regional strategy was developed for the Caucasus.

7. By 25 April 2014, the Secretariat of the Convention on Biological Diversity had received updated national biodiversity strategies and action plans from 24 Parties and a regional biodiversity strategy from the European Union. These strategies provide ample evidence of the socio-economic and cultural importance of plant diversity, levels of endemism, the diversity of uses, and threats to plants. Six of them make explicit reference to GSPC.

8. Given the multiple links between the 16 targets of the GSPC and the 20 Aichi Biodiversity Targets,² the majority of targets evidenced in the 25 national or regional biodiversity strategies and action plans³ apply to plants as an integral part of biodiversity. However, they do not always identify plant-specific targets or relevant stakeholders for activities related to plant conservation.

9. The GSPC targets which were most frequently referred to in biodiversity strategies include *in situ* conservation of threatened plant species (GSPC target 7); the conservation of threatened plant species in *ex situ* collections (GSPC target 8); and on the conservation of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species and associated indigenous and local knowledge (GSPC target 9).

10. A few biodiversity strategies also made reference to the following GSPC targets: securing portions of each ecological region or vegetation type through effective management and/or restoration (GSPC target 4); protecting the most important areas for plant diversity of each ecological region (GSPC target 5); the sustainable management of production lands in each sector (GSPC target 6); the prevention and management of invasive alien species (GSPC target 10); and the incorporation of plant conservation messaging into communication, education and public awareness programmes (GSPC target 14).

11. Other GSPC targets were rarely or not at all referred to in the biodiversity strategies. One would however assume that these may be reflected in associated action plans and specific activities undertaken in implementing the national strategies. The action plans would also likely identify relevant stakeholders with technical capacities relevant to the implementation of the GSPC.

² See annex 4 of report of the fourth meeting of the Liaison Group on the Global Strategy for Plant Conservation, <http://www.cbd.int/doc/meetings/pc/gspclg-04/official/gspclg-04-02-en.pdf>.

³ This analysis will be updated with information from additional updated NBSAPs and fifth national reports as it becomes available.

12. Among the major stakeholders referred to as partners in implementing plant conservation targets are botanical gardens, seed banks and other *ex situ* collections, the agricultural and forestry sectors, and phytosanitary services. Key processes referenced include the work of the Commission on Plant Genetic Resources for Food and Agriculture, the International Treaty for Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention and the Convention on the International Trade in Endangered Species of Fauna and Flora.

13. By 25 April 2014, 45 Parties had submitted their fifth national report. As with the biodiversity strategies and action plans, most Parties reported on plant conservation activities within the framework of the Strategic Plan for Biodiversity 2011-2020, although a few made specific links to the Global Strategy for Plant Conservation. For example, Mongolia reported on the completion of a Mongolian Red List of Plants and Conservation Action Plans, published in 2012 as a contribution to target 2 of the GSPC.

III. PROGRESS IN ACHIEVING THE TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION

Target 1: An online flora of all known plants

14. The achievement of this target is a fundamental requirement for the GSPC as it provides the baseline for work and for monitoring progress towards many other GSPC targets. Members of the Global Partnership on Plant Conservation (GPPC) acting at both national and global levels played a key role in the achievement of the 2010 target⁴ and are now putting in place actions to ensure the achievement of this target by 2020. The establishment of the World Flora Online Consortium⁵ is a major step towards this target. The Consortium has 20 member institutions and other institutions are planning to join. A preliminary World Flora Online prototype,⁶ hosted by the Missouri Botanical Garden, provides a potential means for hosting and presenting World Flora Online content.

15. Another ambitious e-taxonomy project, eMonocot,⁷ led by the Royal Botanic Gardens, Kew, represents both another partner in the development of, and potential host for, World Flora Online content.

16. The Global Plants Initiative⁸ is a major undertaking involving a number of GPPC partners that makes available more than 1.8 million plant type specimens and other resources to support floristic research around the world. In 2013, JSTOR released “Global Plants,”⁹ a new community-contributed online database for scientific researchers, conservationists and others engaged in studying the world’s plant biodiversity.

17. At the national level, good progress has been made in a number of megadiverse countries. For example, the completion of the Flora of China (after 25 years) is a significant achievement, and in Colombia, a catalogue of Colombian plants is in process of consolidation with 26,567 species identified, 29.3 per cent of them endemic; 171 botanists from 45 institutions and 19 countries have participated in this project.

⁴ Target 1 of GSPC 2002-2010: “A widely accessible working list of known plant species, as a step towards a complete world flora.”

⁵ <http://www.missouribotanicalgarden.org/plant-science/plant-science/world-flora-online.aspx>.

⁶ www.worldfloraonline.org.

⁷ <http://e-monocot.org/>.

⁸ <http://gpi.myspecies.info/>.

⁹ <http://about.jstor.org/content/global-plants-formerly-jstor-plant-science>.

18. GSPC target 1 has provided an important focus for botanical institutions around the world, and it is widely acknowledged that much greater progress has been made, both in creating new floristic information and in bringing together existing knowledge, than would have been achieved without this target.

19. In conclusion, it seems likely that this target is on track to be achieved by 2020, and this will make a significant contribution to the achievement of Aichi Biodiversity Target 19 (knowledge improved, shared and applied).

Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

20. The IUCN Red List of Threatened Species^{TM10} is recognized as the most comprehensive objective global approach for evaluating the extinction risk of species and is the scientific basis underpinning many of the indicators adopted by the Convention on Biological Diversity for monitoring progress towards the achievement of the Aichi Biodiversity Targets. However, one critical gap results from the limited information available for use in IUCN assessments on the conservation status of wild plants. By the end of 2013, only 6 per cent of plant species had been assessed at the global level using the IUCN criteria. This in turn makes monitoring progress towards targets 7 and 8 of the GSPC particularly difficult. However, it is recognized that it is unrealistic to expect all plant species to be fully assessed at the global level using the IUCN criteria by 2020. IUCN's target (based on the IUCN Species Survival Commission's Barometer of Life analysis) is to have 38,500 plants on the Red List by 2020 which means publishing an average of 3,300 plant species per year.

21. Good progress towards GSPC target 2 was made during the period 2011-2013, with 3,419 new plant assessments being added to the IUCN Red List in 2013 and the number of globally assessed plant species on the IUCN Red List increasing by 56 per cent between 2011 and 2013. This trend is anticipated to continue in the coming years because of changes to the minimum documentation requirements for Red Listing, collaboration between the IUCN global Red List and national Red List initiatives, including those for significant megadiverse countries, and other new collaborative projects.

22. As an interim measure to support the achievement of GSPC target 2, Royal Botanic Gardens Kew is leading an effort to produce a list of plant conservation assessments by compiling existing datasets, including the IUCN Red List. The interim list of plant assessments (for 2013) includes 58,494 unique plant assessments (approximately 16 per cent of all plants). Of these, 43 per cent of plants assessed are categorized as "threatened" with extinction, and more than half of the assessments are at regional or national level.

23. Good progress with Red Listing is being made at the national level, with many GPPC members being involved in the development and updating of national Red Lists. A unique South-South partnership involving Brazil, Colombia and South Africa has been established to share experiences and accelerate progress in Red Listing in megadiverse countries based on the IUCN Red List Categories and Criteria.¹¹ This has resulted, *inter alia*, in the publication of the Red Book of the Flora of Brazil,¹² a significant contribution to the achievement of target 2.

24. The evidence suggests that progress is being made towards this target, but the rate of progress is currently insufficient to meet the target by 2020. Lack of sufficient progress towards this target may constrain efforts to meet Aichi Biodiversity Target 19 (knowledge improved shared and applied).

¹⁰ <http://www.iucnredlist.org/>.

¹¹ <http://www.cbd.int/doc/meetings/pc/ws-aper-01/official/ws-aper-01-report-es.pdf>.

¹² <http://cncflora.jbrj.gov.br/portal/pt-br/livro>.

Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

25. Plant conservation research, methodologies and practical techniques are fundamental to the conservation of plant diversity. While many methodologies have been developed and much relevant information generated over the past few decades, much of this lies in unpublished reports and manuscripts, not easily accessible to plant conservation practitioners.

26. In response to paragraph 10 (b) of decision X/17, an online toolkit has been developed and is available in all six United Nations languages.¹³ This provides a platform for sharing information, methodologies and experiences developed by GPPC members and others. A wide range of tools and resources are directly accessible via the toolkit.

27. A range of other tools and resources and case studies are being developed by plant conservation practitioners around the world but greater efforts are still needed to make these available in appropriate formats where they are needed.

28. This is a cross-cutting target, applicable to all other GSPC targets. It is likely that progress will be varied across targets, with some aspects of the GSPC more likely to be constrained by lack of progress in target 3 than others.

Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

29. This target focuses on conservation of plant species through the conservation and/or restoration of the landscapes, or ecological regions, in which they exist. This target is achieved mainly by actions taken to implement Aichi Biodiversity Targets 5, 11 and 15.

30. Currently 55 per cent of terrestrial ecosystems have at least 10 per cent of their surface protected and 7 per cent have over 75 per cent protected area coverage. However, 7 per cent of terrestrial ecosystems have less than 1 per cent protected.

31. While it is difficult for botanists and conservationists to achieve the GSPC's ecosystem targets, especially targets 4 and 6, there are areas, particularly related to the restoration part of this target, where botanical and horticultural expertise is particularly relevant.

32. The establishment of the Ecological Restoration Alliance of Botanic Gardens has brought together a number of partners to share experiences and raise awareness of the role of botanic gardens in supporting ecological restoration. The Alliance focuses on the use of native species in restoration and draws on the horticultural and propagation skills of botanic gardens.

33. A number of GPPC members are also contributing to this target through the provision of high quality, genetically appropriate seeds and seedlings of native species for use in restoration projects.

34. It is considered that although progress is being made towards this target, it may not be achieved by 2020 unless additional efforts are made to enhance implementation.

Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

35. An important plant area can be defined as a site exhibiting exceptional botanical richness and/or supporting an outstanding assemblage of rare, threatened and/or endemic plant species and/or vegetation

¹³ www.plants2020.net.

of high botanical value. While relatively little information is available to assess global progress towards this target, a number of national and regional initiatives are ongoing.

36. Plantlife International has been instrumental in developing guidelines to support the identification of important plant area (IPAs)¹⁴ and continues to be active in a number of countries. An online database of IPA sites and projects is available on Plantlife International's website.¹⁵

37. The International Union for Conservation of Nature (IUCN) is developing a global standard to identify areas of particular importance for biodiversity, the Key Biodiversity Areas (KBAs).¹⁶ Such areas should be a priority when expanding protected areas coverage, as it is recognized that current protected area systems have many gaps.

38. While a number of countries have made significant efforts to identify important areas for plant diversity, it is not clear how many of these are being effectively managed or how well these are distributed across ecological regions. It is considered unlikely that this target is on track to be achieved by 2020 unless efforts are enhanced to meet the target.

Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

39. Land in production covers around one third of the Earth's land surface. Increasingly, sustainable production methods are being applied in agriculture, including organic production, integrated pest management, conservation agriculture and on-farm management of plant genetic resources. Similarly, sustainable forest management practices are being widely applied. However, there are questions concerning the extent to which plant conservation specifications are incorporated into such schemes.

40. The implementation of this target is closely linked to the implementation of Aichi Biodiversity Target 7 and the work of the Food and Agriculture Organization of the United Nations.

41. On the whole, plant conservation practitioners are not directly involved in the implementation of this target and lack of cross-sectoral linkages between agricultural, forestry and environmental agencies makes measuring progress towards this target challenging.

Target 7: At least 75 per cent of known threatened plant species conserved in situ

42. *In situ* conservation is generally considered to be the primary approach for conservation as it ensures that species are maintained in their natural environments, allowing evolutionary processes to continue. Moreover, for some species, which are dependent on complex relationships with other species for their survival (specialized pollinators, soil bacteria etc.), it may be the only feasible conservation method.

43. The exact number of globally threatened plants in the world remains to be determined through the achievement of Target 2. Current estimates from the Sampled Red List Index for plants suggest that more than 20 per cent of plants are threatened with extinction, but noting that 33 per cent of plants are so poorly known that we still do not know whether or not they are threatened.

44. At this stage, therefore, global progress towards this target remains difficult to measure. However, much more information is available at the national level. The approach taken by South Africa provides an interesting case study of how a megadiverse country can address this target and expect to

¹⁴ http://www.plantlife.org.uk/international/wild_plants/IPA/ipa_criteria_and_methodology/.

¹⁵ <http://www.plantlifeipa.org/reports.asp>.

¹⁶ http://www.iucn.org/knowledge/focus/ipbes_focus/key_biodiversity_areas/.

achieve it by 2020. However, as with other targets, activities also take place internationally and involve partnerships across institutions and countries.

45. Despite encouraging progress in some countries, overall the continuing loss of natural habitat means that the *in situ* conservation status of many species is getting worse. Some countries therefore place particular attention to conserving small sites in which rare, endemic and/or charismatic plant species are found. However, it should be noted that even species that occur within protected areas are not always effectively conserved as they may be affected by factors such as invasive species, climate change and unregulated harvesting.

46. On the basis of the available evidence, we are currently not on track to achieve this target by 2020 and it would be important to step up the efforts to ensure the conservation of threatened species in line with Article 8 of the Convention and as a contribution towards the achievement of Aichi Biodiversity Target 12 focusing on the prevention of species extinction.

Target 8: At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

47. Botanic gardens are the main institutions involved in the *ex situ* conservation of wild plant diversity and many have adopted quantitative targets based on target 8, either at an individual institutional level or as a national network target. The number of botanic gardens in existence around the world has more than doubled in recent years and their combined plant collections consist of more than 170,000 species, well over one third of all known plants, including many threatened species.¹⁷ A recent internal assessment by Botanic Gardens Conservation International (BGCI) has identified over 10,000 globally threatened species in botanic garden collections. Of these, nearly 3,000 are included on the 2013 IUCN Red List. As with target 7, lack of information on which species are globally threatened (target 2) constrains accurate global monitoring.

48. National and regional assessments can provide a more accurate assessment of progress, with 39 per cent of threatened species in the United States of America and 56 per cent in Australia and New Zealand being recorded in *ex situ* collections.^{18,19}

49. While the focus of conservation work by botanic gardens in the past has been through their living collections, there is increasing recognition that such collections do not include sufficient intraspecific genetic diversity. A growing number of botanic gardens are now establishing seed banks, with the Millennium Seed Bank of the Royal Botanic Gardens, Kew, playing a key role in this respect. According to BGCI's GardenSearch database,²⁰ 275 botanic gardens in 66 countries now record having a seed bank.

50. Although significant progress is being made towards this target, and it is likely that the first part of the target (*ex situ* collections) has already been achieved by some countries, it remains challenging for megadiverse countries. While seed banking can be readily applied for many species, not all species can be conserved in this way and alternative long-term conservation methods are required. Progress towards the second part of the target (recovery and restoration) also remains challenging. However, there is an increasing emphasis on the use of *ex situ* collections for restoration activities, both at species and ecosystem levels. The achievement of this target has an impact on the achievement of Aichi Biodiversity Target 12 (preventing species extinction).

¹⁷ http://www.bgci.org/plant_search.php.

¹⁸ <http://www.bgci.org/usa/naca2010report/>.

¹⁹ <http://www.bgci.org/usa/bganz2013/>.

²⁰ http://www.bgci.org/garden_search.php.

Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

51. The diversity of local crops and their wild relatives plays a significant role in the livelihoods of many farming communities, in particular for indigenous and local communities farming for subsistence.

52. At the global level, the Global Crop Diversity Trust has been established to ensure the conservation of crop diversity for food security worldwide. It works within the framework of the International Treaty on Plant Genetic Resources for Food and Agriculture, which is the key global instrument for the conservation of genetic diversity for food and agriculture.

53. This target is also closely linked to the Global Plan of Action for Plant Genetic Resources for Food and Agriculture of the Commission on Genetic Resources for Food and Agriculture of the Food and Agriculture Organization of the United Nations (FAO). In July 2011, the 13th regular session of the FAO Commission on Plant Genetic Resources for Food and Agriculture adopted the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (PGRFA).

54. In 2010, FAO launched the Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture, providing a comprehensive overview of recent trends in PGRFA conservation and use around the world. It was based on information gathered from more than 100 countries, as well as from regional and international research and support organizations and academic programmes. This report noted that although there has been progress in securing PGRFA diversity in a larger number of international and national gene banks, much of the diversity, particularly of crop wild relatives and underused species relevant for food and agriculture, still needs to be secured for present and future use.

55. The second part of this target is implemented through the implementation of Aichi Biodiversity Target 18 on traditional knowledge.

56. GSPC target 9 has probably already been met for the major crops that are important globally. However, the challenge is to also meet it for the many thousands of other species that are of socio-economic importance at the national or local level.

Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

57. Alien species that become invasive are considered to be a main direct driver of biodiversity loss across the globe. In addition, alien species have been estimated to cost our economies hundreds of billions of dollars each year.

58. The removal of invasive alien species is a key management activity for effective conservation. However, experience has shown that preventing new invasions of harmful species is more cost-effective than waiting until they have become a threat. However, increasing global trade and the multiple pathways of introduction represent a major challenge to preventing new invasions. Applying preventative measures requires action at both international and national levels including the coordination of agencies working in the areas of plant health, transport, trade, tourism, protected areas, wildlife management and water supply.

59. Activities related to this target are ongoing, both with respect to preventing new invasions and in managing areas already affected, but the evidence suggests that progress is currently insufficient to meet the target and additional efforts are required.

60. Implementation of this target is closely linked to Aichi Biodiversity Target 9 (invasive alien species prevented and controlled).

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

61. This target is unique in the context of GSPC in that its implementation, monitoring and review are through linkages with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), particularly its Plants Committee. The target is consistent with the main purpose of CITES, which states in its Strategic Plan agreed in 2001 “No species of wild flora subject to unsustainable exploitation because of international trade.”

62. At the sixteenth meeting of the Conference of the Parties to CITES, a resolution on cooperation with GSPC was adopted.²¹ This resolution invited Parties to promote and enhance collaboration between their GSPC focal point(s) and their CITES Authorities, through the involvement of CITES authorities in the development and implementation of the GSPC national strategies, particularly activities related to CITES-listed species; and the inclusion of CITES-GSPC-related activities in CBD national reports.

63. CITES and GSPC can share tools, scientific results and methodologies relating to target 11, but that may also have relevance to other GSPC targets such as those on taxonomy (target 1), conservation assessments (target 2) and capacity-building (target 15). Intensified communication between national CITES authorities and GSPC focal points and technical agencies and institutions would be an essential cornerstone for implementing joint collaborations of mutual benefit.

64. The implementation of this target is linked to Aichi Biodiversity Target 4, on sustainable production and consumption, and Aichi Biodiversity Target 12, on preventing the extinction of known threatened species.

Target 12: All wild harvested plant-based products sourced sustainably

65. Wild plants provide a wide range of products, including food, fuel, fibre, timber, medicines, dyes and cosmetics, among others. A very large number of wild plant species are used by humankind. For example, more than 50,000 medicinal and aromatic plants species are used globally. The demand for natural products in the food, cosmetics and medicinal market sectors especially is growing worldwide. As a result many plant species are at risk from over-collecting and habitat loss. The decline in wild plant populations has serious consequences for the livelihoods of the people these plants support.

66. A report published by the International Trade Centre in 2007 (based on 2005 data), provided a review of world production and marketing of organic wild collected products, but no subsequent survey has been carried out to measure progress since then. At that time, a total of 62 million hectares were registered for organic wild collection and 979 organic wild collection projects were identified. A total of 440 different organic products from 71 countries were reported. The majority of countries (80 per cent) were developing or emerging economies. It was also noted in the report that although organic management systems are strongly linked to environmental benefits, including safeguarding biodiversity and preventing soil erosion and water contamination, the standard alone does not guarantee sustainable management of natural resources—a key focus of target 12.

67. In response to this gap, the FairWild Standard was developed by TRAFFIC, WWF, IUCN and other partners, managed by the FairWild Foundation.²² The standard combines the requirements of ecological sustainability of wild harvesting and social sustainability of trade, including the fair sharing of benefits throughout the supply chain. Version 2.0 of the FairWild Standard became available in 2010 and was recognized as the best practice tool for the delivery of GSPC target 12.

²¹ <http://www.cites.org/eng/res/16/16-05.php>.

²² <http://www.fairwild.org/standard>.

68. Previously, the lack of baseline data made measuring progress towards this target difficult, with information from industry (of foremost importance to target 12 implementation) often disconnected from government agencies reporting on GSPC implementation. The introduction of the FairWild Standard now provides an important tool to measure progress. By the end of 2013, 12 companies that are directly involved in wild-sourcing of medicinal and aromatic plants were FairWild certified.

69. On the basis of presently available information, it seems unlikely that the target would be met globally unless significant additional efforts are made. However there are a number of interesting initiatives taking place at the national level, involving both the public and private sectors. Implementation of this target contributes to Aichi Biodiversity Target 4 on sustainable production and consumption.

Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

70. The preservation, protection and promotion of the traditional knowledge, innovations and practices of local and indigenous communities is of key importance as a basis of sustainable customary use. The rich endowment of traditional knowledge and biodiversity plays a critical role in health care, food security, culture, religion, identity, environment, sustainable development and trade.

71. There is today a growing appreciation of the value of traditional knowledge. This knowledge is valuable not only to those who depend on it in their daily lives, but to modern industry and agriculture as well. Many widely used products, such as plant-based medicines and cosmetics, are derived from traditional knowledge. Other valuable products based on traditional knowledge include agricultural and non-wood forest products as well as handicrafts.

72. Although a wide range of initiatives to record, conserve and revive traditional knowledge exist at national and local levels, progress towards this target is difficult to measure as baselines have not been quantified. In many ways, target 13 is an enabling target, supporting the achievement of other targets.

73. Implementation of this target is closely linked to Aichi Biodiversity Target 18 (traditional knowledge respected).

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

74. Plants are often underrepresented in the conservation debate and neglected in efforts to engage the public in environmental action. Furthermore, increasing urbanization and population movements are resulting in a growing disconnect between people and nature, a trend that is especially notable among the young. Plant conservation targets will only be achieved if changes are made at all levels of society, from policymakers through to the general public. For this reason, communication, education and public awareness programmes are essential in underpinning GSPC.

75. The world's botanic gardens, which together receive an estimated 250 million visitors per year, are a gateway to information on plant diversity. Almost all botanic gardens provide education programmes and many focus specifically on educating children. The continuous public-awareness opportunities offered by botanic gardens are an important complement to such specific education programmes, but there are no global statistics on how many people are reached through these activities.

76. In recent years, there has been a spectacular growth of new botanic gardens that have a strong focus on public education. A striking example is provided by the Gardens by the Bay in Singapore which

won the building of the year award in 2012 and attracts over 2.5 million visitors every year, representing an impressive commitment by the Government of Singapore to raising awareness about plants.²³

77. It is also recognized that engaging the public in new and innovative ways is key to raising awareness of plant conservation issues. One example is the increasing popularity of citizen-science projects focused around plant monitoring. Examples of such programmes include Project BudBurst in the USA,²⁴ Vigie-Nature in France²⁵ and the Phenology Recording System of the New Zealand Plant Conservation Network.²⁶

78. Although some of these initiatives are reaching large numbers of people, there is still little evidence that this is having any policy impact with implications for plant conservation. There is also a worrying lack of plant science being taught through the formal education system in schools and universities (see also GSPC target 15).

79. Implementation of GSPC target 14 makes an important contribution to Aichi Biodiversity Target 1 (awareness increased) and in the framework of the GSPC is considered cross-cutting and applicable to all other targets.

Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

80. The scope of the GSPC goes beyond traditional plant conservation activities to include sustainable use, as well as working with indigenous and local communities. The achievement of the 16 targets will require considerable capacity-building, particularly to address the need for conservation practitioners trained in a range of disciplines. Such capacities are also important to address current and future grand challenges and issues facing society, including climate-change mitigation, food security, land management and habitat restoration.

81. A recent study carried out by BGCI U.S. and partners in the United States of America showed that government agencies are losing botanical capacity as staff botanists retire and positions are not refilled, either because positions are eliminated, replaced by individuals without equivalent botanical training, or because there is an inability to find appropriately qualified new candidates to fill them. Botanical education and training likewise appears to be on the decline, with many botany departments at universities being subsumed into more general or interdisciplinary departments, and subsequently losing resident expertise as professors retire and are replaced by individuals without botanical expertise.

82. For example the study revealed that in 1988, 72 per cent of the nation's top 50 most funded universities offered advanced degree programmes in botany. Today, more than half of these universities have eliminated their botany programmes and many, if not all, related courses. Similarly, botany degrees are no longer offered in the United Kingdom.

83. Recognizing the widening gaps in capacity, organizations in the private sector (e.g., botanic gardens and other non-profit conservation organizations, as well as for-profit businesses and self-employed individuals) are stepping in, providing botanical training, expertise and infrastructure where it otherwise would not exist.

²³ <http://www.gardensbythebay.com.sg/en/home.html>.

²⁴ <http://www.budburst.org/>.

²⁵ <http://vigienature.mnhn.fr/>.

²⁶ http://www.nzpcn.org.nz/page.aspx?flora_phenology.

84. Progress towards GSPC target 15 is considered key for the successful implementation of GSPC. However, available information suggests that progress is not only insufficient to meet the target, but that capacity-building opportunities are actually declining in some areas/countries. If this is the case, this will have a significant impact on the ability of Parties to meet their commitments on biodiversity conservation, and especially to meet Aichi Biodiversity Target 19 (knowledge improved, shared and applied).

Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

85. Networks supporting plant conservation activities provide the means to share experiences, exchange data, encourage professional development and build the capacity of the plant conservation community.

86. At the global level, the establishment of the Global Partnership for Plant Conservation (GPPC) has made a good start at bringing together the plant conservation community;²⁷ however, greater efforts are needed to engage other sectors, such as agriculture, industry, education, forestry, indigenous and local communities etc. This indicates significant challenges for science communicators.

87. At the national level, there is still a lack of cross-sectoral networks, with limited institutional integration and a lack of mainstreaming of plant conservation work. However, where national responses to the GSPC have been developed, this has helped provide a focus for networking among the stakeholders.

88. Most GPPC members are involved in a range of national and/or international networks, many of which have a thematic base. However, some partners have particular geographic partnerships, which may be long-term and cover a number of thematic areas.

89. This target is cross-cutting and applies to all GSPC targets.

IV. CONCLUSIONS

90. The assessment of progress in achieving of the targets of the Global Strategy for Plant Conservation draws on information from the following sources: (i) commitments, targets and planned actions contained in 23 national/regional biodiversity strategies and action plans updated since 2011 and two national plant conservation strategies; (ii) information, case studies and progress assessments from the series of regional workshops on the Global Strategy for Plant Conservation held since 2011; (iii) information provided by Parties in their fifth national reports; and (vi) additional information and examples of activities provided by members of the Global Partnership for Plant Conservation.

91. All targets of the Global Strategy for Plant Conservation have corresponding Aichi Biodiversity Targets and both implementation and monitoring of the Global Strategy for Plant Conservation is therefore being pursued as part of the broader framework of the Strategic Plan for Biodiversity 2011-2020 as agreed in decision X/17.

92. A number of the targets of the Global Strategy for Plant Conservation are beyond the scope of the immediate plant conservation community, requiring the involvement of other stakeholders, dedicated institutions or champions. The most effective way for Parties to pursue these targets is through the implementation of the corresponding Aichi Biodiversity Targets, with plants as a subset of components of biodiversity. This particularly applies to GSPC target 6 (and the corresponding Aichi Biodiversity Target 7) on sustainable production systems; GSPC target 10 (and the corresponding Aichi Biodiversity Target 9) on invasive alien species; GSPC target 13 (and the corresponding Aichi Biodiversity Target 18) on

²⁷ <http://www.plants2020.net/gppc/>.

traditional knowledge; and GSPC target 14 (and the corresponding Aichi Biodiversity Target 1) on public awareness.

93. Implementation of other targets of the Global Strategy for Plant Conservation relies on strong proponents and resources within the plant conservation community. Engaging these partners will make a significant contribution to achieving corresponding Aichi Biodiversity Targets. These targets might therefore best be pursued by deliberately and actively engaging those dedicated stakeholders in the planning and implementation of the Aichi Biodiversity Targets. Examples include GSPC target 4 (and the corresponding aspects of Aichi Biodiversity Targets 5, 11 and 15) on conservation and restoration; GSPC target 5 (and the corresponding Aichi Biodiversity Target 11) on protecting key biodiversity areas; GSPC target 7 (and the corresponding aspects of Aichi Biodiversity Targets 11 and 12) on *in situ* conservation; GSPC target 8 (and the corresponding aspects of Aichi Biodiversity Targets 12 and 13) on *ex situ* conservation; GSPC target 9 (and the corresponding aspects of Aichi Biodiversity Targets 13 and 18) on conserving genetic resources; GSPC target 12 (and the corresponding aspects of Aichi Biodiversity Target 4) on sustainable sourcing; and GSPC target 16 (and the corresponding aspects of Aichi Biodiversity Target 17) on institutions, networks and partnerships.

94. GSPC targets 1 and 2 on floristic knowledge (also contributing to the Global Taxonomy Initiative) and assessments of conservation status are both monumental tasks whose achievement is fundamental to the implementation of the Strategy as a whole. Their achievement is dependent on the resources to undertake the task and significant efforts are underway and committed institutions are in place to pursue them. GSPC targets 3 and 15 on sharing information and research and on the availability of trained personnel respectively are equally fundamental and enabling. Parties would best support efforts on these three targets by appropriately prioritizing, supporting and resourcing related programmes and activities.

95. GSPC target 11 on flora endangered by trade is entirely aligned with the objectives and activities of the Plants Committee of the Convention on International Trade in Endangered Species of Wild Fauna and Flora and it might be useful to formally recognize the Plants Committee and national CITES authorities as the lead agencies for implementation of this target in accordance with CITES Resolution 16.5.

96. Based on the available information, only one GSPC target is currently considered to be on track (Target 1) and efforts towards this target would need to be maintained to ensure its achievement by 2020. For all other targets, while successful local or national examples exist for each target, significant additional efforts are urgently needed to be put in place if the targets are to be achieved globally. Drawing on these successful examples and case studies and on the guidance available through the GSPC toolkit would be a good starting point. By systematically drawing on competent and dedicated partners and ensuring that plant conservation objectives are mainstreamed into relevant policies, Parties and other Governments could enhance the effectiveness of the implementation of the Global Strategy for Plant Conservation and facilitate the achievement of its targets by 2020.

97. This could be achieved in part by replicating or broadening, the examples of collaborations and partnerships on the range of technical and scientific issues related to plant conservation, for example through the establishment of national plant conservation partnerships involving representatives from government, non-governmental organizations, and representatives from indigenous and local communities, with a view to promoting the consideration of plant conservation objectives in government and private sector decision-making.

98. Moreover, it would be critical to include plant conservation considerations, partners and capacities in the promotion of enhanced technical and scientific cooperation on biodiversity, and to reflect

these in the development of a “Pyeongchang Roadmap for the enhanced implementation of the Strategic Plan for Biodiversity 2011-2020 and achievement of the Aichi Biodiversity Targets”.

V. SUGGESTED RECOMMENDATIONS

The Subsidiary Body on Scientific, Technical and Technological Advice may wish to adopt a recommendation along the following lines:

A. *The Subsidiary Body on Scientific, Technical and Technological Advice:*

1. *Takes note* of the assessment undertaken of progress in implementing the Global Strategy for Plant Conservation 2011-2020;
2. *Recognizes* that the achievement of the targets of the Global Strategy for Plant Conservation requires coordinated action by a wide range of stakeholders;
3. *Acknowledges* that different approaches might be effective in helping to accelerate progress towards the targets of the Global Strategy for Plant Conservation depending on which stakeholders, dedicated institutions or champions are involved and national circumstances.

B. *The Subsidiary Body on Scientific, Technical and Technological Advice may wish to recommend that the Conference of the Parties, at its twelfth meeting, adopt a decision along the following lines:*

The Conference of the Parties

1. *Welcomes* the progress made towards the achievement of most of the targets of the Global Strategy for Plant Conservation 2011-2020 and recognizes the contribution this makes to the achievement of the corresponding Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020;
2. *Urges* Parties and invites other Governments, members of the Global Partnership for Plant Conservation and other stakeholders to enhance their efforts in implementing the Global Strategy for Plant Conservation, in particular:
 - (a) *For those targets of the Global Strategy for Plant Conservation where many of the key stakeholders, dedicated institutions or champions are outside the plant conservation community:* by pursuing and supporting activities identified as critical for the achievement of corresponding Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020, including those identified through the mid-term review of the Strategic Plan and the fourth edition of Global Biodiversity Outlook, as a basis for the formulation of the Pyeongchang Roadmap;
 - (b) *For those targets of the Global Strategy for Plant Conservation where progress is primarily driven by actors from within the plant conservation community:* through the provision of political, institutional and financial support as appropriate and by giving recognition to the efforts, including by presenting information from these processes in official communications and reports;
 - (c) *For those targets of the Global Strategy for Plant Conservation where progress depends on actors both within and outside the plant conservation community:* by promoting and facilitating communication, coordination and partnerships between all relevant actors.
3. *Notes* that target 11 of the Global Strategy for Plant Conservation on flora endangered by trade is entirely aligned with the objectives and activities of the Plants Committee of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and therefore encourages

Parties to recognize the Plants Committee and national CITES authorities as the lead agencies for the implementation of this target in accordance with CITES Resolution 16.5.

4. *Invites* Parties and other Governments to make further efforts to mainstream plant conservation objectives into relevant policies in order to enhance the effectiveness of implementation of the Global Strategy for Plant Conservation;

5. *Encourages* Parties other Governments to enhance their engagement with partner organizations, including members of the Global Partnership for Plant Conservation and to facilitate and support the development of national plant conservation partnerships involving a wide range of stakeholders;

6. *Encourages* Parties and *invites* other Governments to continue sharing relevant examples and case studies through the GSPC toolkit (www.plants2020.net) and to draw on the tools and guidance shared through the toolkit as appropriate in planning and implementing plant conservation activities.





Annex



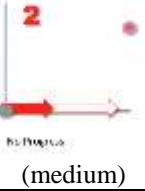


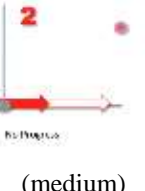
SUMMARY OF PROGRESS TOWARDS THE GSPC TARGETS

The table below provides an assessment of progress made towards each of the GSPC targets and compares this with the assessment of progress towards corresponding components of the Aichi Biodiversity Targets. It aims to provide summary information on whether or not we are on track to achieve the targets by 2020. The assessment uses a five-point scale:

- 5 - On track to exceed target, i.e., we are doing even better and expect to achieve the target before 2020;
- 4 – On track to achieve target, i.e., if we continue our efforts we expect to achieve the target by 2020;
- 3 - Progress towards target but at an insufficient rate, i.e., unless we step up our efforts we will have missed the target in 2020;
- 2 - No significant change, i.e., we are neither moving towards the target nor away from it;
- 1 - Moving away from target, i.e., things are getting worse rather than better.

This assessment is based on the information provided for the mid-term review of the GSPC, largely by GPPC members, and the level of confidence, based on the available evidence, is indicated for each target. The assessment is subject to change as additional information becomes available, including from national reports to the Convention on Biological Diversity and additional updated NBSAPs.

GSPC Target	Current status (and level of confidence for ranking)	Comments
Target 1: An online flora of all known plants	 <p>(high)</p>	The establishment of the World Flora Online Consortium is a major step towards this target. Good progress has been made at the national level in many countries, including several megadiverse countries. Concerns about declining taxonomic capacity may be one constraint to the achievement of this target.
Target 2: An assessment of the conservation status of all known plants, as far as possible, to guide conservation action	 <p>(high)</p>	In recent years there has been significant progress at the global level, with IUCN on track to achieve its target of 38,500 plants on the Red List by 2020. Initiatives are being put in place to maintain this level of activity. Progress at the national level is varied, but encouraging in some megadiverse countries.
Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared	 <p>(medium)</p>	An online toolkit has been developed and is available in all UN languages. However, much relevant “how to” information continues to lie in unpublished reports, not easily accessible to plant conservation practitioners.
Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration	 <p>(high)</p>	This target is achieved mainly by actions taken to implement Aichi Biodiversity Targets 5, 11 and 15. A greater focus on the use of native species in restoration is encouraging. The analysis on Aichi Biodiversity Target 11 notes that 55% of terrestrial ecosystems have at least 10% coverage by protected areas and 7% have at least 75%.

<p>Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity</p>	 <p>(high)</p>	<p>While a number of countries have made significant efforts to identify important areas for plant diversity, it is not clear how many of these are being effectively managed or how well these are distributed across ecological regions.</p>
<p>Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity</p>	 <p>(medium)</p>	<p>Increasingly, sustainable production methods are being applied in agriculture. Similarly, sustainable forest management practices are being more broadly applied. However, there are questions concerning the extent to which plant conservation specifications are incorporated into such schemes.</p>
<p>Target 7: At least 75 per cent of known threatened plant species conserved <i>in situ</i></p>	 <p>(medium)</p>	<p>Despite encouraging progress in some countries, overall the continuing loss of natural habitat means that the <i>in situ</i> conservation status of many species is getting worse. Furthermore, even species that occur within protected areas are not always effectively conserved as they may be affected by factors such as invasive species, climate change and unregulated harvesting.</p>
<p>Target 8: At least 75 per cent of threatened plant species in <i>ex situ</i> collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes</p>	 <p>(high)</p>	<p>At the global level, 29% of the species listed on the 2013 IUCN Red List are known to be in <i>ex situ</i> collections and higher percentages are recorded at the regional and national levels. The first part of the target (<i>ex situ</i> collections) has already been achieved by some countries, but it remains challenging for megadiverse countries. Encouraging initiatives exist on the second part.</p>
<p>Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge</p>	 <p>(low)</p>	<p>This target has probably already been met for the major crops that are important globally. However the challenge is to meet this target for the many thousands of other species that are of socio-economic importance at the national or local level.</p>
<p>Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded</p>	 <p>(medium)</p>	<p>Increasing global trade and the multiple pathways of introduction represent a major challenge to preventing new invasions. Although some encouraging activities are ongoing in managing areas already affected, the evidence suggests that additional efforts are needed to meet the target.</p>

<p>Target 11: No species of wild flora endangered by international trade</p>	<p>(High)</p>	<p>This target is implemented through the action of CITES, and a resolution on cooperation with the GSPC was adopted in 2013 by CITES COP 16. Significant progress has been made in developing guidelines for determining non-detriment findings for perennial species and these are now starting to be applied.</p>
<p>Target 12: All wild harvested plant-based products sourced sustainably</p>	<p>(low)</p>	<p>The introduction of the FairWild Standard provides a necessary tool to measure future progress towards this target. Although there are a number of interesting initiatives taking place at the national level, involving both the public and private sectors, it is unlikely that the target will be met at the global level, unless efforts are being stepped up.</p>
<p>Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care</p>	<p>(low)</p>	<p>Although a wide range of initiatives to conserve traditional knowledge have been developed at national and local levels, progress towards this target is difficult to measure as baselines have not been quantified.</p> <p>This target can be considered an “enabling” target, supporting the achievement of other targets.</p>
<p>Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes</p>	<p>(high)</p>	<p>Plants are often neglected in the conservation debate. However, progress is being made, particularly due to increasing participation in citizen science programmes, many of which are focused on plants.</p>
<p>Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy</p>	<p>(medium)</p>	<p>The broad scope of the GSPC requires considerable capacity-building across a range of disciplines. There is a worrying decline in the teaching of botany at university level and much capacity-building is being undertaken within the informal education sector.</p>
<p>Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy</p>	<p>(medium)</p>	<p>At the global level, the establishment of the Global Partnership for Plant Conservation has made a good start at bringing together the plant conservation community; however, greater efforts are needed to engage other sectors.</p>