UN environment programme

CBD

Convention on Biological Diversity

Distr.
GENERAL

CBD/SBSTTA/24/INF/20
3 February 2021

ENGLISH ONLY

SUBSIDIARY BODY ON SCIENTIFIC,
TECHNICAL AND TECHNOLOGICAL ADVICE
Twenty-fourth meeting
Venue and dates to be determined
Item 3 of the provisional agenda*

THE DEVELOPMENT OF A POST-2020 GLOBAL STRATEGY FOR PLANT CONSERVATION AS A COMPONENT OF THE GLOBAL BIODIVERSITY FRAMEWORK

Note by the Executive Secretary

1. The Executive Secretary circulates herewith, for the information of participants in the twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, an information document on the development of a post-2020 global strategy for plant conservation as a component of the post-2020 global biodiversity framework. The document has been prepared by the Global Partnership for Plant Conservation in response to the updated zero draft of the post-2020 global biodiversity framework (CBD/POST2020/PREP/2/1). It includes, in the annex, a draft post-2020 global strategy for plant conservation, with suggested plant conservation objectives for 2050, and plant conservation targets for 2030.

2. The document is provided in the form and language in which it was received by the Secretariat.

* CBD/SBSTTA/24/1

THE DEVELOPMENT OF A POST-2020 GLOBAL STRATEGY FOR PLANT CONSERVATION AS A COMPONENT OF THE GLOBAL BIODIVERSITY FRAMEWORK

I. Background

1. The Global Strategy for Plant Conservation (GSPC), with its 16 outcome-oriented targets was first adopted by the Parties to the CBD in 2002. The GSPC targets thus became the first biodiversity targets adopted by the international community and provided a model and pilot in target-setting for the CBD. In agreeing to the development of a specific strategy for plant conservation in the framework of the CBD, Parties acknowledged and recognised the special importance of plants as the basis of all life on earth and in providing the building blocks of all terrestrial ecosystems.

2. In 2010, with the adoption of the Aichi Targets, the GSPC targets were updated and renewed, with a decision that implementation of the GSPC should be pursued as part of the broader framework of the Strategic Plan for Biodiversity 2011-2020.

II. Achievements to date

3. The development of the strategy followed a broad-based stakeholder approach involving CBD Parties and many representatives of the botanical and conservation communities. In bringing together the wider stakeholder community, the GSPC has helped to broaden the base of plant conservation activities worldwide and has built consensus around the key issues and priorities. The targets have provided clear, stable, long-term goals that have been adopted at all levels and by a wide range of stakeholders.

4. Wide engagement has been a key element for successful implementation and has resulted in the development of a broad-based, multi-stakeholder, united community, committed to ensuring the conservation and sustainable use of plant diversity into the future. It has also engaged thousands of plant conservationists in the CBD process, engaging their efforts often at community levels and aligning their actions with priorities at national levels.

5. Progress made towards the GSPC targets has made a significant contribution to the achievement of many of the Aichi targets at both national and international levels. These include:

(a) **Aichi Target 1**: Raising public awareness of the importance of plant diversity (and thus all biodiversity) is covered by GSPC Target 14. This target has been widely adopted by the world's 3,000+ botanic gardens and the wider plant conservation community, with initiatives such as 'Fascination of Plants day' growing in popularity year-by-year. In 2019, over 860 events were held in 48 countries around the world. The world's botanic gardens attract some 750 million visitors each year and they have a common goal in engaging the public in new and innovative ways, building an appreciation of nature amongst children, and implementing a wide range of citizen-science projects. In 2020, during the pandemic, virtual events and other programmes related to plants, presented by a wide variety of organisations, have collectively attracted audiences of over 100 million people. Many exhibitions, events and education programmes organised by botanic gardens focus not only on plant diversity, but also highlight the inter-relationship with other components of biodiversity – pollinators, soil organisms etc. and through these programmes reach a wide cross-section of society.

(b) **Aichi Target 4:** Sustainable production and consumption are addressed through GSPC Targets 6, 11 and 12, with 11 and 12 having a particular focus on local and international trade and sustainable harvesting. The FairWild Standard, which is explicitly linked to the implementation of GSPC Target 12, provides a valuable tool to measure progress towards the sustainable use of plant diversity, and is being used by a growing number of companies for products sourced in countries around the world. Implementation, monitoring and review of Target 11 (international trade) of the GSPC is through linkages with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) under its Plants Committee. This represents an important area of cooperation between the CBD and CITES, recognised through CITES Resolution Conference 16.5.

(c) **Aichi Target 11:** GSPC Target 5 calls for the conservation of areas important for plant diversity and as such, contributes directly to Aichi Target 5 and work on the conservation of Key Biodiversity Areas (KBAs). Plantlife International has been instrumental in developing Guidelines to support the identification of IPAs and maintains an on-line database of IPA sites and projects. (https://www.plantlife.org.uk/international/important-plant-areas-international). IPAs have now been identified across large sections of Europe, Africa and the Middle East with 1,994 IPAs in 27 countries identified and documented to date. In many more countries a variety of other processes and initiatives have been developed to identify important areas for plants too, helping in the achievement of GSPC Target 5. In some countries, IPA networks have been integrated into national conservation planning and monitoring schemes. For example, in Belarus all IPAs are now protected by law, in Romania, IPAs have led to the recognition and protection of new critical habitats, whilst in Croatia many IPAs were included in the expanded protected area network under the Natura 2000 scheme as part of their accession to the European Union in 2013. Botanical distribution and threat data are also being used to help identify and designate Key Biodiversity Areas (KBAs), via the KBA Secretariat and through national KBA Co-ordinating Committees.

(d) **Aichi Target 12:** The GSPC's clear, measurable targets on species conservation (Targets 7 and 8) and the availability of new information and tools, as well as the sharing of experiences has helped many countries to make good progress in conserving threatened plants through both in situ, ex situ and integrated approaches. Increased focus on Red Listing (especially through the Global Tree Assessment) has helped to identify species most at risk of extinction and therefore allowed conservation action to be focused where most needed. The botanical community (and most notably, botanic gardens) has widely adopted GSPC Target 8 (ex situ conservation) and has made excellent progress in conserving threatened species through both seed banking and living plant collections. Mechanisms and indicators to track progress have been put in place and gaps where future efforts are required have been identified.

(e) **Aichi Target 13:** GSPC Target 9 is closely linked to Aichi Target 13 and provides a point of contact between work carried out in the framework of FAO and the Global Plan of Action for Plant Genetic Resources for Food and Agriculture and the work of the CBD. While crop diversity is well represented in crop genebanks, crop wild relatives (CWRs) and other socio-economically important species are significantly under-represented. In this respect botanic gardens and other plant conservation organisations are playing an important role. Over the past decade the Crop Trust has collaborated with the botanic garden community on the $50 million Adapting Agriculture to Climate Change project, and has secured thousands of CWR collections in seed banks and made them available to crop breeders.

(f) **Aichi Target 15:** At the habitat-level much research has been carried out by the plant conservation community on the scientific basis for achieving long-term sustainable ecological restoration. An increasing number of restoration programmes are now incorporating a mix of appropriate native species, including locally threatened species, in their planting regimes. The Ecological Restoration Alliance of Botanic Gardens now comprises 43 partner institutions from 21 countries. Collectively the Alliance maintains >50 highly diverse long term restoration sites and continues to grow membership and new projects.

(g) **Aichi Target 19:** GSPC targets 1 and 2 focus on understanding and documenting plant diversity and the impressive progress made towards these two targets makes a significant contribution to Aichi Target 19. For example, the establishment of the World Flora Online Consortium, bringing together over 40 institutions to prepare a World Flora on-line (Target 1) which is now available as an open-access, web-based compendium of the world's flora (www.worldfloraonline.org). Similarly, the Global Tree Assessment, launched in response to GSPC Target 2, is making a major contribution to the IUCN Red List, with over 40,000 assessments for tree species published in the past 5 years.

A comprehensive review of progress made towards the achievement of the GSPC objectives and targets is provided in the Plant Conservation Report 2020, (CBD Technical Series No. 95) https://www.cbd.int/gbo5/plant-conservation-report-2020 .

III. Benefits of a continuing GSPC

a. National action

6. A number of countries, including some of the world's most biodiverse countries, have developed national plant conservation strategies / responses which align with the GSPC. These include Brazil, China, Colombia, Indonesia, Mexico, Philippines and others. Between them these countries include over 50% of the world's plant diversity. European countries also adopted a European Plant Conservation Strategy (through Planta Europa), with 16 targets aligned to the GSPC. A progress report for that is due in January 2021. The development of such strategies has been shown to provide an important mechanism to bring together the wide range of stakeholders involved in plant conservation at the national level. In the case of some countries, (e.g. Mexico and China), national plant conservation strategies and targets extend beyond 2020. A continued GSPC would provide an essential 'home' for these strategies, linking them at the international level and promoting a continued focus on plants in national biodiversity strategies. The GSPC has also acted as an important stimulus and framework for numerous botanical and conservation organisations and institutions acting at national levels to achieve the GSPC targets. The adoption of a post-2020 GSPC would support their continuing efforts and commitment.

b. Maintaining momentum

7. Significant progress has been made up to 2020 on the achievement of the objectives and targets of the 2020. Not least due to its success in mobilising the plant conservation and botanical community at local, national and international levels. However much remains to be done. There is grave concern that without a continued specific focus on plant conservation in the post-2020 period, much vital plant diversity will be lost. A continued GSPC, with specific targets for plant conservation will ensure that the momentum achieved to date, can be sustained over the coming decade.

IV. Contributing to the post-2020 biodiversity framework

8. The GSPC 2020 targets were imperfectly aligned with the Aichi targets, and for this reason, implementation and reporting on progress towards the GSPC targets was, in some countries seen as separate to implementation and reporting via NBSAPs. It is therefore proposed that a post-2020 GSPC will be clearly nested within the post-2020 biodiversity framework, with plant conservation targets clearly identifiable as sub-targets or milestones towards the biodiversity targets. Having specific plant conservation targets, which could be adopted by the plant conservation community and others, would bring a wealth of expertise, data and resources into efforts to implement the biodiversity agenda. Specific areas of focus for a post-2020 GSPC include the following:

(a) **Quality information:** Building on the excellent progress that has been made to date in documenting and recording plant diversity and the threats that plant species face, having specific targets related to plants would ensure continuation of work on the World Flora Online and support initiatives in plant red listing. This would contribute to proposed **Target 19**.

(b) **Species conservation and maintenance of genetic diversity:** Specific targets for the conservation of threatened species in the existing GSPC have been widely adopted across the plant conservation community, being used at national, local and institutional levels to guide and prioritise conservation planning and action. Continued targets for conservation of plant species and genetic diversity within species are being widely called for by the plant community and would make a major contribution to the proposed **Goal A** and associated targets.

(c) **Restoration:** A large number of conservation programmes are now focusing on how to restore threatened plants and animal species in their native habitats. Many such programmes are run by, or in association with, botanic gardens where complementary horticultural skills are invaluable in supporting successful habitat restoration. Specific targets to encourage the use of native and threatened species in large-scale restoration projects, and in carbon sequestration reforestation efforts, would link these ongoing initiatives with the broader biodiversity agenda and make important contributions to restoration and biodiversity conservation targets.

(d) **Sustainable use:** A very large number of wild plant species are used by humankind. Of the roughly 30,000 plant species with documented medicinal or aromatic uses, approximately 3,000 are found in international trade, an estimated 60–90% of them harvested from the wild. People living in poverty and many rural communities in developing countries are particularly reliant on products derived from plants harvested from the wild, both for direct use and on the income provided by selling the plants they collect. A continued focus on the sustainable use of plants, and the increase in use of standards (such as FairWild), will contribute both to reducing pressure on wild plant populations as well addressing many pressing livelihood issues.

(e) **Urban greening:** Specific targets on urban greening were not part of the 2010-2020 GSPC. However, the inclusion of such targets in the post-2020 period will ensure the involvement of those responsible for managing plant diversity in urban settings. Botanical expertise is already proving invaluable in the identification of appropriate tree species for use in urban setting under future climate change scenarios, and in urban-based ecological restoration – and such expertise needs to be mobilized in support of the broader biodiversity agenda.

(f) **Public awareness:** Botanic gardens have widely adopted the GSPC at both institutional and national levels. Such organisations receive upwards of 750 million visitors annually and play an important role in public awareness of the importance of plants and of biodiversity more broadly. A post-2020 GSPC will ensure that these institutions continue to remain engaged and contribute to the post-2020 biodiversity agenda.

V. Process in the development of the post-2020 Global Strategy for Plant Conservation

9. In 2004, a Global Partnership for Plant Conservation (GPPC) was created to support the worldwide implementation of the Global Strategy for Plant Conservation and assist Parties in achieving the GSPC targets. It currently includes 63 organisations and institutions as members. Following a conference of the GPPC held in Cape Town, South Africa in August 2018, a Liaison Group meeting was convened by SCBD in Cape Town, including representatives of the CBD parties and GPPC members. The Liaison Group was invited to review the progress achieved in implementing the GSPC and requested the GPPC to prepare information on 'options for integrating plant conservation into the post-2020 global biodiversity framework'. Following the meeting, the GPPC prepared a possible first draft of plant conservation objectives, including targets, for the period 2021 to 2030. It was suggested that as far as possible these should be SMART targets.

10. These draft post-2020 plant conservation targets were subsequently reviewed by the members of the GPPC and other experts as part of a broad international stakeholder consultation conducted during 2019. The edits, comments and suggestions made to that draft were then incorporated and are included in this document. A series of draft technical rationales and an explanations of terms used for each of the targets proposed were also prepared.

Annex 1

Draft Post-2020 Global Strategy for Plant Conservation, with suggested Plant Conservation Objectives for 2050, and Plant Conservation Targets for 2030

Objectives for 2050

1. All plant species and areas important for plant diversity are understood, documented and effectively conserved.
2. Degraded ecosystems are being restored with [XX %] using appropriate native plant species to be resilient, biodiverse and to provide ecosystem services by 2030, and [XX %] by 2050.
3. All known threatened wild plant species are effectively conserved and managed in situ and ex situ, including viable populations.
4. All [threatened] plant species extinctions are prevented.
5. All socio-economically important plant species, including crop wild relatives, are effectively conserved and managed in situ and ex situ.
6. The diversity / number of plant species and varieties used to support human nutrition, health and well-being is maintained by 2030, and increased by [XX %] by 2050.
7. All countries have sufficient capacity, expertise and knowledge, and appropriate policies and actions in place to facilitate efficient and effective conservation, research and sustainable use of plant diversity.
8. The value of plant diversity to sustaining life on the planet and for human wellbeing and livelihoods is universally recognised by the world's people, including, the ecosystem services they provide and the steps that can be taken to conserve and use plants sustainably.

Preliminary draft global strategy for plant conservation - 2030 targets

Global Biodiversity Framework – draft targets for 2030	**Global Strategy for Plant Conservation – draft targets for 2030 (i.e. Subtargets of the GBF)**	**Potential indicators for the Plant Conservation Targets**	**Rationale for the Plant Conservation targets and indicators**
Target 1. By 2030, [50%] of land and sea areas globally are under spatial planning addressing land/sea use change, retaining most of the existing intact and wilderness areas, and allow to restore [X%] of degraded freshwater, marine and terrestrial natural ecosystems and connectivity among them.	1a: By 2030, [50%] of land important for the conservation of plant species diversity is included in spatial planning for its conservation and restoration. 1b: By 2030, at least [XX] % of degraded ecosystems are being restored using native [indigenous] plant species, including species of conservation concern, to be resilient, biodiverse and to provide ecosystem services.	Proportion of degraded ecosystems being restored using appropriate native plant species including species of conservation concern. Numbers of ecosystem restoration strategies and projects and proportion of areas of land under native plant restoration regimes. Number of native plant species available to support ecosystem restoration projects.	1b: This plant conservation element places native species and biodiversity at the centre of ecological restoration efforts. Planting schemes solely [or primarily] to achieve carbon sequestration and for commercial forestry can have detrimental impacts on biodiversity, especially where they involve exotic monocultures which displace native species and create low-value landscapes for biodiversity. Ecosystem services can be defined as including carbon sequestration, climate change adaptation and mitigation and other services. Biodiverse ecosystems are generally more resilient against potential damage or degradation.
Target 2. By 2030, protect and conserve through well connected and effective system of protected areas and other effective area-based conservation measures at least 30%	2: By 2030, at least [XX] % of important plant areas are adequately protected for plant conservation.	Inventory of Important Plant Areas (IPAs), the plant species they contain and their conservation status.	

of the planet with the focus on areas particularly important for biodiversity.			
Target 3. By 2030, ensure active management actions to enable wild species of fauna and flora recovery and conservation, and reduce human-wildlife conflict by [X%].	3: By 2030, all / XX % of known threatened wild plant species are effectively conserved and managed in situ and ex situ, to include genetically diverse and viable populations	Change in the number of plants threatened with extinction. Change in the number / % of known threatened wild plant species with genetically diverse viable populations that are effectively conserved and managed in situ and ex situ. Proportion of threatened plants effectively protected. Proportion of threatened plant species for which recovery plans have been developed [or are being implemented]. Proportion of known threatened wild plant species that are effectively conserved, through integrated (in situ and ex situ) conservation management, including genetically diverse populations. Proportion of critically endangered plant species that have been included in conservation-focused spatial planning.	3: The wording for 2050 Goal 1 proposed by IUCN-SSC is as follows: 'Net species extinction risk stabilised by 2030, extinctions halted from 2020, and average population abundance of native species increased by 20% by 2030 and 60% by 2050.' Effectively 'conserved and managed in situ and ex situ' implies that, where appropriate, species shall have species recovery programmes being implemented and that the conservation of their genetic diversity is being assured or being addressed. Such effective management and conservation of viable plant populations will often be achieved by the integration of in situ, ex situ and other conservation approaches, applied at all relevant geographic scales. While in situ conservation, defined as the conservation of species in their natural habitat, is considered to be the primary approach for conservation as it allows evolutionary processes to continue, when the risk of extinction of plants is high in situ, alternative conservation measures (inter situ, quasi in situ, near situ, introduction ex nihilo) may be adopted. More specifically, such approaches would address the loss of genetic diversity in a population by introducing new genotypes, or would be required in the case of the definitive destruction of the natural habitat, or when the habitat is not subject to an effective protection measure. Ex situ conservation is defined as the conservation of plant diversity outside its natural habitat. It plays a valuable and often essential complementary role to in situ conservation by providing a safety "back up" and an insurance policy against extinction in the wild. Ex situ conservation can be performed by a diversity of methods: seed conservation including freeze drying, cryopreservation, in vitro culture, living collections (such as in botanic gardens and arboreta), field genebanks. One key element is identifying the most efficient and effective (including cost-effective) methods for each species. The assumption is that effective conservation of threatened species ex situ will

		Change in the number of participatory plant conservation strategies and/or targets and action plans have commenced at all appropriate levels.	include their availability to support in situ conservation, restoration and recovery programmes and to ensure that their genetic variability is included in ex situ holdings Recovery plans may include the incorporation of species and their habitats in national level biodiversity conservation or action plans. Understanding the most efficient and effective means for ex situ conservation and criteria and needs for in situ recovery and management plans, will require extensive conservation biology research, including the development of innovative approaches, such as assisted migration, to face the global changes expected. Ex situ conservation in the country of origin will be crucial in the case of field genebanks and must rely on the participation of local stakeholders / communities. The development of networks sharing germplasm, data, expertise and common protocols is crucial for the success of conservation. Planning is an essential precursor to species conservation action and this to other actions whereby conservation assessments are completed for all known species and conservation action is underway. A species recovery plan serves as a road map for species recovery. It outlines the path and tasks required to restore and secure self-sustaining wild populations. It is generally a non-regulatory document that describes, justifies, and schedules the research and management actions necessary to support recovery of a species or multiple species. Such plans may consist of actions that are targeted towards individual plant species, populations or collections of species, and may form a component of the management plans for individual or networks of protected areas or other natural habitats. Species recovery plans may be developed by a wide range of governmental and non-governmental agencies. However, it is expected that they will be widely agreed by the relevant stakeholders responsible for or undertaking the conservation action.

			The value of developing national plant conservation strategies and or action plans has been recognised through their success in helping to define and guide the achievement of national plant conservation objectives and targets, and towards the broader implementation of the Global Strategy for Plant Conservation (2002-2020). Such strategies can also help to engage a wide range of stakeholders, both governmental and non-governmental, at national and local levels to undertake with plant conservation actions within a common shared framework. It is expected that national plant conservation strategies will include in their scope the conservation of wild plant diversity and plant genetic resources used in food, agriculture and other production systems.
Target 4. By 2030, ensure that the harvesting, trade and use of wild species of fauna and flora, is legal, at sustainable levels and safe.	4: By 2030, there has been at least a [50%] reduction in the number of plant species threatened by international trade and by unsustainable levels of harvesting	Change in the number of plant species threatened by international trade. The proportion of plants threatened by international trade with management interventions in place to promote sustainable trade. Measurements of decline in illegal trade on endangered plant species and customs seizures. Measurements of public awareness of illegal trade in endangered plant species and capacity of customs / regulatory officials. No. / % / volumes of plant-based products sold under sustainable management regimes.	4: This target is consistent with the main purpose of the CITES Strategic Plan: "No species of wild flora subject to unsustainable exploitation because of international trade". The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) provides an international framework for the protection of wild flora threatened by international trade.

Target 5. By 2030, manage, and where possible control, pathways for the introduction of invasive alien species, achieving [50%] reduction in the rate of new introductions, and control or eradicate invasive alien species to eliminate or reduce their impacts, including in at least [50%] of priority sites.	5a: By 2030, the detrimental impact of invasive species and biological invasions is addressed either by control measures or eradication in [XX] % of areas important for plant diversity 5b: By 2030, measures are in place to manage pathways to prevent new invasive species introductions and/or establishment.	Change in the number of invasive alien species and biological invasions with a detrimental impact on plant diversity that are being addressed either by control measures or eradication in areas important for plant diversity Change in the number of measures in place to manage pathways to prevent new invasive species introductions and/or establishment.	5a: This Target seeks to address biological invasions as a phenomenon and not just invasive alien species. It therefore combines both the invasion of the alien species (of plants, animals or micro-organisms) and the reactions of ecosystems or habitats into which they are introduced. This is because the species often dubbed "invasive" may not always become invasive when introduced to new localities, ecosystems or habitats. Management plans therefore need to be designed (using the ecosystem approach) to address the damage done to plant species and/or their communities and to restore ecosystem functions, goods and services. This requires that target ecosystems/habitats be defined, in this case as "areas important for plant diversity". It is noted that climate change is enhancing the spread and impact of many invasive alien species, hence future work on this target should ensure that there is adequate preparedness to effectively address biological invasions and that management plans should include options for adaptation to climate change. 5b: This Target relates to the revised Aichi Target 9 as proposed by the IUCN SSC invasive species specialist group, which is as follows: 'By 2030, 50% of invasive alien species causing significant impacts are regulated, 30% of the most significant pathways of introduction are effectively managed, and 50% of the areas most vulnerable to impacts from IAS have programmes in place that control or eradicate priority IAS, and prevent their introduction'. It is clear that in order for this target to be achieved there is a need for significant public awareness campaigns and public involvement in control and management measures.
Target 6. By 2030, reduce pollution from all sources, including reducing excess nutrients [by x%], biocides [by x%],	6: By 2030, the [multiple] anthropogenic pressures on [vulnerable] plant species and their	Change in the [multiple] anthropogenic pressures on [vulnerable] ecosystems and plant species and their ecosystems, including from pollution, excess nutrients	6: Given the ecological inertias related to climate change and ocean acidification, it is important to urgently reduce other anthropogenic pressures on vulnerable ecosystems so as to give vulnerable ecosystems and the plant species they contain time to cope with the pressures caused by climate change. This can be accomplished by addressing those pressures which are most amenable to rapid positive changes and would

plastic waste [by x%] to levels that are not harmful to biodiversity and ecosystem functions and human health.	ecosystems, including from pollution, excess nutrients from agriculture and development, are identified, understood and minimized, so as to maintain ecosystem integrity and functioning.	from agriculture and development, are understood, minimized, so as to maintain ecosystem integrity and functioning. Measurements on the number of studies and mitigation measures implemented on impacts on plants and their habitats by pollution, climate change, biocides, changes in pollinator and other anthropogenic pressures.	include activities such as reducing pollution and overexploitation and harvesting practices which have negative consequences on ecosystems and wild plant populations. Indicators for this element include the extent of biomes ecosystems and habitats, the incidence of human-induced ecosystem failure, the health and well-being of communities who depend directly on local ecosystem goods and services, and the proportion of plant products derived from sustainable sources. Impacts of pollution and biocides on plant pollination and pollinators are major threats to plant diversity and need to be addressed through the achievement of this Target.
Target 7. By 2030, increase contributions to climate change mitigation adaption and disaster risk reduction from nature-based solutions and ecosystems based approached, ensuring resilience and minimising any negative impacts on biodiversity.	7: By 2030, [XX] of the areas planted for carbon sequestration, to help mitigate climate change, are utilizing appropriate indigenous plant species.	Proportion of degraded ecosystems being restored using appropriate native plant species including species of conservation concern. Change in the percentage of degraded ecosystems that are being restored using appropriate native plant species to be resilient, biodiverse and to provide ecosystem services	7: This Target places native species and biodiversity at the centre of planting and ecological restoration efforts directed towards carbon sequestration. Planting schemes solely [or primarily] to achieve carbon sequestration and for commercial forestry can have detrimental impacts on biodiversity, especially where they involve exotic monocultures which displace native species and create low-value landscapes for biodiversity.
Target 8. By 2030, ensure benefits, including nutrition, food security, livelihoods, health and wellbeing, for people, especially for the most vulnerable through sustainable	8: By 2030, [XX] % of socio-economically important wild plant species are conserved ex situ, and viable populations are effectively conserved and managed in situ, to ensure they are	Number of plant species recovery plans have been developed for socio-economically important wild plant species, including crop wild relatives. Number/proportion of [genetically diverse] viable	8: Socio-economically important wild plants are interpreted to include Crop Wild Relatives, PGRFA, FGR and other as well as plant species that are used directly for economic and cultural purposes. This element is consistent with the second objective of the Convention on sustainable use and its long-term goal to achieve sustainable sourcing of all naturally occurring plant resources. This element can be interpreted to include wild harvested plants and the products derived from them. Plant-based products harvested from wild sources include food products, timber, wood-based products, fibre products, ornamental, medicinal and other

management of wild species of fauna and flora.	available to support nutrition, health care, food security and livelihoods.	populations of socio-economically important wild plant species, including crop wild relatives, that are effectively conserved and managed in situ and ex situ. The proportion of [known cultivars and landraces] [the genepool of crops] in use by farmers represented in seed banks. Number of plant genetic resources for food and agriculture secured in medium- or long-term conservation facilities (SDG Indicator 2.5.1a). Proportion of local breeds classified as being at risk, not at risk or at an unknown level of risk of extinction. Proportion of plant species recovery plans have been developed for socio-economically important wild plant species, including crop wild relatives.	plants for direct use. Sustainable management and harvesting aims to ensure that practices do not result in a decline in the diversity, value or supply of wild harvested plants. It is also assumed that this target includes the integration of social and environmental considerations, such as the fair and equitable sharing of benefits and the participation of indigenous and local communities along at the supply chain integrate. This element also focuses on respecting and securing the plant species and knowledge base of plant resources used to secure livelihoods, food security and health care, especially for Indigenous and Local Communities. This measure is incorporated to ensure that future generations accessing these resources can continue to benefit from their sustainable use. The target should be implemented consistent with the Convention's programme of work on Article 8(j) and related provisions. This target may, in the long run, help local and indigenous communities to adapt to emerging environmental challenges such as climate change.
Target 9. By 2030, support the productivity,	9a: By 2030, at least [XX] % of areas under agriculture, aquaculture	Change in the % of areas under agriculture, aquaculture and forestry that are managed	9a: An ultimate goal is for all production lands to be managed sustainably, without impacts on plant diversity. In the context of this element, agricultural land may be defined as "production lands" where

sustainability and resilience of biodiversity in agricultural and other managed ecosystems through conservation and sustainable use of such ecosystems, reducing productivity gaps by at least [50%].	and forestry are managed sustainably, ensuring the conservation of associated wild and crop plant diversity. 9b: By 2030, [XX] % of crop varieties, landraces, forest genetic resources, crop wild relatives (CWR) and other domesticated socio-economically and culturally valuable plant species are conserved ex situ, and viable populations are effectively managed in situ, to prevent genetic erosion and safeguard their genetic diversity .	sustainably, ensuring the conservation of associated wild and crop plant diversity. Increase in diversity of species and varieties used in plant-based foods included in agricultural systems.	the primary purpose is agriculture, including horticulture, grazing, or wood production. The sectors to be considered under this target include, inter alia, croplands, pasture, forestry, including harvesting of non-timber forest products, and aquaculture. Sustainable management for plant diversity implies that a number of objectives are integrated into the management of such production lands: (i) the conservation of plant diversity including genetic diversity; (ii) protection of other plant species in the production landscape that are unique, threatened, or of particular socio-economic value; and (iii) use of management practices that avoid significant adverse impacts on plant diversity in surrounding ecosystems. The object of this element is therefore encourages the use of good agricultural, aquacultural and forestry practices. Guidance on a definition of sustainable management may be required. 'Agricultural lands' may be interpreted to include land under horticultural production too. 9b: This element aims to ensure that crop varieties, farmers' varieties, plants of horticultural merit, landraces and other domesticated socio-economically and culturally valuable plant species are available to support their use in agriculture, forestry, horticulture, and other sustainable developmental and social needs, as well as natural systems that provide ecosystem services. 'Genetic diversity' should be interpreted to include crop varieties, traits and variation within genes. Issues related to the conservation of traditional knowledge are relevant to this element.
Target 10. By 2030, ensure that, nature based solutions and ecosystem approach contribute to regulation of air quality, hazards and extreme events and quality and quantity of	10: By 2030, ensure that the use of native plants is included in [all / XX% of] watershed restoration projects.	Number of watershed restoration projects that incorporate diverse native plant use.	

water for at least [XXX million] people.			
Target 11. By 2030, increase benefits from biodiversity and green/blue spaces for human health and well-being, including the proportion of people with access to such spaces by at least [100%], especially for urban dwellers.	11a: By 2030, [all / XX% of] major cities have developed, designated or protected biodiversity-rich green spaces in urban areas that are accessible to all. 11b: By 2030 [XX] % of the world's largest cities that have a development strategy that includes urban greening, biodiversity conservation programmes and community gardening.	Change in the % of biodiversity-rich urban areas that are designated as green spaces and are accessible to all. Number of botanic gardens or arboreta in major urban centers. Change in the number of the world's largest cities that have a development strategy that includes urban greening, biodiversity conservation programmes and community gardening. Change in number of annual visitors to nature reserves, national parks and botanic gardens and other protected areas within easy reach of each country's urban centers.	11: The development of accessible biodiversity-rich green spaces in cities and other urban areas is a growing need with the increased urbanisation of the world's population. Biodiversity-rich urban green spaces can promote many aspects of sustainable urban life, including promoting environmental education and awareness, native plant gardening, invasive species control and awareness, ecological restoration, storm water management, as well as general physical and mental health and wellbeing of the human population. There are 81 cities with a population over 5 million people, according to the United Nations 2018 estimates. The UN figures are a mixture of city proper, metropolitan area, and urban area. This may be used as a definition of 'major cities'. Botanic gardens and arboreta provide green and public spaces for residents in many of the world's major cities, providing them with biodiversity-rich spaces and experiences. Many municipal parks, gardens and green streetscapes are primarily managed for recreational activities without including biodiversity or plant conservation as important roles or priorities.
Target 12. By 2030, increase by [X] benefits shared for the conservation and sustainable use of biodiversity through ensuring access to and the fair and equitable sharing of benefits	12: By 2030 [all / X% of] countries are benefitting from the exchange of plant materials and associated traditional knowledge to support plant conservation,	Change in the number of countries with appropriate policies and actions are in place to facilitate efficient and effective international and other exchange and transfer of plant materials, expertise and knowledge needed to support conservation, research benefit	12: The development and adoption of appropriate policies and actions to facilitate efficient and effective international and other exchange and transfer of plant materials, expertise and knowledge is urgently needed in many countries to support conservation, research benefit sharing and sustainable use of plant diversity. Constraints in facilitating access, exchanges and collaboration between institutions to support cooperative programmes, particularly at international levels, has slowed progress considerably in achieving plant conservation priorities in many countries.

arising from utilization of genetic resources and associated traditional knowledge.	ecological restoration and sustainable use.	sharing and sustainable use of plant diversity.	It is understood and expected that this element will be achieved in full compliance with the principles and terms of the Nagoya protocol and its associated codes and guidelines, as well as national legislation and regulations adopted in accordance with the Nagoya Protocol at national levels. The achievement of this target will also be undertaken in accordance with the agreed processes under CITES for trade for scientific exchange and research purposes.
Target 13. By 2030, integrate biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies and accounts at all levels, ensuring that biodiversity values are mainstreamed across all sectors and integrated into assessments of environmental impacts.	13: By 2030, at the latest, plant diversity values have been integrated into rural and urban development and poverty reduction strategies and planning processes and have been implemented in natural capital and other national accounting mechanisms and reporting systems worldwide.	Increase in the integration of plant diversity values into rural and urban development and poverty reduction, as well as into planning processes, natural capital accounting and reporting mechanisms.	13: It is widely recognized that the values of plant diversity are not widely reflected in decision-making. The objective of this element is to ensure that the diverse values of plants and opportunities derived from their conservation and sustainable use are recognized and reflected in all relevant public and private decision-making. For example, though numerous studies, at various scales, have illustrated the economic value of plant diversity and the ecosystem services it underpins. Including the values of plant diversity in national and local development and poverty reduction strategies and planning processes and into nation accounting, as appropriate, and reporting systems, places plants into the same decision framework as other goods and services, and would help give it greater visibility amongst policy-makers and contribute to the "mainstreaming" of plant diversity issues in decision-making processes. Reflecting the values of plants in the planning processes of governments at all levels, including economic, financial, spatial planning, and the application of strategic environmental assessment, will help internalize the costs and benefits of the conservation and sustainable use of plant diversity in decision-making. [Based on the Technical Rationale for Aichi Target 2]
Target 14. By 2030, achieve reduction of at least [50%] in negative impacts on biodiversity by ensuring production practices and supply chains are sustainable.			
Target 15. By 2030, eliminate unsustainable			

consumption patterns, ensuring people everywhere understand and appreciate the value of biodiversity, make responsible choices commensurate with 2050 biodiversity vision, taking into account individual and national cultural and socioeconomic condition.			
Target 16. By 2030, establish and implement measures to prevent, manage or control potential adverse impacts of biotechnology on biodiversity and human health reducing these impacts by [X].			
Target 17. By 2030, redirect, repurpose, reform or eliminate incentives harmful for biodiversity, including [X] reduction in the most harmful subsidies, ensuring that incentives, including public and private economic and regulatory incentives,	17: By 2030, at the latest, incentives and subsidies, including afforestation, restoration and carbon sequestration incentives, that are harmful to wild plant diversity are eliminated in order to minimize or avoid detrimental impacts, and positive	Change in number of perverse incentives and subsidies, that are harmful to plant diversity, that are eliminated [in order to minimize or avoid detrimental impacts,] and increase in the number of positive incentives for the conservation and sustainable use of plant diversity that are developed and applied.	17: Substantial and widespread changes to incentives, including subsidies, are required to ensure sustainability. Ending or reforming incentives, including subsidies, that are harmful to plant diversity is a critical and necessary first step that would also generate net socio-economic benefits. In addition, the creation or further development of positive incentives for the conservation and sustainable use of plant diversity, and plant ecosystems, provided that such incentives are in harmony with the Convention and other relevant international obligations, could also help in the implementation of the Strategic Plan by providing financial or other incentives to encourage actors to undertake actions which would benefit plants. [Based on the Technical Rationale for Aichi Target 3].

are either positive or neutral for biodiversity.	incentives for the conservation and sustainable use of plant diversity are developed and applied.		
Target 18. By 2030, increase by [X%] financial resources from all international and domestic sources, through new, additional and effective financial resources commensurate with the ambition of the goals and targets of the Framework and implement the strategy for capacity-building and technology transfer and scientific cooperation to meet the needs for implementing the post2020 global biodiversity framework.	18: By 2030, all countries have the capacities, institutions, networks, resources and public engagement necessary to implement their plant conservation priorities and actions.	Change in the number of countries have the capacity, institutions, networks, resources and public engagement necessary to implement their plant conservation priorities and actions. Measurement of the increase in the total financial and other resources available to implement identified priority plant conservation actions. Number of professional training and capacity building initiatives and number of people trained. Numbers of institutions and organisations involved in implementing plant conservation programmes and membership of plant conservation networks.	18: In the context of this Target, 'capacity' is defined as the process by which individuals and organizations will have obtained, improved, and retained the skills, knowledge, tools, equipment, and other resources needed to achieve the objectives of their national plant conservation strategies and goals. Capacity building can also include a conceptual approach toward social and behavioural change, and the removal of obstacles that lead to infrastructure development allowing the achievement of the stated goals. Significant capacity building can also be supported, encouraged and facilitated through the development of training networks.
Target 19. By 2030, ensure that quality information, including traditional knowledge,	19a: By 2030, all users, including country authorities, have access to comprehensive and	Increase in the number of countries with access to comprehensive and authoritative global and	19a: This plant conservation element builds on the GSPC 2020 Target 1, to have available 'An online flora of all known plants' which is expected to have been achieved by the end of 2020. The implementation of this target was undertaken by an international consortium of leading botanical

is available to decision makers and public for the effective management of biodiversity through promoting awareness, education and research.	authoritative global and national expertise, and online information systems, documentation and inventories of their floras and natural habitats. 19b: By 2030, all known plant species have been assessed for their extinction risk and conservation status. 19c: By 2030, [XX %] of the important areas for plant diversity have been identified. 19d: By 2030, the value of plant diversity and responsibility for its protection is universally recognised by the world's people, including, the ecosystem services they provide and the steps that can be taken to conserve and use plants sustainably.	national expertise, and online information systems, documentation and inventories of their floras and natural habitats. Change in the number of known plant species have been assessed for their [extinction risk and] conservation status. Increase in the number of species recovery plans that have been developed for critically endangered plant species and for restricted range and threatened species and their integration into national spatial planning. Change in the number of important areas for plant diversity identified and protected. The proportion of described plants included in a scientifically verified and up-to-date online flora. and national plant information systems, including number of new plant species discovered and described. Number of countries with access to comprehensive and	institutions, the World Flora Online (WFO) Consortium, as well as by individual Parties that are preparing and making available electronic Floras at national and other levels. Nevertheless, increasingly comprehensive data continue to be needed to guide conservation action. Further work is required to ensure that the comprehensive data on plant species and their habitats are available. While the WFO provides a valuable and comprehensive baseline on the world's plants, further work is required to ensure that accessibility is improved to meet the needs of users, including verification of the correct names and synonymy, up-to-date geographic distributional information, comprehensive descriptions, verified images and conservation assessments. Some countries, regions and plant groups are still inadequate known and understood. The target aims to support the development of [distributed and widely accessible] information systems that continue to gather, systematize, integrate and present plant data that are needed to support conservation programs, restoration and sustainable use of all of the world's plant species, including relevant aspects of their ecology, habitats and conservation biology. Furthermore, c.2,000 new plant species are discovered and described annually, many of which require to be listed as threatened. Information systems are needed to continue to update and include such new discoveries. It is expected that this will include new focus on making such data more relevant for users, enhance and build the capacity of the community of plant experts supporting such information systems and providing new tools for identification (keys, pictures and descriptions) and include local and vernacular names where possible and ensuring that data are provided in the most relevant languages. 19b: Implementing this element is a priority at national and regional level as it forms the baseline of knowledge for identifying and assessing threatened species. It is expected that assessments will be "Evidence-based", founded on verifiable data in order to ensure that the assessments are objective, repeatable and provide a strong basis for further investment and are suitable to guide conservation action. The Red List Categories and Criteria under the International Union for Conservation of Nature (IUCN) provide a robust framework for this endeavour. However, since

		scientifically verified national plant information. Number of specific training and education programmes in plant taxonomy and related information technology. Number of national and global threat assessments as a proportion of listed taxa. Increase in the universal recognition of the value of plant diversity and responsibility for its protection by the world's people, including, the ecosystem services they provide and the steps that can be taken to conserve and use plants sustainably. Public surveys of citizens, consumers and sectoral participants on plant awareness and understanding issues (such as botanic garden visitors). The number of people taking part in citizen science programmes monitoring plant diversity.	the proportion of plants assessed globally is still low, this approach will need to be complemented by drawing upon a wider range of assessments at national, regional and global levels. Parties, other Governments and other relevant stakeholders may consider undertaking assessments of the extinction risk and conservation status of other groups such as algae and fungi (including lichen-forming species). 19c: This target highlights the need to identify the world's areas important for plant diversity, and then ensuring their effective protection (an action included in Target 2). The most important areas for plant diversity can be identified according to a set of criteria including endemism, species richness, genetic variability patterns and/or uniqueness of habitats, including relict ecosystems, also taking into account the provision of ecosystem services. 19d: There is an urgent need to effectively communicate the value of plant diversity to all relevant sectors, including Indigenous and Local Communities, young people, the business sector, media and policy makers. There is also a need to refocus a communication strategy to address livelihoods, ecosystem products and services. Implementation of this the target will also require the engagement of both the informal and formal education sectors at all levels, including primary, secondary and tertiary education. It is clear that key messages for a communication / marketing plan for this target will require the incorporation of plant conservation into national climate change communication strategies, and into other relevant resource management documents or strategies.
Target 20. By 2030, ensure equitable	20: By 2030, with the full and effective	Change in the extent of full and effective participation of	20: This Target (see also Target 8a) focuses on respecting and securing the knowledge base of plant resources used to secure livelihoods, food

participation in decision-making related to biodiversity and ensure rights over relevant resources of indigenous peoples and local communities, women and girls as well as youth, in accordance with national circumstances.	participation of indigenous and local communities, at all relevant levels, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of plant diversity, are respected, safeguarded and preserved to support customary and cultural use of these resources.	indigenous and local communities including all genders, at all relevant levels, in respecting, safeguarding and preserving the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of plant diversity, to support customary and cultural use of these resources. Number of studies completed on plant traditional knowledge, innovations and practices of indigenous and local communities. Number of projects undertaken by indigenous and local communities to safeguard traditional knowledge, innovations and practices relevant for the conservation, sustainable and customary use of plant diversity.	security and health care, especially for Indigenous and Local Communities. This measure is incorporated to ensure that future generations accessing these resources can continue to benefit from their sustainable use. The target should be implemented consistent with the Convention's programme of work on Article 8(j) and related provisions. This element may, in the long run, help local and indigenous communities to adapt to emerging environmental challenges such as climate change.