

Plant conservation, botanic gardens and the International Agenda

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Abstract

The *International Agenda for Botanic Gardens in Conservation* was published by Botanic Gardens Conservation International (BGCI) in 2000 following widespread consultation within the botanic garden community. Over 450 botanic gardens have signed the *International Agenda*, using it to guide their conservation action. The *International Agenda* was also a key document taken into account in developing the Global Strategy for Plant Conservation (GSPC) of the CBD. The GSPC has 16 targets to be met by 2010. The role of botanic gardens in working towards these targets is highlighted in this paper. The BGCI PlantSearch and GardenSearch databases are useful for monitoring conservation action in line with the GSPC and the *International Agenda*. With support from BGCI, the GSPC has been revised for the next decade. BGCI also proposes to update the *International Agenda*, retaining its essential features and updating it in line with the GSPC.

Introduction

Botanic gardens around the world individually and collectively provide important resources for conservation of plant diversity and opportunities for increasing resilience to global climate change. As often quoted, botanic gardens contain documented specimens of 80,000 - 100,000 living plant species, providing material for display, research, education, *ex situ* conservation and ecological restoration. With at least 200 million visitors per year, they provide an important 'interface' between botanical science, horticulture and the public in an increasingly urbanised world. Botanic gardens collectively provide a respected voice in biodiversity conservation – acting as champions for plants.

Since its adoption in 2000, the *International Agenda for Botanic Gardens in Conservation* (Wyse Jackson & Sutherland, 2000) has proved to be an important document for the botanic garden community guiding individual and collective conservation actions. The *International Agenda* provides a framework for botanic garden contributions to plant conservation, environmental education and sustainable development. The development of the *International Agenda* involved widespread consultation with numerous contributions from individuals, and organisations around the world helping to define the content and terms of the document. Subsequently the *International Agenda* has provided a model for the development of regional and national botanic garden strategies. Registration to the *International Agenda* indicates a commitment to take action and work with the botanic gardens worldwide to secure plant diversity for the well being of people and the planet.

The need for botanic gardens to implement the objectives of the *International Agenda* has become increasingly important since its publication in 2000 as the threats to plant diversity intensify. Ten years on, in the International Year of Biodiversity, it is a good time to reflect on the impact of the *International Agenda*.

Measuring success

The *International Agenda* suggested four broad targets and success measures for the botanic garden community as well as more detailed targets for individual gardens. Progress towards the four broad targets has been good over the past ten years but the work is far from over. Table 1 below indicates progress against the four targets based largely on information contained within BGCI's GardenSearch and PlantSearch databases. The GardenSearch database contains records for 2,677 botanic gardens of which 573 are BGCI members. Contact details are provided for each institution together with information on the date of establishment, location, collections, and activities undertaken. The PlantSearch database contains plant records from 705 botanic gardens (26 percent of all institutions included in GardenSearch with records from 57% of BGCI members). The plant records represent 185,000 taxa from 93,000 species. PlantSearch also contains conservation assessment data in the form of IUCN lists of threatened plants (Walter & Gillett, 1998) and CITES Appendices listings together with partial lists of medicinal plant names and genera of Crop Wild Relatives.

Table 1 Progress towards the four International Agenda targets

Target	Success Measure	Progress by 2010
Global adoption of the <i>International Agenda</i>	Number of gardens who have registered adoption	453: 17% of all botanic gardens and 45% of BGCI institutional members
Each known threatened plant & ecosystem included in conservation programmes	Number of species recovery & ecosystem conservation programmes	9,500 globally threatened plant species in <i>ex situ</i> collections as recorded in PlantSearch Database; 17% of BGCI members record species re-introduction programmes. 19% of BGCI members involved in ecosystem conservation
Capacity of botanic gardens developed for biodiversity conservation particularly in regions of high diversity. Resources identified & accessed to support their biodiversity conservation activities.	Number of botanic gardens; % that have research, conservation and education programmes.	8% of all botanic gardens known to have conservation programmes; 9% education programmes, 13% research programmes. Equivalent figures for BGCI member gardens: 26%; 24%; and 42% respectively
Current information on the activities, collections & facilities of botanic gardens worldwide available to support biodiversity conservation	Number of botanic gardens linked to the Internet, number with comprehensive & accessible electronic data systems on their collections	Approximately 25% have provided data to BGCI

The *International Agenda* states that botanic gardens cannot work alone: “they must work in partnership with a wide range of bodies to achieve their targets including governments, organisations, institutions, corporations, communities and individuals”.

The development of the *International Agenda* also recognised the need for global targets for plant conservation which go beyond the work of botanic gardens to be established urgently, specifically to address:

- Halting the worldwide loss of plant species and their genetic diversity in the wild.
- Raising awareness of the importance of plants and the maintenance of biodiversity for the planet and human survival.
- Conservation needs and priorities within national, regional and local strategies on biodiversity conservation, the environment, sustainable development, economic and social policies, land use management and public education.

The overall impact of the *International Agenda* can perhaps be best assessed by the major influence it has had on global biodiversity policy. The *International Agenda* is specifically acknowledged as a key background document and delivery mechanism for the Global Strategy for Plant Conservation (GSPC) of the Convention on Biological Diversity (CBD). The GSPC was adopted unanimously by all countries that are signatories to the CBD in 2002.

The Global Strategy for Plant Conservation

The scope of the GSPC is broad with five inter-related themes:

- Understanding and documenting plant diversity
- Conserving plant diversity
- Using plant diversity sustainably
- Promoting education & awareness about plant diversity
- Capacity building for plant diversity

These in turn are linked to 16 outcome-orientated targets.

Botanic gardens and BGCI have been closely involved in the GSPC since its inception and have strongly supported implementation of the Strategy. The 16 GSPC targets have provided the basis for BGCI's own programmes and activities, for example in the BGCI Five Year Plan 2007-2012. A BGCI member of staff is seconded to the CBD Secretariat to act as GSPC Programme Officer and has been able to support national implementation of the Strategy in a wide range of countries including China, Japan, Mexico and the Seychelles.

Although primary responsibility for GSPC implementation is at the national level, most of the 16 Targets of the GSPC (except for several that are cross-cutting) have an international organisation designated to help facilitate implementation and monitor progress. BGCI acts as the lead facilitating agency for GSPC Target 8 on *ex situ* plant conservation and also GSPC Target 14 on education and public awareness. These two targets are clearly key to the work of botanic gardens around the world and their associated networks at national and regional levels. Linking botanic gardens with other major actors in plant conservation, BGCI provides the Secretariat for the Global Partnership for Plant Conservation (GPPC).

BGCI's online PlantSearch database was designed to monitor progress towards Target 8 of the GSPC as well as providing a planning tool for *ex situ* plant conservation and a mechanism for sharing information on species in collections. Table 1 above shows that

9,500 globally threatened plants are currently recorded in PlantSearch. As progress in IUCN global Red Listing for plants has been slow (Vie *et al* 2009) more detailed analyses have been undertaken for Europe (Sharrock and Jones, 2009) and North America, using regional threatened plant lists. A global GSPC Target 8 report is planned for the Tenth Conference of the Parties to CBD (CBD COP10) to be held in Nagoya, Japan in October 2010.

The GSPC targets have been widely adopted by the botanic garden community (see for example Leiva, 2005; Martinelli 2010; Huang, 2010; Kramer, 2010) and have been used to develop national and regional botanic garden strategies. *International Agenda* targets aligned to the GSPC were agreed in 2004. Linking work to the GSPC targets helps botanic gardens to be closely aligned with national and international policy through the CBD. The role of botanic gardens in implementing the GSPC was recognised in the mid-term review of the Strategy (Secretariat of the CBD, 2009). More recently BGCI has undertaken a survey of botanic gardens to find out about implementation of the Strategy (Williams & Sharrock, 2010). A total of 252 responses were received by the end of May, 2010 from botanic gardens around the world. The results show that all GSPC targets are being implemented to some extent with a wide range of different activities supporting the Strategy.

Overall the GSPC was hailed as a success at the the fourteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 14) of the CBD. Based on an earlier CBD Decision, efforts have been underway to develop a revised Strategy and targets, moving beyond 2010 and taking into account the impact of global climate change. BGCI has played a significant role in the revision process, for example organising two stakeholder workshops in Chicago and Durban. The resulting document was discussed at SBSTTA 14 with a recommendation for this to be adopted at CBD COP10 in Nagoya.

International Agenda – next steps

With the GSPC in place the *International Agenda* may seem less important. This is, however, a document uniquely binding the botanic garden community that has scope beyond the GSPC in relating to other broad policy initiatives. As already referred to, its adoption shows a level of commitment by individual gardens. Since 2000, there have been both shifts in global biodiversity policy and a deepening of the biodiversity crisis. It is therefore important to update the *International Agenda* to reflect:

- GSPC – adopted in 2002, revised 2010
- Millennium Development Goals - 2000
- Millennium Ecosystem Assessment - 2005
- Global awareness of climate change

In updating the *International Agenda* it is also important not to lose sight of the need for conservation action. It is intended to link *International Agenda* recommendations to the revised GSPC targets and develop *International Agenda* protocols on methodologies and measuring impact – linking to a GSPC toolkit that is being developed by BGCI. Specific *International Agenda* protocols are being considered on education and public awareness; engaging with local communities in conservation planning and delivery and biodiversity and livelihoods.

Conservation action

The GSPC provides a global framework for plant conservation and the *International Agenda* provides a unique framework for botanic gardens closely related to this. In addition to supporting policy development, BGCI has supported a wide range of conservation projects over the past ten years, demonstrating practical approaches to plant conservation. It is hoped that these experiences and practical examples of the work of individual botanic gardens will increasingly help to shape the policy agenda and show the relevance of botanic gardens to major global issues. BGCI has, for example, drawn attention to the work of botanic gardens in relation to biodiversity and human well being (Waylen, 2006). In a recent project undertaken in Uganda and Madagascar, entitled *Wild plants for food and medicine*, BGCI set out to develop a practical methodology on engaging local communities in plant conservation action to support local livelihoods. Activities involved assessment of species and habitats of conservation importance both at scientific level and with direct community involvement and the development of conservation interventions supported by botanic gardens.

BGCI has also developed a comprehensive conservation programme in China with a specific focus on tree conservation projects working with botanic gardens, again linking as far as possible with local communities. In Cambodia, where a botanic garden has not yet been developed, BGCI has been working with the Department of Nature Conservation and Protection on the sustainable management of natural resources in O Toch village which is affected by dam construction. In this case nurseries for bamboo, rattan (basket making), *Aquilaria* (agar wood) and native timber species have been established; a community protected area created and restoration of degraded land has been undertaken using native species. A discussion document has been developed based on the practical experiences in Uganda, Madagascar, China and Cambodia and will be made available through BGCI's website.

Looking ahead

There is an increasing need for botanic gardens to work together to implement the GSPC, the *International Agenda*, and practical conservation in line with these policy documents. The BGCI PlantSearch database is an important tool supporting *ex situ* plant conservation. The BGCI GardenSearch database can help facilitate skill-sharing and collaboration on a wide range of conservation actions. All botanic gardens are urged to support these databases and input data so that they can provide an accurate reflection of the combined conservation work being undertaken. In this way PlantSearch and GardenSearch will continue to be used to monitor the success of the GSPC and *International Agenda* post 2010 and BGCI will work to upgrade the functionality of the databases. Looking ahead the *International Agenda* will be revised through a consultative process and taking into account the outcomes of the CBD COP 10 in October 2010. All comments and input are warmly welcomed to ensure that the *International Agenda* continues to inform, inspire and link botanic gardens worldwide in a common purpose.

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