



# 6<sup>th</sup> Global Botanic Gardens Congress: Botanic Gardens in society: Visions for the future

## Congress Conclusions

The scientific programme of the Congress was divided into 5 key thematic areas. Each theme addressed a specific question, as outlined below.

### **Theme 1: Science for Society**

Question: How can botanic gardens use their scientific expertise to help solve society's "big issues"?

### **Theme 2: Plant Conservation**

Question: How can botanic gardens ensure that no plant species becomes extinct?

### **Theme 3: Education and outreach**

Question: How can botanic gardens communicate with and empower society on the big-issues?

### **Theme 4: Management challenges**

Question: How can botanic gardens make use of new and emerging management technologies and approaches?

### **Theme 5: Communicating via landscapes**

Question: How can botanic gardens communicate visions for the future through landscape and design?

These questions were addressed through a mix of plenary talks, panel discussions, symposia, workshops, presentations and posters.

Some of the key issues emerging from the Congress are highlighted below.

## **Science for Society**

The presentations highlighted that botanic gardens can, and often are, leaders in their communities on social and environmental issues.

Key societal issues that were discussed during the congress included food security, climate change and sustainability. It was noted that these issues relate closely to the Sustainable Development Goals (SDGS) and many of speakers made links to where and how the work of botanic gardens contributes to the SDGs.



Botanic gardens also bridge the gap between science (academic world) and society (general audience) and can use their living collections to develop triangular collaboration for the benefit of all.

**Food security:** Botanic gardens can engage more closely on issues around food security through public engagement, focussing conservation efforts on species important for food, including crop wild relatives, and engaging with initiatives such as Food Forever (e.g. signing the Food Forever Declaration of Interdependence – [www.food4ever.com](http://www.food4ever.com)).

**Local communities and indigenous knowledge:** botanic gardens have a unique opportunity to position themselves as key components of local communities and to engage with indigenous and other populations to protect the integrity of biological, cultural, and language diversity. However, it is clear that the establishment of programmes with indigenous communities must be done with respect and trust.

**Sustainability:** Botanic gardens can showcase sustainability solutions and can educate visitors on how to change to more sustainable life styles. It was noted that some gardens need to take steps to reduce their carbon footprints and chemical usage. For example, it was suggested that botanic gardens should eliminate the use of disposable plastic (water bottles etc.) in the garden.

## Plant conservation

The importance of in-country, and between-country, partnerships for conservation were frequently highlighted. Such partnerships provide multiple and mutual benefits that enrich conservation and related scientific efforts and their impact.

Through partnerships:

- Resources and expertise can be leveraged to enhance the ability at both institutional and national level to contribute to securing threatened species.
- The strengths of collaborating organisations are enhanced.
- Shared learning benefits conservation efforts and knowledge creation.
- Cultural and other ideas can be exchanged and built on.

However, for partnerships to work, it was emphasised that someone needs to take the lead to ensure progress and continuity.

It was noted that, in conservation terms, every species is different. Botanic gardens need to understand both the unique values of each species (for medicine, crop breeding, as a pollinator resource etc.) and the varied threats they face (habitat loss, overharvesting etc.), and then tailor species-specific conservation actions in response.

For developing *ex situ* collections with high conservation value, remember biology informs strategy. Collecting strategies should consider a species range, biology and habit, breeding system, accessibility of populations, time available, people and financial resources available.



For determining *in situ* conservation priorities, molecular tools can help to identify populations that harbour unique alleles, high genetic diversity, limited gene flow, and potential adaptive capacity.

### **There are no short-cuts to plant conservation.**

Some issues / needs that were identified:

- Lack of trained horticulturalists
- Lack of genetic diversity in collections
- Lack of botanic gardens in areas of high diversity.
- Need to work within the framework of national / regional strategies
- Need to focus on highest priority and greatest impact (flagship species)
- Focus on filling biogeographic and phylogenetic gaps.
- The need to complete the data in BGCI databases to support gap analysis and prioritisation. This is particularly an issue with information on tropical species.
- The Importance of the Global Strategy for Plant Conservation (GSPC) in driving conservation action at all levels

With regard to the GSPC, it is clear that there is a need to closely align future plant conservation strategies and policies with the SDGs. The need for botanic gardens to be proactive in pressing for a renewal and update of the GSPC for the period post-2020 was also stressed, linked to the SDGs. Nevertheless we should not lose sight of the fact that halting the loss of plant diversity is botanic gardens' primary responsibility and priority. However, placing plant conservation into its appropriate national and international socio-economic and political context will need to be achieved if conservation goals are to be achieved.

## **Education and outreach**

**Community engagement:** Botanic gardens have the ability to amplify their conservation efforts by engaging their communities and constituencies to assist in their research, restoration, and outreach. By mobilizing visitors, members, students, and volunteers, botanic gardens can move beyond simply building awareness of the importance of plants and healthy ecosystems, to mobilizing communities to assist in restoring and maintaining local habitats. Thinking analytically about these programmes, gardens can establish meaningful metrics to track and demonstrate the environmental impact of their efforts.

**Reaching new audiences:** Botanic gardens are great places to engage people with nature and there are a great diversity of techniques and approaches that can be shared between gardens. It is important that botanic gardens do not work alone. Through collaborating with selective partners, gardens can engage new audiences. Innovative ways to connect botanic garden activities and collections with historical aspects, new technologies, special features of garden design or with modern art provide opportunities for gardens to interact with all kinds of audiences (even those normally not visiting botanic gardens).



**Supporting science:** Ranging from citizen science to landscape management and ecological gardening, there is a growing interest in activating botanic gardens' constituencies in meaningful science and conservation. It was noted that in addition to providing labour and fostering engagement, these programs also assist in community-building, by bringing people together in pursuit of a common cause. It was also noted that programmes targeted to young people can change their view of plants and change the way they think about college and careers

**Achieving wider goals:** Through outreach programmes, botanic gardens are addressing several SDGs, including SDG 4 quality education; SFG 11 – Sustainable Cities and SDG 15 – Life on land.

## Management challenges

Botanic gardens are involved in generating and managing data and information relevant to contemporary and forward-thinking scientific assessments, using current sensor technology, climate vulnerability modelling and projections, and resource-conserving technology; all leading to plans and actions that strengthen the management of garden collections, landscapes, facilities, and financial and other resources.

Utilizing and sharing data sources has become extremely important for effective collections development. Some of the key issues identified around this theme included;

- data and science-informed management of garden collections and landscapes is important for resource conservation and efficiency, visitor comfort, wildlife, and more.
- landscape succession and adaptive management strategies can be developed for the future climate scenarios:
  - identifying vulnerabilities and risks associated with the changing climate.
  - planting for diversity for uncertain future conditions, including species projected to be appropriate for future growing conditions.
  - relocating susceptible plants to other gardens or sites that can sustain them in the future.
- priorities and plans to implement multi-dimensional initiatives to reduce waste and resource consumption.
- focusing on the conservation of “socio-economically and culturally valuable” plant species – identifying plants that are valued by people for conservation.
- ensuring that species of conservation concern are adequately represented in collections and collections contain the appropriate levels of genetic diversity.
- benchmarking can be used to identify strengths and weaknesses and help guide the best allocation of resources.

Finally, it was noted that an accreditation programme could help to establish a shared set of standards for all to follow and

## Communication via landscapes

The key theme here was the use of native plants by botanic gardens. In particular it was noted that:



- Ecological landscaping using native species and planting in niche environments reduces resource use for maintenance.
- Design and implementation of garden landscapes using native plants can inform the actions of local governments and influence members of wider society – as well as being beautiful.