

# The GSPC implementation in Spain: first steps towards a National Plant Conservation Strategy in Spain

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## Abstract

Since the *Global Strategy for Plant Conservation* (GSPC) (CBD Secretariat, 2003) was established, Spain has made an outstanding contribution to the implementation of this Strategy. The process began in 2000 with the *The Gran Canaria Declaration calling for a Global Program for Plant Conservation* (BGCI, 2000). One of the meetings of the international commission to draw up the GSPC objectives was also held in Gran Canaria. At least two Spanish members – representing international organizations involved in the CBD - attended these meetings. With their attendance, two Spanish botanical gardens were also present. When the GSPC was adopted during COP 6 (The Hague, 2004), Spain held the EU Presidency and played an important role in the search for the necessary international consensus.

Furthermore, the REDBAG constitution (Red Española de Bancos de Germoplasma de Plantas Silvestres - Spanish Network of genebanks for wild plants) provided an early response to the Spanish commitment to GSPC (Target 8 for *ex situ* conservation). The Ministry of the Environment will soon recognize REDBAG as an official Network. More recently (November 2006), an international Symposium was held at the Cordoba Botanic Garden supported by the Areces Foundation which meticulously analyzed the degree of GSPC implementation in Spain. This work shows the fulfilment target by target. The conclusions of this Symposium will require the Ministry of the Environment to draw up a single Spanish Strategy for Plant Conservation. This proposal has been accepted and the first steps have been taken to initiate it.

## Introduction

Since the *Global Strategy for Plant Conservation* (GSPC) (CBD Secretariat, 2003) was established, Spain has made an outstanding contribution to the creation and development of this Strategy. The process began in 2000 with the *The Gran Canaria Declaration calling for a Global Program for Plant Conservation* (BGCI, 2000), which was drawn up during the meeting held in the *Viera y Clavijo* Botanical Garden, Gran Canaria.

In order to draft the GSPC text and objectives, a work team was created which assembled in Montreal, London, and once again in Gran Canaria. These meetings were always attended by at least two Spanish members, in representation of international organizations or committees, as well as diverse Spanish institutions and Botanical Gardens.

When the GSPC was adopted during COP 6 (The Hague, 2004), Spain held the EU Presidency and their position in favour of this Strategy jointly with the role played by the Spanish Representation during the Conference was essential in the search for the international consensus required for its approval. Simultaneously, REDBAG (Spanish Network of genebanks for wild plants) was founded within the Central Office of the Ibero-Macaronesian Association of Botanical Gardens of Spain, in which they offered the Spanish Ministry of the Environment (MIMAM) the national network role as a direct response to Target 8 of GSPC. This recognition is still in the approval process.

In February 2006, also promoted by the *Viera y Clavijo* Botanical Garden, the work team assembled in Gran Canaria again in order to prepare the Gran Canaria II Declaration, which considers the response of botanic

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gardens and the scope of the *ex situ* conservation to address the problems caused by climatic change on biodiversity (BGCI & Cabildo de Gran Canaria, 2006).

More recently (November 2006), a Symposium supported by the Areces Foundation and held in the Botanic Garden of Córdoba, meticulously analyzed the fulfillment level of all the GSPC targets in Spain. The Spanish State already had a National Biodiversity Strategy but it was necessary to carry out an in-depth revision of the GSPC targets and even to propose the elaboration of a National Strategy specifically for Plant Conservation which has a more direct response to the GSPC goals.

As a result, MIMAM has been requested to write up the Spanish Plant Conservation Strategy (ECP). This proposal has been positively accepted and the first steps have been taken to draft it.

The ECP must have minimum objectives which are clear and realizable in a specific time period and size, and it must include mechanisms which stimulate the participation of all the relevant sectors and coordination between government departments and institutions. It must also incorporate specific action plans, work tools, financing mechanisms, and tracking, as well as indicators and evaluation systems.

This Strategy must be the reference framework in which the activities developed by the different government departments and institutions converge in a coordinated programme, in order to achieve the targets set forth by GSPC, as well as other actions which it considers necessary to include in order to ensure the conservation of plant diversity.

The Public Administration sectors must be considered, including the State and Autonomous territories, in order to promote the cooperative policies required to fulfill the GSPC goals. The Public Sectors related to the fields of agriculture and forestry must also be integrated in the ECP development. It also welcomes the participation and integration of other public and private institutions related to this matter, which include, the Spanish National Research Council (CSIC, Iberian Flora Project, Anthos), Universities (Departments and Research Groups), Ibero-Macaronesian Association of Botanical Gardens of Spain (AIMJB), Spanish Society for Conservation Biology of Plants (SEBCP), Spanish Bryological Society (SEB), Spanish Network of genebanks for wild plants (REDBAG), the Spanish IUCN Committee, and other NGOs committed to the conservation of plant diversity.

## **A review of the present contribution by Spain to the implementation of the GSPC**

Following the analysis of the commitments acquired for the GSPC and the fulfillment level achieved in Spain at present, for each of the 16 targets of GSPC, the main achievements accomplished and the desired objectives for ECP are mentioned:

### **(a) Understanding and documenting plant diversity:**

(i) The Iberian Flora project is highlighted (<http://www.rjb.csic.es/floraiberica/>). At present, there are complete regional and local floras, including the Canary Islands, jointly with various information technology projects and on-line consultation of the distribution of species (Anthos, GBIF). Nevertheless, there is an urgent need to prepare a complete and accessible list of all the vascular plants of Spain's flora which is also desirable for the bryophytes, as well as to promote and improve the Internet consultation systems on the Spanish flora species.

(ii) The Red List (Lozano, 2000) of Spanish vascular plants includes 1414 taxa (IUCN criteria 1994). Of these, 466 have been re-evaluated with IUCN criteria (2001) including in the Atlas and Red Book (Bañares *et al.*, 2003, republished in 2004). 441 have been considered CR, EN, VU, or DD and 25 as EX, EW, or LC. Several Autonomous Communities (Andalusia, Balearic Islands), have recently published their own Red Books for vascular plants (see European Plant Data Sheets <http://www.plant-talk.org/country/spain.html>). In relation to bryophytes, of the 1012 Spanish species, 370 are considered as threatened (88 E +V and 283 R).

The aim is now to finish the evaluation of the conservation status of the VU and DD species, completing their revision before 2008, as well as the Red List of Bryophytes (Sérgio *et al.*, 1994).

(iii) There is extensive experience in the preparation of protocols for plant conservation. Several Autonomous Communities perform activities which as a whole, constitute “strategies” for threatened flora conservation, with directives for the integration of *in situ* and *ex situ* conservation, artificial propagation by means of *in vitro* cultivation techniques, maintenance of plant species within their ecosystems, establishment of conservation priorities and actions for the reintroduction or reinforcement of endangered populations. It now seeks to reduce the dispersion, facilitate availability, and establish common homologated criteria for the methods and protocols applicable in conservation works and sustainable usage models for plant species.

#### **(b) Conserving plant diversity**

(iv) The Natura 2000 network covers 25% of national territory and integrates 116 types of Spanish habitats, but it is necessary to set up measures for their conservation, as well as other Protected Natural Spaces (ENPs) in order to assure that the areas with the highest floral interest are efficiently conserved for each of the four biogeographical regions that exist in Spain.

(v) It can be affirmed that over 50% of the important plant areas are located within ENPs, but even so, it is necessary to increase the protected areas to suitably cover the threatened species not included in the sites of the Natura 2000 network or in other Protected Natural Spaces. It is worth considering the option to promote the creation of micro-reserves.

(vi) Several agroforestry systems such as the Cork Tree pastures are an international example of sustainable exploitation. However, it is necessary to prepare and apply sector-based agricultural and forestry plans and integrate the targets of the *Global Strategy for Plant Conservation* in them, as well as perform an in-depth analysis to quantify the useful agricultural surface area. The areas with forestry uses must also be managed in coordination with the conservation of plant diversity. It must include certain exceptional agroforestry systems of the Spanish territory such as olive groves, pine groves, and pastures, and discover management models which are compatible with the conservation of plant diversity which they contain.

(vii) Although it can be assumed, that the majority of the 466 plants studied in the AFA project are conserved in ENPs, it is essential to guarantee their effective inclusion in the Natura 2000 network or in other Protected Natural Spaces.

(viii) Over 60% of the endangered plant species in Spain are conserved in accessible *ex situ* collections due to the existing 12 wild flora seed banks (REDBAG). It is now necessary to recognize this network, coordinate its work, and promote the creation of a national seed bank.

(ix) In Spain, there is a National Seed Bank for cultivated species and over 20 local Seed Banks for specific crops. It is now necessary to create a National Register of varieties and traditional knowledge and establish mechanisms to promote *ex situ* or *in situ* conservation of these varieties and knowledge, promoting their cultivation and the participation of local communities in the benefits derived from this usage.

(x) There is a work and tracking team as well as a national atlas of invasive plants. Several Autonomous Communities also have their own atlas and eradication plans, but it is necessary to prepare an official catalogue of invasive plant species and set up suitable measures and management plans for their prevention, control, or eradication. It has been suggested to promote the use of native species or plants with low invasiveness in the restoration of plant cover, silviculture, and landscaping.

#### **(c) Using plant diversity sustainably**

(xi) It is necessary to develop suitable measures so that no Spanish species demanded by international trade is subjected to unsustainable extractions, and promote international cooperation projects for the plant species subject to importation by Spain, which are extracted in a harmless way for their survival in their countries of origin, in application of the commitments acquired as a signatory country of CITES. It is also

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necessary to reinforce the capacity in the identification and detection of the illegal traffic of species and specimens, by the Spanish civil servants involved in this control.

(xii) It is necessary to increase the production of organic foods, certified wood, agricultural surface areas managed by integrated production methods, and perform a national inventory of harvested species with commercial purposes based on natural populations, their uses and utilities (aromatic, medicinal, ornamental), and the extraction methods, analyzing the sustainability of their usage, and if required, appropriate regulatory formulas.

(xiii) This requires the completion of the national inventory of our Ethnobotanical patrimony, promoting the compilation of the traditional knowledge from all the villages and territories of the Spanish State in relation to the usage of plant species, plant formations, and the ecosystems in which they are integrated. It proposes the creation of a national register of traditional knowledge for the protection, certification of origin, sustainable use, and fair and equal distribution of the benefits derived from this usage.

#### **(d) Promoting education and awareness about plant diversity**

(xiv) Despite all the accumulated experience, we must make an effort to increase citizen awareness and incorporate the importance of plant diversity and the necessity of their conservation in educational programs, modifying the contents of teaching plans and programs and promoting new Mass Media initiatives in favor of diversity as a paradigm of conservation and sustainability.

#### **(e) Building capacity for the conservation of plant diversity**

(xv) After analyzing the current situation, it is essential to identify the real needs and evaluate the number of professional staff that is required to facilitate the achievement of the GSPC targets, and where required, increase the number of these professionals.

(xvi) In spite of the existence of networks, associations, and organizations such as NATURA 2000, AIMJB, SEBCP, REDBAG, AIMJBH, etc., we must strengthen and support their operation and promote the new networks which are required.

## **References**

- Bañares, Á.; Blanca, G.; Güemes, J.; Moreno & J.C.; Ortiz, S. (eds), 2004. *Atlas Y Libro Rojo De La Flora Vasculare. Amenazada De España - Taxones Prioritarios*. Organismo Autónomo Parques Nacionales, España. [http://www.mma.es/portal/secciones/biodiversidad/inventarios/inb/flora\\_vascular/](http://www.mma.es/portal/secciones/biodiversidad/inventarios/inb/flora_vascular/)
- BGCI, 2000. *The Gran Canary Declaration calling for a Global Program for Plant Conservation*. BGCI, London, UK.
- BGCI & Cabildo de Gran Canaria, 2006. *The Gran Canary Declaration II on Climate Change and Plant Conservation*. BGCI, London, UK & Cabildo de Gran Canaria, Las Palmas de Gran Canaria, Spain.
- CBD Secretariat, 2003. *Global Strategy for Plant Conservation*. CBD Secretariat, Montreal, Canada. <http://www.cbd.int/programmes/cross-cutting/plant/default.asp>
- Lozano, F.D., (ed.), 2000. *Lista Roja de la Flora Vasculare Española*. Unidad de Botánica, Departamento de Biología, Madrid, Spain.
- Sérgio, C. Casas, C., Brugués, M. & Cros, R.M, 1994. *Lista Vermelha dos Briófitos da Península Ibérica* [Red List of Bryophytes of the Iberian Peninsula]. ICN, Lisbon, Portugal.

Global Strategy for Plant Conservation |9Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora |12Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels |14Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical. The adoption of the Strategy in 2002 by the Convention on Biological Diversity was a major achievement for biodiversity conservation worldwide. It provided much needed and urgent recognition not only of the importance of plants for humanity but also of the critical threats faced by tens of thousands of plant species throughout the world. in plant conservation related to the various. targets of the GSPC: WG1: Improving knowledge in plant. species biology for appropriate in situ. conservation. strategies in species conservation. We. also aim to promote citizen science by. One of the important steps in ex situ conservation is the collection and storage of seeds and the consequent establishment of seed germination protocols. *Cerastium dinaricum* (Caryophyllaceae) is an endemic, high elevation and rare species of European conservation [Show full abstract] concern. Because of its severely fragmented distribution along the Dinaric Alps, the populations are likely to undergo further shrinkage in the future, which addresses the need of a long-term effective conservation management. 2. The Global Strategy for Plant Conservation is a catalyst for working together at all levels - local, national, regional and global - to understand, conserve and use sustainably the world's immense wealth of plant diversity whilst promoting awareness and building the necessary capacities for its implementation. 3. If all efforts are made to fully implement this Strategy: (a) Societies around the world can continue to rely upon plants for ecosystem services, including food, medicines, clean water, climate amelioration [or control], and rich, productive landscapes; (b) Humanity can fully utilize Launch a National Strategy for AI. AI value to reach the ODS set by the Agenda 2030. Impact the social and economic fabric with AI. Include the knowledge and use of AI in the labour market and the promotion, recovery and attraction of talent. AI for the use of Public Administrations Data. They mention Leonardo Torres Quevedo as an important historical figure in Spain in terms of development of AI with his demonstration of chess automation in 1912. Further they tell of how the community in Spain has developed. Specific indicators are being established and the Government AI readiness index is mentioned. Mechanisms that allow the implementation and use of AI technologies in the different priority sectors. Mechanisms for improving existing instruments and access to funding. The Global Strategy for Plant Conservation (GSPC) 2011-2020 and what it means for you. This fact sheet is designed to be a straight forward guide to the updated Global Strategy for Plant Conservation, particularly for members of IUCN's Plant Specialist groups. v Recent developments with the Global Strategy for Plant Conservation At the Convention on Biological Diversity meeting in Nagoya in October 2010 (CBD COP10) an amended and updated Global Strategy for Plant Conservation was endorsed by the world's governments. This follows eight years of the first Global Strategy for Plants (endorsed in 2002), which has brought plant conservationists together throughout the world and is seen by the Convention and many governments as a great success.