

Education in botanical gardens and arboreta

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Abstract: Botanical gardens and arboreta are scientific and educational institutions with high concentration of plant taxa from different phytogeographical regions. Their activities and functions are defined in international documents, national laws and by internal rules. Education is one of the important roles and this paper deals with different possible educational aspects in such specialized institutions.

Keywords: education, botanical gardens, arboreta, plant protection.

Introduction

Botanical gardens and arboreta are scientific and educational institutions which concentrate the gene fund of plants from different phytogeographical regions of Earth in their collections, they study selected taxa, educate and by means of expositions and thematic events they present the information obtained to their visitors.

The aims of activities and particular functions of botanical gardens and arboreta are defined in international documents and internal rules of national countries. The important and basic documents are: Convention on Biological Diversity (CBD), International Agenda for Botanic Gardens in Conservation (BGCI), Global Strategy for Plant Conservation (GSPC), International Union for Conservation of Nature (IUCN), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), EuroGard – European Consortium in EU (2006).

BGCI states in its recommendation no. 15: The importance of diversity of plant species and the need of their conservation should be transferred to

communication, educational and edifying programmes. In the part Education for sustainable development the botanical gardens are recommended to:

1. Do their best to reflect the ethos of sustainability within the whole institution and to engage all staff members in the botanical garden
2. Direct the attention to concrete target groups and prepare the activities of sustainability in a suitable manner (handtailor),
3. Build up the capacity of the staff members and choose the programmes of education for sustainable development and exploit the capacity of local partners.
4. Exploit the experience in variable educational programmes for sustainable development.
5. Evaluate the programmes in their course and after their realization and implement the obtained experience in future programmes.
6. Develop and propagate botanical gardens and arboreta with the aim of educative impact on pupils, students, ...
 - cooperate with regional municipality in including of the questions of biodiversity conservation and its reasonable exploitation in school programmes
 - cooperate with teachers in organization of excursions to botanical gardens and arboreta
 - prepare some programmes for children and coordinate the work of co-operators with children
 - evaluate the activities of botanical garden and arboreta with children and implement ecological knowledge and new programmes to school curricula.
7. Develop marketing and contacts with the society so that the support in local community arose, widen the sphere of influence with the aim to address wide range of residents.
8. Work up and realize operative approaches, different methods which address wide range of inhabitants, not only those interested in botany and environmental problems, but also those with another interests.
9. Propose educational topics with the aim of nature and biodiversity conservation which are actual on regional level.
10. Employ regional educational programmes which propagate the foundation of „green centres“ in some parts of towns and villages and to support the activities concerning foundation and operation of green areas.
11. Offer different forms of informal education for different social communities of inhabitants with different interest in environmental problems.
12. Evaluate and acknowledge the results of activities with visitors of botanical gardens and arboreta and to publish them in suitable form.

In Slovakia, there is a Nature and Landscape Protection Act no. 543/2002 Coll. and the related rules

- § 44, (1) Institutions for preservation of protected animal and plant species are:
 - b) botanical gardens and arboreta

Botanical gardens and arboreta are the institutions which

- a) specialize in cultivation of endangered, rare or otherwise important species of protected plants with the focus on
 1. the study of biological characters and demands of the species with the utilization of the results in the protection of their populations in natural environment,
 2. the study of the possibilities of re-introduction of the cultivated population to natural environment
 3. the creation of gene fund collections of protected plants,
 4. conservation of the extant species in artificial conditions in the case of their extinction from the natural environment,
- b) acquire seeds and plant material of protected plants,
- c) carry out the education of public aimed at the protection of protected plants.
 - National Strategy of Biodiversity Conservation in Slovakia (NSOPSL) updated for the years 2012-2020, The Conception of Environmental Education in Slovak Republic and others.
 - Schools of different character represent the main institutions of environmental education in Slovakia.
 - Besides the above mentioned, environmental education is realized by means of centres of environmental activities, non-profit associations (SOSNA, Tree of Life) and institutions (DAPHNE Institute of applied ecology, Slovak Environmental Agency, State Nature Conservancy of Slovak Republic).

Botanical gardens and arboreta in the above documents play an important role in the solution of environmental problems and education to sustained environment conservation. They either directly participate in educational programs in various school types or join informal education in different degrees of school system and adult education in order to form environmental awareness in children, youth and adults. Since the botanical gardens and arboreta in Slovakia are a part of the department of Ministry of Education, Science, Research and Sport of the Slovak Republic, they naturally do the activities aimed at science and education. *With regards to the positioning of main activities of botanical gardens and arboreta also to the activities of Ministry of Environment of the Slovak Republic, see Nature and Landscape Protection Act no. 543/2002 Coll., § 45, part 3, letter a), point 1 to 4, letter b), c) they are obliged to cooperate with its sections and to ensure research and environmental education. In the National Strategy of Biodiversity Conservation in Slovakia there are activities of botanical gardens and arboreta given in the Goal 5 – strengthening of national capacities for *ex-situ* protection, and in the Goal 20 – Support of all forms of education and increase of realization of the importance of the conservation of biodiversity and sustainable exploitation of its components and to support the coordination of educational programmes organized by different parts of universities. Botanical gardens and arboreta are not negligible in realization of plans of the Ministry of Culture of the Slovak Republic, above all those*

concerning the appearance of the environment and its educational action on wide range of visitors, and those aimed at cultural and natural heritage preservation.

Realization of the above activities of botanical gardens and arboreta is dependent on several circumstances:

- a) history and tradition
- b) personal capacity
- c) financial security
- d) founder

Botanical gardens and arboreta belong to the scheme of institutions which considerably contribute to the spreading of knowledge on plants, vegetation, ecological relations in nature, biodiversity and environmental sciences. They have important influence in adult education and in education to sustainable development of natural environment. Last, but not least, they form the attitude to dwelling environment, culture, history, science and art.

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