

Chapter 1

Article 9 Ex situ conservation

| 125. What is the relative priority afforded to implementation of this Article and the associated decisions by your country? | | | | | |
|---|--|-------------|---|-------------|---|
| a) High | | b) Medium | X | c) Low | |
| 126. To what extent are the resources available adequate for meeting the obligations and recommendations made? | | | | | |
| a) Good | | b) Adequate | | c) Limiting | X |
| d) Severely limiting | | | | | |
| Further comments on relative priority and on availability of resources | | | | | |
| <p>Questions 125 and 126.</p> <p>Resolution No. 266, 3rd August, 2000, <i>Conselho Nacional do Meio Ambiente – CONAMA</i> [National Environment Council – CONAMA]. This resolution establishes guidelines for the creation of botanical gardens and provides regulations governing their functioning. For further information: www.mma.gov.br/port/conama/res/res00/res26600.html.</p> <p><i>Política de Coleções em Jardins Botânicos</i> [Collections Policy for Botanical Gardens]. The main objective of this document is to assist participating botanical institutions in the preparation of institutional policies based on the principles of access to genetic resources and the sharing of benefits [“<i>assistir instituições botânicas participantes na preparação de políticas institucionais baseadas nos princípios do acesso a recursos genéticos e repartição de benefícios para instituições participantes.</i>”]. The document was created by a working group coordinated by the Royal Botanical Gardens, Kew, UK, which included representatives of 23 botanical institutions worldwide. Brazil was represented by the <i>Instituto de Pesquisas do Jardim Botânico do Rio de Janeiro</i> [Research Institute of the Rio de Janeiro Botanical Garden]. The document “<i>Política de Coleções da Rede Brasileira de Jardins Botânicos</i>” [Collections Policy of the Brazilian Network of Botanical Gardens], based on the principles of the “General Guidelines”, establishes procedures regarding the exchange of genetic resources, observing the norms established by the Convention of Biological Diversity. It was drawn up by the Brazilian Network of Botanical Gardens, a non-profit organization created in 1991 by the directors and technicians of some of the Brazilian botanical gardens to encourage co-operation and knowledge exchange. See www.jbrj.gov.br/crag/politica.htm.</p> <p><i>Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA, Centro Nacional de Pesquisa de Recursos Genéticos e Biotecnologia – CENARGEN</i> [Brazilian Agricultural and Cattle-Breeding Research Company – EMBRAPA, National Research Centre for Genetic Resources and Biotechnology – CENARGEN]. CENARGEN develops research and routine activities in the enrichment, conservation, characterization and evaluation of germplasm for the conservation and exploitation of genetic variability. Some are registered through the institution's own information systems. Considering that 80% of food production in Brazil is from exotic species, special attention is given to germplasm which comes from abroad. The Centre also directs the <i>Sistema Nacional de Curadoria de Germoplasma</i> [National System for the Curation of Germplasm], which is connected to over 235 germplasm banks, totaling more 250,000 samples of plants, animals and microorganisms. These germplasm banks are part of the <i>Sistema Nacional de Pesquisa Agropecuária – SNPA</i> [National System for Agricultural and Cattle-breeding Research – SNPA], co-coordinated by EMBRAPA.</p> <p><i>Jardim Botânico do Rio de Janeiro - JBRJ</i> [Rio de Janeiro Botanical Garden – JBRJ]. The mission of the Rio de Janeiro Botanical Garden is to carry out and divulge technical and scientific teaching and research on the plant resources of Brazil for the understanding and conservation of biodiversity, besides maintaining the scientific collections under its care. Activities include: qualitative and quantitative studies of the diverse plant communities of the country; research on the seed biology and technology of native plants, forest species, fruit trees, and ornamental and medicinal plants; projects in environmental conservation and management; the exchange of species and information with similar national and international organizations. The JBRJ maintains the following collections:</p> <ul style="list-style-type: none"> • Herbarium, with over 330,000 dried plant samples • Fruit collection, with 5,800 dried fruits • Wood collection, with 8,000 samples of wood • Library, one of the most complete Botanical Libraries in Latin America, with 66,000 publications and 3,000 rare works. <p>Further information at: www.jbrj.gov.br.</p> | | | | | |

Zoological Gardens. Brazilian wildlife is protected by Law No. 5197, 3rd January, 1967, and Law No. 7173, 14th December, 1983, regulates the establishment of zoos. Until 1989, the *Instituto Brasileiro do Desenvolvimento Florestal - IBDF* (Brazilian Forestry Development Institute – IBDF) was responsible for regulating and monitoring zoological gardens and animal collections. In 1989, the IBDF was absorbed into the newly-created *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis - IBAMA* [Brazilian Institute for the Environment and Renewable Natural Resources – IBAMA] (Law No. 7735, 22nd February, 1989; Decree No. 97946, 11th June, 1989). To regulate Law No.7173 governing zoological gardens, the norms establishing the minimum requirements for a zoo's registration and functioning were drawn up by technicians of IBAMA and the *Sociedade Brasileira de Zoológicos – SBZ* [Brazilian Society of Zoological Gardens – SBZ]. They were made official by Edict No.283/P, 18th May, 1989, and the Normative Instruction (IN) No.001/89. The *Comissão Paritária de Zoológicos* [Zoological Gardens Parity Commission] was created by Edict No.209/90, 2nd March, 1990. Composed of representatives of IBAMA, the SZB, and NGOs, its purpose is to categorize zoological gardens according to their status and objectives, and to monitor their compliance with the pertinent legislation. Forty-four zoos are registered by IBAMA. For further information see: www.ibama.gov.br/fauna/zoologicos.htm and www.szb.org.br.

Criadouros de Vida Silvestre [Wildlife Breeding Facilities]. The existence of breeding facilities is foreseen in the *Lei de Proteção a Fauna* [Faunal Protection Law] No. 5197/1967, and the *Lei de Crimes Ambientais* [Environment Crimes Law] No. 9605/1998, and its regulatory Decree No. 3179/1999. The legal instruments which regulate the registration and functioning of animal breeding facilities are the following:

- *Criadouros Conservacionistas* [Conservation Breeding Facilities]. Edict No. 139/1993. These facilities provide *ex situ* support IBAMA's species conservation programmes, supporting research in husbandry, management, biology and reproduction. Facilities registered in this category cannot sell or donate animals. Only exchange for breeding purposes with other facilities and zoos is allowed. Currently, there are 209 Conservation Breeding Facilities registered with IBAMA.
- *Criadouros Científicos* [Scientific Breeding Facilities]. Edict No.016/1994 regulates scientific research on captive wild animals. Registration of Scientific Breeding Facilities is only possible for institutions such as universities and research centres already fully recognized by the judicial, executive and legislative powers of the State. Currently, there are 143 Scientific Breeding Facilities registered with IBAMA.
- *Criadouros Comerciais* [Commercial Breeding Facilities]. Edict No. 118/1997. This allows for the breeding and commercialisation of species, either as whole animals animal or of its products and sub-products.
- *Criadouros Comerciais da Fauna Exótica* [Commercial Breeding Facilities for Exotic Fauna]. Edict No.102/1998 regulates the breeding of exotic animals. Currently, there are 665 Commercial Breeding Facilities for both exotic and native species registered with IBAMA.

Further information at: www.ibama.gov.br.

127. Has your country adopted measures for the *ex situ* conservation of components of biological diversity native to your country (9a)?

| | |
|------------------------------------|---|
| a) no measures | |
| b) some measures in place | X |
| c) potential measures under review | |
| d) comprehensive measures in place | |

128. Has your country adopted measures for the *ex situ* conservation of components of biological diversity originating outside your country (9a)?

| | |
|------------------------------------|---|
| a) no measures | |
| b) some measures in place | X |
| c) potential measures under review | |
| d) comprehensive measures in place | |

129. If the answer to the previous question was yes, is this being done in active collaboration with organizations in the other countries (9a)?

| | |
|--------|---|
| a) no | |
| b) yes | X |

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| | |
|---|---|
| 130. Has your country established and maintained facilities for the <i>ex situ</i> conservation of and research on plants, animals and micro-organisms that represent genetic resources <i>native</i> to your country (9b)? | |
| a) no | |
| b) yes – limited extent | X |
| c) yes – significant extent | |
| 131. Has your country established and maintained facilities for the <i>ex situ</i> conservation of and research on plants, animals and micro-organisms that represent genetic resources <i>originating elsewhere</i> (9b)? | |
| a) no | |
| b) yes – limited extent | |
| c) yes – significant extent | X |
| 132. If the answer to the previous question was yes, is this being done in active collaboration with organizations in the other countries (9a)? | |
| a) no | |
| b) yes | X |
| 133. Has your country adopted measures for the reintroduction of threatened species into their natural habitats under appropriate conditions (9c)? | |
| a) no measures | |
| b) some measures in place | X |
| c) potential measures under review | |
| d) comprehensive measures in place | |
| 134. Has your country taken measures to regulate and manage the collection of biological resources from natural habitats for <i>ex situ</i> conservation purposes so as not to threaten ecosystems and <i>in situ</i> populations of species (9d)? | |
| a) no measures | |
| b) some measures in place | X |
| c) potential measures under review | |
| d) comprehensive measures in place | |
| <i>If a developed country Party – Does not apply</i> | |
| 135. Has your country cooperated in providing financial and other support for <i>ex situ</i> conservation and in the establishment and maintenance of <i>ex situ</i> conservation facilities in developing countries (9e)? | |
| <i>If a developing country Party or Party with economy in transition -</i> | |
| 136. Has your country received financial and other support for <i>ex situ</i> conservation and in the establishment and maintenance of <i>ex situ</i> conservation facilities (9e)? | |
| a) no | |
| b) yes | X |

Further comments on implementation of this Article

Question 127.

Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) - Grupo de Conservação da Vida Silvestre [Brazilian Agricultural and Cattle-Breeding Research Company (EMBRAPA) Wildlife Conservation Group]. The goals of the group are: to research the status and distribution of Brazilian wildlife species threatened by extinction, as well as those with potential for economic exploitation; to evaluate the genetic variability in their populations;

to establish wildlife germplasm banks of threatened species; to promote the conservation and/or amplification of genetic variability of wildlife populations; and to maintain Curatorships for Brazilian wildlife. At present the group is concentrating on Brazilian mammals. The programs include: Maned Wolf (*Chrysocyon brachyurus*) Conservation; Survey of Marsh Deer (*Blastocerus dichotomus*) Populations; Capybara (*Hydrochaeris hydrochaeris*) Reproduction and Management in the Cerrado.

Jardim Botânico do Rio de Janeiro - JBRJ Programa Conservação [Rio de Janeiro Botanical Garden – JBRJ Conservation Program]. The goal of the Conservation Program is to carry out research projects which support the implementation of conservation measures for rare and threatened species and draw up strategies for *ex situ* conservation in botanical gardens. The Program has two complementary and multidisciplinary projects for the conservation of native species and conservation *in situ and ex situ*:

- *In situ* research supplies information important for the survival of the species, in ecological roles, evolutionary processes and the maintenance of genetic variability;
- *Ex situ* biological and technological research of native species and their seeds to generate practical information for species conservation through germplasm banks.

Programa Ciência e Tecnologia para Gestão de Ecossistemas - PCTGE [Program of Science and Technology for the Administration and Management of Ecosystems PCTGE]. The PCTGE includes support for the collections of the *Instituto Nacional de Pesquisas da Amazônia - INPA* [National Institute for Amazon Research - INPA], which maintains 49 germplasm banks. For further information see: www.mct.gov.br/temas/meioambiente/pctge/.

Fundo Nacional do Meio Ambiente - FNMA [National Environment Fund – FNMA] and the *Programa Nacional de Florestas – PNF* [National Program for Forests - PNF]. Public Notice No. 1, 2001 of the FNMA invited project proposals for the structuring of regional information networks and the production, storage and commercialisation of seeds of native forest plant species, and the establishment of technical parameters for production activities, training of public and private agents, and network operation and development. The Public Notice announced R\$2,500,000.00 in financial support. For further information see: www.mma.gov.br/fnma.

Management Plans and Conservation Committees for Brazilian Threatened Species. Management plans have been drawn up for a number of species and species groups involving cooperation between Brazilian and foreign institutions. They establish strategies for the transfer of animals between *ex situ* populations and their sound genetic management. For some species, populations overseas outnumber those in Brazilian institutions. The Management Plans and Committees develop detailed analyses of demography and genetics of the captive populations. Management Plans and Conservation Committees have been established for the following: Broad-snouted caiman (*Caiman latirostris*); Golden parakeet (*Garuba guarouba*); Spix's macaw (*Cyanopsitta spixii*); Lear's macaw (*Anodorhynchus leari*); Hyacinth macaw (*Anodorhynchus hyacinthinus*); Giant anteater (*Myrmecophaga tridactyla*); South American canids; Small Brazilian cats; Golden lion tamarin (*Leontopithecus rosalia*); Golden headed Lion tamarin (*Leontopithecus chrysomelas*); Black lion tamarin (*Leontopithecus chrysopygus*); Spider monkeys (*Ateles* sp.); Muriqui (*Brachyteles arachnoides* and *B. hypoxanthus*) and capuchin monkeys (*Cebus xanthosternus* and *C. robustus*).

In 1994, the São Paulo Zoo inaugurated the *Centro de Reprodução de Pequenos Felinos* [Reproduction Centre for Small Felines], and in November 2000 the *Fundação Rio Zôo* [Rio de Janeiro Zoo] created the *Centro Regional de Reprodução de Pequenos Felinos* [Regional Centre for Reproduction for Small Felines]; both in partnership with the Associação Mata Ciliar - AMC [Mata Ciliar Association – AMC]. A Management Plan for Small Brazilian Felines was produced in 1995, resulting in a database, an identification and management protocol, and breeding programmes for ocelot *Leopardus pardalis*, tiger cat *Leopardus tigrinus*, margay *Leopardus wiedii*, Pampas cat *Oncifelis colocolo*, Geoffroy's cat *Oncifelis geoffroyi*, and jaguarundi *Herpailurus yaguarondi*. A partnership has also been set up between the American Association of Zoos and Aquariums (AZA), IBAMA, AMC, the University of São Paulo (USP) and the São Paulo Zoo, for the integrated management of ocelots and the development of techniques for assisted reproduction using frozen embryos. Ten North American zoos have committed about US\$90,000 for this programme, the training of Brazilian technicians in embryo transfer and artificial insemination of felines, and for habitat recovery projects.

A Câmara Temática de Patrimônio Genético Mantido em Condições Ex situ [Thematic Chamber of Genetic Patrimony Maintained *Ex Situ*] was held in October 2002 with the participation of the *Sociedade Brasileira de Zoológicos – SBZ* [Brazilian Society of Zoological Gardens – SBZ] and representatives from various breeding facilities.

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Question 128.

The *Fundação Zoobotânica de Belo Horizonte* [Zoobotanical Foundation of Belo Horizonte] has maintained a scientific agreement with the American Association of Zoos and Aquariums (AZA) since September 2000, and participates in the Species Survival Plan (SSP) for the western lowland gorilla (*Gorilla gorilla gorilla*).

Questions 128 and 131.

Conservation *ex situ* is oriented preferentially to species of economic interest for the country. There are a number of significant activities and projects in the *ex situ* conservation of agricultural biodiversity in Brazil. *Empresa Brasileira de Pesquisa Agropecuária - EMBRAPA* [Brazilian Agricultural and Cattle-Breeding Research Company – EMBRAPA].

Programa Nacional de Conservação de Recursos Genéticos do Sistema Nacional de Pesquisa Agropecuária [National Program of Conservation of Genetic Resources of the National System of Agricultural and Cattle-breeding Research]. See www.cenargen.embrapa.br.

The following publications provide information on Brazilian botanic gardens: *Diretório dos jardins botânicos brasileiros / Rede Brasileira dos Jardins Botânicos*. 2000. Editora Expressão e Cultura, Rio de Janeiro. 80p.; and *Anais da IX Reunião Brasileira de Jardins Botânicos de Brasília: Sociedade dos Amigos do Jardim Botânico de Brasília*. 2000. Editora Semper, Brasília. 86 p.

Question 129.

Brazil takes part in two international networks for genetic resources.

- The first is the *Rede Amazônica de Recursos Fitogenéticos – TROPiGEN*, [Amazon Network for Phytogenetic Resources – TROPiGEN], which operates under the aegis of the *Programa Cooperativo de Investigação e Transferência de Tecnologia para os Trópicos Sulamericanos - PROCITROPICOS* [Cooperative Investigation Programme and Technology Transfer for the South American Tropics – PROCITROPICOS], of the Inter-American Institute for Cooperation on Agriculture (IICA), taking in the largest single block of existing biodiversity of the planet - eight Amazon megadiverse countries: Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.
- The second is a component of the Genetic Resources Sub-program of the *Programa Cooperativo para o Desenvolvimento Tecnológico Agropecuário do Cone Sul – PROCISUL* [Cooperative Programme for the Agricultural Technology Development of South Cone - PROCISUL], which involves Brazil, Argentina, Bolivia, Chile, Paraguay and Uruguay. Created in 1980, PROCISUL is a joint effort of the National Institutes of Agricultural and Cattle-breeding Technology (INIAs) of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay, and the Inter-American Institute of Cooperation for Agriculture (IICA). The *Departamento de Desenvolvimento Sustentável* [Sustainable Development Department] is responsible for the technical aspects of this project in the Inter-American Development Bank – IADB. PROCISUL receives technical support from the *Instituto para a Integração da América Latina e do Caribe – INTAL* [Institute for the Integration of Latin America and the Caribbean – INTAL]. Currently PROCISUL is executing the Project "*Organização e Gestão da Integração Tecnológica Agropecuária e Agroindustrial no Cone Sul*" [Organization, Administration and Management of the Technological Integration of Agriculture and Cattle-breeding and Agroindustry in the Southern Cone], with financing from the IADB. Due to its highly strategic nature it is considered a "Global Project".

In addition, within the Brazilian Amazon, the *Rede de Conservação e Utilização dos Recursos Genéticos Amazônicos - GENAMAZ* [Network for the Conservation and Utilization of the Genetic Resources of the Amazon - GENAMAZ] is currently being structured and already in the first stages of operation. Participation in these networks will make Brazil highly competitive, with broad comparative advantages, while sustained by its intellectual property laws. For further information see: www.cpatia.embrapa.br/livroorg/biodiversidade.doc.

FAO Commission on Genetic Resources. Brazil is a member of the Commission. More information in: www.fao.org/ag/cgrfa/default.htm.

Botanic Gardens Conservation International (BGCI). The following institutions are some of the Brazilian members of the BGCI: *Fundação Zoobotânica de Belo Horizonte* [Zoo-Botanical Foundation of Belo Horizonte]; *Centro de Recursos Genéticos Vegetais e Jardim Botânico* [Centre of Plant Genetic Resources and Botanical Gardens]; *Jardim Botânico de Caxias do Sul* [Caxias do Sul Botanical Garden]; *Jardim Botânico do Ceará* [Botanical Park of Ceará]; *Instituto Plantarum* [Plantarum Institute]; *Jardim Botânico de Pipa* [Pipa Botanical Garden]; and the *Jardim Botânico do Rio de Janeiro* [Rio de Janeiro Botanical Garden]. Further information at: www.bgci.org.

International Plant Genetic Resources Institute – IPGRI. Brazil contributes to the IPGRI. More information at: www.ipgri.cgiar.org.

International Rubber Research and Development Board (IRRDB). An association of the rubber-producing countries of the world, Brazil is a member.

Question 130.

There are germplasm banks in the *Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA* [Brazilian Agricultural and Cattle-Breeding Research Company – EMBRAPA] *Centro Nacional de Pesquisa de Recursos Genéticos e Biotecnologia – CENARGEN* [National Research Centre for Genetic Resources and Biotechnology – CENARGEN]. The Centre manages the *Sistema Nacional de Curadoria de Germoplasma* [National System for the Curation of Germplasm], which has links with more than 235 germplasm banks, which together maintain 250,000 samples from plants, animals and microorganisms. These germplasm banks are part of the *Sistema Nacional de Pesquisa Agropecuária – SNPA* [National System of Agricultural and Cattle-breeding Research – SNPA], coordinated by EMBRAPA.

In February 2002, the HSBC Bank in partnership with the Earthwatch, the World Wildlife Fund (WWF) and the Botanic Gardens Conservation International (BGCI) launched the programme Investing in Nature. For the next five years, this programme will help to protect several threatened plant and animal species; will save and will multiply life in some of the largest rivers of the world; will train scientists; and will offer to 2,000 HSBC Group's employees the opportunity of being volunteers in several projects for environmental conservation worldwide.

Question 133.

See comments on Question 78 (conservation *in situ*).

Metapopulation management plans for the golden lion tamarin (*Leontopithecus rosalia*) and the black lion tamarin (*Leontopithecus chrysopygus*) include the reintroduction of captive born animals.

Question 134.

Provisional Measure No. 2186-16, September, 2002. This Provisional Measure regulates access to the Nation's genetic resources, their protection and access to the associated traditional knowledge, benefit-sharing, access to technology, and technology transfer for its conservation and use. The Brazilian government is consolidating the legislation on the theme and will send a proposal for such legislation to the National Congress.