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V – all have the right to an ecologically-balanced environment, a common good for the use of the people and essential for a healthy quality of life, imposing on the government and society the duty to defend and preserve it for present and future generations

VI – the management objectives for soil, water and biological resource are a matter of society's choice, necessarily involving all relevant sectors of society and all scientific disciplines and considering all forms of relevant information, including scientific, traditional and local expertise, innovations and customs;

VII – the maintenance of biodiversity is essential for the continuity of evolutionary processes and maintenance of systems necessary for life in the biosphere and, for this reason, it is necessary to ensure and promote the ability of living organisms to reproduce;

VIII – where there is consistent scientific evidence of a serious and irreversible threat to biological diversity, the Public Authority will determine cost-effective measures to avoid environmental degradation;

IX – the internalisation of environmental costs and the use of economic instruments will be promoted, taking into consideration the principle that a polluting agent should bear the cost of the pollution, with due respect for the public interest and without distorting trade and international investments;

X – the installation of works or activities which have the potential of causing significant environmental degradation should be preceded by an environmental impact assessment which must be made public;

XI – humans are part of nature and have been present in different Brazilian ecosystems for over ten thousand years, all of which have been, and are being, altered, to a greater or lesser extent;

XII – the maintenance of the national cultural diversity is important for the diversity of societal values with respect to biodiversity, in that indigenous peoples, *quilombolas* and other local communities play an important role in the conservation and sustainable use of Brazilian biodiversity;

XIII – actions related to the acquisition of traditional expertise associated with biodiversity are permissible only with the prior informed consent of the indigenous peoples, *quilombolas* and other local communities involved;

XIV – the value of biodiversity is determined by cultural values, and includes its direct and indirect use, the option of future use, as well as its intrinsic ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic value;

XV – the conservation and the sustainable use of biodiversity must contribute to economic and social development, and to the eradication of poverty;

XVI – the administration and management of ecosystems must seek an appropriate balance between the conservation and sustainable use of biodiversity, and ecosystems must be managed within the limits of their functioning;

XVII – ecosystems must be understood and managed in an economic context, to:

- (a) reduce market distortions, which negatively affect biodiversity;
- (b) promote incentives for the conservation and sustainable use of biodiversity;
- (c) internalising costs and benefits in a given ecosystem as much as possible;

XVIII – research, *ex situ* conservation and process which accrue value to the components of Brazilian biodiversity should preferably be carried out in the country, although international technical cooperation is welcome, as long as national coordination and interests are respected;

XIX – national measures regarding the administration and management of biodiversity must establish synergies and actions which are integrated with conventions, treaties and international agreements related to biodiversity; and



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XX – national measures regarding the administration and management of biodiversity will be of an integrated, decentralized and participatory nature, allowing all sectors of Brazilian society to have effective access to the benefits generated by its use.

3. The National Biodiversity Policy applies to the components of biological diversity located in the areas under national jurisdiction, including the national territory, continental platform and the exclusive economic zone; and to the processes and activities carried out under its jurisdiction or control, regardless of where its effects might take place, be they within or beyond the national borders.

4. The National Biodiversity Policy is regulated by the following directives:

I - the establishment of cooperation with other nations, directly or, when necessary through agreements, and with the competent international organizations with respect to areas outside national jurisdiction, particularly on its borders, in Antarctica, on the high seas, and in the sea depths, and in relation to migratory species, besides other issues of mutual interest for the conservation and sustainable use of biological diversity;

II - national efforts for the conservation and the sustainable use of biological diversity must be integrated with pertinent sectoral and intersectoral plans, programmes and policies, in such a way as to be complementary and harmonic;

III - substantial investments are required for the conservation of biological diversity, which will result in environmental, economic and social benefits;

IV - it is vital to foresee, prevent and combat the origin of the causes of the perceptible reduction or loss of biological diversity;

V - the sustainability of the use of components biodiversity components must be determined from economic, social and environmental standpoints, especially regarding the maintenance of biodiversity.

VI - ecosystem administration and management must be decentralized at the appropriate level, and ecosystem administrators and managers must consider the current and future effects of their activities on both neighbouring and other ecosystems;

VII - ecosystem administration and management must be implemented at the appropriate spatial and temporal scales, and their objectives should be long-term, while recognizing that changes are inevitable;

VIII - ecosystem administration and management must focus on structures, processes and functional dynamics of ecosystems, using adaptive managerial and administrative practices, and securing intersectoral cooperation.

IX - it is necessary to create the conditions allowing for access to genetic resources and their use in a way which is environmentally-friendly by other Contracting Parties of the Convention on Biological Diversity, avoiding as such the imposition of restrictions contrary to the objectives of the Convention.

### **On the General Objective of the National Biodiversity Policy**

5. The general objective of the National Biodiversity Policy is to promote, in an integrated way, the conservation of biodiversity and the sustainable use of its components, with the fair and equitable distribution of the benefits deriving from the use of genetic resources, of the components of the genetic patrimony, and of the associated traditional knowledge.

### **On the Components of the National Biodiversity Policy**

6. The components and specific objectives of the National Biodiversity Policy (listed below) were established on the basis of the Convention on Biological Diversity and should be considered the thematic axes guiding its implementation.

7. When relevant, the directives established for the Policy components should be considered for each of the Brazilian biomes.

8. When implementing the Policy, specific directives for each biome should be established through Action Plans.

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## 9. The National Biodiversity Policy covers the following components:

I - Component 1 – Knowledge of Biodiversity: Includes directives concerning the generation, organization, and availability of information to promote an understanding of the components of the country's biodiversity and which support its administration and management, as well as directives related to biological inventories, ecological research and studies of traditional knowledge;

II - Component 2 – Biodiversity Conservation<sup>1</sup>: Includes directives for *in situ* and *ex situ* conservation of genetic variability, for ecosystems, including environmental services and species, especially those which are threatened or have economic potential, as well as directives for the implementation of economic and technological tools for biodiversity conservation.

III - Component 3 – Sustainable Use of Biodiversity Components: Includes directives for the sustainable use of biodiversity and for biotechnology, including the strengthening of public administration and management, the establishment of economic tools and mechanisms, and support for sustainable practices and businesses which guarantee the maintenance of biodiversity and ecosystem functioning, taking into account not only the economic value, but also the social and cultural values of biodiversity.

IV - Component 4 – Biodiversity Monitoring, Assessment, and Impact Prevention and Mitigation: Includes directives to strengthen monitoring systems and assessment, and the prevention and mitigation of impacts on biodiversity, as well as promotion of the restoration of degraded ecosystems and overexploited components of biodiversity.

V - Component 5 - Access to Genetic Resources and Associated Traditional Knowledge and Benefit-Sharing: Includes directives to promote controlled access for the accrual of the value of biodiversity components through scientific research and technological development, and the distribution of the benefits resulting from genetic resources and associated traditional knowledge, in a way that they is justly and equitably shared with Brazilian society, including indigenous peoples, the *quilombolas* and other local communities.

VI - Component 6 - Education, Public Awareness, Information and Publicity about Biodiversity: Defines directives for public education and awareness and for the administration and management and divulgation of information on biodiversity, with the participation of society, including indigenous peoples, *quilombolas* and other local communities, with respect to the conservation of biodiversity, the sustainable use of its components and the just and equitable distribution of benefits resulting from the use of genetic resources, of the components of the genetic patrimony and the traditional knowledge associated with biodiversity.

VII - Component 7 – Legal and Institutional Strengthening for Biodiversity Administration and Management: Synthesizes the means to implement the Policy; it presents directives for strengthening the infrastructure, training and securing human resources, access to and the transfer of technology, incentives for the creation of financing mechanisms, strengthening of the legal framework, integration of public policies and for international cooperation.

### **On Component 1 of the National Biodiversity Policy – Knowledge of Biodiversity**

10. General Objectives: Generate, organize and make available information for the administration and management of biodiversity found in the Brazilian biomes, and its role in the functioning and maintenance of terrestrial and aquatic ecosystems in Brazil, including jurisdictional waters. To foster knowledge about Brazilian biodiversity, its distribution, determinants, values, ecological functions and economic potential.

10.1. First Directive: Inventories and the characterization of biodiversity. Survey, identify, classify and characterize biodiversity components (ecosystems, species and intra-specific genetic diversity) to generate information to support proposals for its administration and management.

#### Specific Objectives:

10.1.1. To create and implement a national biological inventory program integrated with studies of the physical environment, giving emphasis to the megadiverse taxonomic groups covering the different habitats and geographic regions of the country. Inventories should preferably be carried out within priority conservation areas, using minimum standardized protocols, generating georeferenced collections of biological specimens.



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10.1.2. To promote and support taxonomic research on all species occurring in Brazil to characterize and classify Brazilian biodiversity.

10.1.3. To create a coordinated and freely-accessible national system for registering species occurring in all areas under Brazil's jurisdiction; fostering, supporting, consolidating and integrating regional and national scientific reference collections.

10.1.4. To create, and maintain current, lists of the country's endemic and threatened species, fully integrated with state and regional assessments.

10.1.5. To promote research on the ecology, genetic diversity and population viability of endemic and threatened species of plants, animals, fungi and micro-organisms, in order to provide the scientific basis for promoting their recovery, regeneration, sustainable use, and conservation.

10.1.6. To promote research on the genetic, biological, and ecological characteristics of species considered to be of interest for conservation and sustainable socioeconomic use, especially native species of economic importance or of value to indigenous peoples, *quilombolas* and other local communities.

10.1.7. To map the diversity and distribution of local varieties or races of domesticated species and their wild relatives.

10.1.8. To inventory and map alien invasive and problem species, and the ecosystems in which they have been introduced, to allow for impact studies and measures for their control.

10.1.9. To promote the systematic evaluation of the methodologies used in inventories and surveys.

10.1.10. To establish mechanisms to make obligatory biodiversity inventories of special environments (for example, iron-rich savannas, residual plateaus) highly threatened by mining or other forms of economic exploitation.

10.1.11. To foster the training and qualification of taxonomists and their assistants (parataxonomists).

10.1.12. To promote the recovery and synthesis of the information existing in Brazilian scientific collections, and especially in theses and dissertations.

10.1.13. To promote the mapping of biodiversity throughout the national territory; creating maps and distributing them widely, while maintaining due control of information considered to be of national interest.

10.1.14. To promote repatriation of information on Brazilian biodiversity existing abroad.

10.2. Second Directive: Promotion of ecological research and studies on the role of living beings in ecosystem functioning, and on the impacts due to global changes in biodiversity.

### Specific Objectives:

10.2.1. To promote research to determine the ecological properties of species and the modes of synergy between them, with a view to understanding their importance in ecosystems.

10.2.2. To promote studies, preferably in priority areas for biodiversity conservation and in protected areas, regarding the functioning of ecosystems and communities, the status and dynamics of populations, and also evaluation of stocks and the management of biodiversity components.

10.2.3. To strengthen and expand long-term ecological research, especially in protected areas.

10.2.4. To promote research to determine the effects of global climate change on biodiversity and on the role of species in the flux of energy and matter, and on ecosystem homeostasis.

10.2.5. To promote research on the effects of environmental changes caused by habitat fragmentation on biodiversity loss, with emphasis on lesser known and degraded areas, and loss of genetic resources.



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10.2.6. To promote the development and improvement of ecosystems modelling tools.

10.2.7. To promote and support research on the impact of environmental changes on agriculture, farming and human health with emphasis on the acquisition of data for risk analyses by the competent environmental, sanitary and phytosanitary institutions.

10.3. Third Directive: The Promotion of Research for the Administration and Management of Biodiversity. Support for the generation of information and knowledge on biodiversity components in the different biomes to provide the scientific basis for the administration and management of biodiversity.

Specific Objectives:

10.3.1. To promote and support research in conservation biology for the different ecosystems of the country, and particularly on biodiversity components which are threatened.

10.3.2. To promote and support the development of research and technology for the conservation and sustainable use of biodiversity, and especially on the propagation and development of native species with potential for medical, agricultural and industrial use.

10.3.3. To develop studies for the conservation, management and the sustainable use of biodiversity in the "Legal Reserves" of agricultural land, as established by the Forest Code, Law No.4771, 15<sup>th</sup> September 1965.

10.3.4. To foster and support research on methods and practices for use of biodiversity for the prevention of, restoration, and recovery of areas undergoing desertification, fragmentation or environmental degradation.

10.3.5. To promote and support research on wildlife health and establish mechanisms for its incorporation into the administration and management of biodiversity.

10.3.6. To promote and support research to help the prevention, eradication and control of alien invasive and problem species which threaten biodiversity, agricultural activities, cattle-farming, silviculture, aquaculture, and human health.

10.3.7. To support studies on the value of biodiversity and of associated environmental services.

10.3.8. To support studies which promote the sustainable use of biodiversity to the benefit of indigenous peoples, *quilombolas* and other local communities, ensuring their direct participation.

10.3.9. To update the evaluation of priority areas and actions for the conservation, sustainable use and sharing of benefits from biodiversity.

10.3.10. To define multidisciplinary research strategies on biodiversity.

10.4. Fourth Directive: Promoting Research on the Traditional Knowledge of Indigenous Peoples, *Quilombolas* and Other Local Communities. Support for studies for the organization of information and procedures related to traditional knowledge about biodiversity, with prior, informed consent from the populations involved, in accordance with the current legislation, and with the specific objectives established in the Second Directive of component 5, item 14.2.

Specific Objectives:

10.4.1. To develop studies and methodologies for the elaboration and implementation of economic instruments and specific legal régimes to enable just and equitable benefit-sharing, economic and other types of compensation for the holders of associated traditional knowledge in accordance with the demands they themselves define.

10.4.2. To develop studies on the knowledge, innovations and practices of Indigenous peoples, *quilombolas* and other local communities, respecting, recovering, maintaining, and preserving the cultural values involved in the knowledge, innovations and practices, and ensuring confidentiality of the information obtained whenever required by the holders or when its dissemination may damage the social, environmental or cultural integrity of the communities or people involved.

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10.4.3. To support studies and initiatives of Indigenous peoples, *quilombos* and other local communities to systematize knowledge, innovations and practices, with emphasis on themes related to conservation, sustainable use and valuation of, besides ways to add value to, biodiversity resources.

10.4.4. To promote studies and the initiatives of different sectors of the society regarding the understanding, valuation, conservation and sustainable use of, and ways to add value to, the traditional knowledge of Indigenous peoples, *quilombolas* and other local communities, ensuring their direct participation.

10.4.5. To promote initiatives which bring together Indigenous peoples, *quilombolas* and other local communities and scientific communities to discuss and exchange information and ideas on the scientific and legal aspects of biodiversity research, and bioprospection activities.

10.4.6. To promote the dissemination of information among Indigenous peoples, *quilombolas* and other local communities about research results which involve their knowledge, besides the juridical institutes related to their rights.

10.4.7. To support and foster research on traditional knowledge (understandings, practices and innovations) of Indigenous peoples, *quilombolas* and other local communities, ensuring their socio-cultural integrity, their ownership and rights of use of their lands.

### **On Component 2 of the National Biodiversity Policy – Conservation of Biodiversity**

11. General Objective: To promote *in situ* and *ex situ* conservation of biodiversity components, including genetic variability, ecosystems and species, and of the environmental services maintained by biodiversity.

11.1. First Directive: Conservation of ecosystems. Promotion of *in situ* conservation measures for biodiversity and ecosystems in areas outside of protected areas, maintaining evolutionary and ecological processes, besides the sustainability of environmental services.

#### Specific Objectives:

11.1.1. To strengthen capacity for the control and elimination of illegal and environmentally-degrading activities: deforestation, habitat destruction, hunting, capture and trade of wildlife, and the collection of wild plants.

11.1.2. To develop studies and participatory methodologies contributing to the definition of the extent and use of buffer zones for protected areas.

11.1.3. To plan, promote, establish and consolidate ecological corridors and other forms of landscape connectivity for the planning, administration and management of regional biodiversity, integrated and compatible with "Legal Reserves", "Areas of Permanent Preservation", and other protected areas.

11.1.4. To support measures for economic and ecological zoning at the municipal, regional, state and national levels and in hydrographical basins, focused on the establishment of protected areas, with the results being transparent, scientifically-rigorous and socially-controlled, and based on a minimum set of common directives and methodological guidelines.

11.1.5. To promote and support studies for improving settlement and land use systems, assuring biodiversity conservation and its sustainable use in areas outside of protected areas, including the lands of Indigenous peoples, *quilombolas* and other local communities, with special attention given to buffer zones and protected areas.

11.1.6. To propose an agenda for the implementation of priority areas and actions for biodiversity conservation in each Brazilian state and biome.

11.1.7. To promote and support biodiversity conservation within and around Indigenous lands, *quilombolas* and other local communities, respecting their ethno-environmental use of ecosystems.

11.1.8. To strengthen incentive mechanisms for the private sector and local communities in the adoption of initiatives promoting biodiversity conservation.

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11.1.9. To create incentive mechanisms for the restoration and protection of "Areas of Permanent Preservation" and "Legal Reserves" established by Law.

11.1.10. To create strategies for the conservation of pioneer ecosystems, securing their function and representation.

11.1.11. To establish a national initiative for the conservation and recuperation of the biodiversity of inland waters and coastal and marine zones.

11.1.12. To articulate actions with the institutions responsible for sanitary and phytosanitary control, for the exchange of information necessary to impede the entry of alien invasive species which can affect biodiversity.

11.1.13. To promote the prevention, eradication and control of alien invasive species that can affect biodiversity.

11.1.14. To promote conservation actions for the maintenance of evolutionary and ecological processes and sustainable environmental services.

11.1.15. To conserve the biodiversity of ecosystems, including those under intense economic production, as insurance against climate change and unpredictable economic or environmental changes, preserving the capacity of biodiversity components to adapt to change, including climate change.

11.2. Second Directive: Ecosystem Conservation in Protected Areas. Promotion of *in situ* conservation measures for the biodiversity in ecosystems in protected areas, maintaining evolutionary and ecological processes, the sustainability of environmental services, and ecosystem integrity.

### Specific Objectives:

11.2.1. To support and promote the consolidation and expansion of the *Sistema Nacional de Unidades de Conservação da Natureza - SNUC* [National System of Protected Areas – SNUC] particularly of strictly protected units to guarantee representation of ecosystems and ecoregions, the sustainability of environmental services, and ecosystem integrity.

11.2.2. To promote and support the development of economic and technical tools for the effective implementation of protected areas.

11.2.3. To support measures of the official organ responsible for phytosanitary measures to avoid the introduction of pests and alien invasive species in and around protected areas.

11.2.4. To foster the establishment of participatory administration and management processes promoting decisions taken with the involvement of the public sector at the municipal, state and federal levels and organized sectors of civil society, in accordance with the law regulating the *Sistema Nacional de Unidades de Conservação da Natureza - SNUC* [National System of Protected Areas – SNUC].

11.2.5. To foster the participation of the private sector in *in situ* conservation, emphasizing the creation of *Reservas Particulares do Patrimônio Natural - RPPN* [Private Natural Heritage Reserves – RPPN], and in the sponsorship of public protected areas.

11.2.6. To promote the creation of strictly protected areas and protected areas of sustainable use, taking into account representation, connectivity and complementarity in relation to the *Sistema Nacional de Unidades de Conservação da Natureza - SNUC* [National System of Protected Areas – SNUC].

11.2.7. To develop additional mechanisms to support strictly protected areas and protected areas of sustainable use, which include income from environmental services.

11.2.8. To promote the development and implementation of an action plan to resolve conflicts due to the overlap of protected areas, Indigenous Lands and Territories and land traditionally occupied by *quilombolas*.

11.2.9. To foster and support the creation of marine protected areas of different categories of protection and sustainable use.



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11.2.10. To conserve adequate and representative populations of all biodiversity, of the national genetic resources (including domesticated species), of the diversity of ecosystems, and of the Brazilian fauna and flora, (including threatened species) as a strategic reserve for the future.

11.3. Third Directive: *In Situ* Species Conservation. Consolidation of measures for the *in situ* conservation of the species comprising biodiversity, with the aim of reducing genetic erosion, promoting their sustainable use and conservation, especially of threatened species, as well as protecting evolutionary and ecological processes, and maintaining environmental services.

Specific Objectives:

11.3.1. To create, identify, and establish initiatives, programmes and projects for conservation and recuperation of endemic or little-known threatened species.

11.3.2. To identify areas for the creation of protected areas based on the needs of threatened species.

11.3.3. To strengthen and disseminate incentive mechanisms for private companies and communities which develop conservation projects for threatened species.

11.3.4. To implement and perfect authorization, vigilance and supervision systems for the collection of biological materials and genetic resources.

11.3.5. To promote the regulation and implementation of genetic reserves for the protection of local varieties of wild species used in extractivism, agriculture and aquaculture.

11.3.6. To implement actions to increase the protection of threatened species in and outside of protected areas.

11.3.7. To promote and perfect management actions for problem species, the populations of which are out of control.

11.3.8. To establish mechanisms making obligatory the inclusion, partial or total, of special environments containing high degrees of endemism or threatened species in the fully protected zones of the protected areas of sustainable use.

11.3.9 To establish measures for the protection of threatened species in Indigenous Lands and Territories and *quilombolas*.

11.4. Fourth Directive: *Ex Situ* Species Conservation. Consolidation of measures for *ex situ* species conservation and of their genetic variability, with emphasis on the threatened species and those of economic potential in accordance with the specific objectives established in directives of Component 5.

Specific Objectives:

11.4.1. To develop studies for *ex situ* species conservation, with emphasis on threatened species and species of potential economic use.

11.4.2. To develop, promote and support studies and establish methodologies for conservation and maintenance of germplasm banks for native and exotic species, of scientific and commercial interest.

11.4.3. To promote the maintenance, characterization and documentation of plant, animal, fungus, and micro-organism germplasm held by scientific institutions, and in regional and national centres, in such a way as to establish nuclear collections to foster programmes for genetic improvement.

11.4.4. To integrate *ex situ* species conservation initiatives, plans and programmes with emphasis on threatened species and species of potential economic use.

11.4.5. To promote *ex situ* conservation with a view to obtaining matrices of plants and animals, including microorganisms, of threatened species or species with the potential for economic use to form representative live collections.





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- 11.4.6. To enlarge, strengthen and integrate the system of herbaria, zoological museums, ethnobotanical collections, wildlife breeding centres, botanical gardens, arboretums, tree nurseries, zoological and botanical collections, native plant nurseries, micro-organism breeding collections, plant germplasm banks, animal breeding nuclei, zoos, and aquariums and oceanariums.
- 11.4.7. To integrate botanical gardens, zoos and wildlife breeding centres with national plans for the conservation of plant and animal genetic resources and environmental research, especially in areas of high endemism.
- 11.4.8. To create and strengthen wild plant and animal rescue and selection centres, integrating them with the system of botanical gardens and zoos, to transform them into flora and fauna conservation centres.
- 11.4.9. To create centres and promote initiatives for the breeding of threatened species, using techniques such as artificial insemination and *in vitro* fertilization.
- 11.4.10. To stimulate participation of the private sector in the strategy for *ex situ* biodiversity conservation.
- 11.4.11. To promote initiatives and measures for enriching the genetic varieties available in germplasm banks, establishing as such representative genetic collections (animal, plant and micro-organisms).
- 11.4.12. To set up and support collecting initiatives in order to enlarge geographic representation in germplasm banks.
- 11.4.13. To create and maintain regional germplasm banks and base collections for the conservation of genetic varieties, promoting especially the conservation of under-represented native species, local varieties, wild relatives, and species which are rare, endemic, threatened or of economic potential.
- 11.4.14. To establish initiatives for the collection, reintroduction and exchange of socio-economically important native species, including local varieties of domesticated species and threatened species in order to maintain their genetic variability.
- 11.4.15. To support and subsidize the conservation and expansion of germplasm banks for introduced species of economic or ornamental importance, maintained by research institutions, botanical gardens, zoos and private initiatives.
- 11.4.16. To expand national programmes for collecting and conserving soil microorganisms of economic interest.
- 11.4.17. To integrate *ex situ* conservation measures with those involved in the administration and management of access to genetic resources and the sharing of the benefits derived from the use of traditional knowledge.
- 11.4.18. To support actions taken by the official organs for sanitary and phytosanitary control in relation to pests and invasive species.
- 11.5. Fifth Directive: Technological and Economic Tools for Biodiversity Conservation. The development of technological and economic tools for the conservation of biodiversity.

### Specific Objectives:

- 11.5.1. To promote studies evaluating the effectiveness of economic instruments for biodiversity conservation.
- 11.5.2. To create and consolidate specific legislation concerning the use of economic instruments, which aim to stimulate biodiversity conservation, associated with the process of tax reform.
- 11.5.3. To develop legal and economic instruments for the reduction of human pressures on biodiversity, associated with the process of tax reform.
- 11.5.4. To develop economic and legal instruments for charging the public, when appropriate, for the use of environmental services, associated with the process of tax reform.
- 11.5.5. To promote the internalisation of the costs and benefits of biodiversity conservation (goods and services) in private and public accounting.

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11.5.6. To stimulate mechanisms for reverting the benefits of public billing for environmental biodiversity services to biodiversity conservation.

11.5.7. To create and set up specific taxation and credit mechanisms and administrative facilities for rural property owners who maintain intact their "Legal Reserves" and "Areas of Permanent Preservation".

11.5.8. To improve existing legal instruments that stimulate biodiversity conservation through the *Imposto Sobre Circulação de Mercadorias e Sobre Prestação de Serviços de Transporte Interestadual e Intermunicipal e de Comunicação – ICMS* [Tax on the Circulation of Commercial Goods and Transport Services Among States and Municipalities, and on Communications], and stimulate their adoption in all the states of the Federation, and their application in the administration and management of biodiversity.

### **On Component 3 of the National Biodiversity Policy – The Sustainable Use of Components of Biodiversity**

12. General Objective: To promote mechanisms and instruments for all governmental and non-governmental sectors, public and private, involved in the use biodiversity components, in order to guarantee sustainability, and the consideration of not only economic value, but also the cultural, social and environmental values of biodiversity.

12.1. First Directive: Administration and Management of Biotechnology and Biosafety. Elaboration and implementation of economic and legal mechanisms, which stimulate the development of a competitive national biotechnology sector of excellence, taking into account biosafety and opportunities for the sustainable use of the country's genetic resources, in accordance with the current legislation, and the specific objectives and guidelines established in Component 5.

Specific Objectives:

12.1.1. To elaborate and implement ethical codes for biotechnology and bioprospection in a way which is participatory, involving all segments of Brazilian society, and based on the current legislation.

12.1.2. To consolidate regulations for the use of genetically modified products, based on current legislation, in conformity with the precautionary principle, and with analyses of potential risks of impacts on biodiversity, the environment, and health, involving the different segments of Brazilian society, guaranteeing transparency and social control as well as civil, criminal and administrative liability for the unauthorized introduction and/or dissemination of genetically modified organisms which may involve risks to the environment and human health.

12.1.3. To consolidate the structuring of collegiate organs, in terms of their composition as well as in their *modus operandi*, which are responsible for the use of biodiversity, especially the *Comissão Técnica Nacional de Biossegurança – CTNBio* [National Technical Commission for Biosafety – CTNBio] and the *Conselho de Gestão do Patrimônio Genético – CGEN* [Council for the Administration and Management of Genetic Patrimony].

12.1.4. To foster the creation and strengthening of national institutions, and national research groups, public and private, specialized in bioprospection, biotechnology and biosafety, as well as support studies and projects for improving knowledge on biosafety and the evaluation of conformity of genetically modified organisms and their derivatives.

12.1.6. To support and foster the formation of national enterprises dedicated to technological and scientific research, the accrual of value, to conservation and to the sustainable use of biological and genetic resources.

12.1.7. To support and foster the formation of partnerships between private and public scientific institutions, including national technological enterprises, and their foreign associates, aiming at establishing and consolidating chains of value accrual, commercialisation, and the return of the benefits resulting from biodiversity deals.

12.1.8. To support and foster the training of postgraduates specialized in the administration of sustainable business in biodiversity, aiming at their recruitment by private and public systems active in the sector, giving the country the conditions necessary for interaction with its foreign partners.

12.1.9. To require environmental licensing for activities and businesses that make use of effectively or potentially polluting Genetically Modified Organisms – GMOs, and their derivatives, within the terms of current legislation.

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12.1.10. To support the implementation of infrastructure and capacity-building of human resources in public organs and private institutions, for evaluating the conformity of biological material, the certification and labelling of products, environmental licensing, and environmental impact studies.

12.2. Second Directive: Administration and Management of the Sustainable Use of Biological Resources. Structuring of the regulating systems for the use of biodiversity resources.

Specific Objectives:

12.2.1. To create and consolidate management and regulation programmes for activities concerning the sustainable use of biodiversity.

12.2.2. To promote territorial ordinance and the administration and management of areas under exploitation for environmental resources, according to their carrying capacity, and integrated with efforts for *in situ* biodiversity conservation.

12.2.3. To implement actions that respond to the demands of Indigenous peoples, *quilombolas* and other local communities regarding their priorities for the sustainable use and conservation of biological resources within their lands, safeguarding inherent principles and legislation, and assuring their sustainability in their original habitats.

12.2.4. To develop and support programmes, actions, and measures promoting the conservation and sustainable use of agro-biodiversity.

12.2.5. To promote policies and programmes which accrue value to biological resources and their sustainable use.

12.2.6. To promote support programmes for small and medium-sized businesses which use biodiversity resources in a way which is sustainable.

12.2.7. To promote instruments which ensure that tourist activities are compatible with the conservation and sustainable use of biodiversity.

12.2.8. To promote, in an integrated way and when legally permissible, the sustainability of timber and non-timber forest resources, fisheries and wildlife resources, privileging certified management, restoration, multiple use, and the maintenance of stocks.

12.2.9 To adapt to Brazilian conditions and apply the principles of the Ecosystem Approach to the management of biodiversity.

12.3. Third Directive: Economic and Technological Instruments, and Incentives for Sustainable Practices and Deals in the Use of Biodiversity. Establishment of mechanisms, both fiscal and financial, that stimulate productive business deals and initiatives in the sustainable use of biodiversity.

Specific Objectives:

12.3.1. To create and consolidate specific legislation concerning the use of economic instruments to stimulate the sustainable use of biodiversity.

12.3.2. To create and strengthen credit and fiscal incentives for the creation and application of technology, for enterprises and for programmes related to the sustainable use of biodiversity.

12.3.3. To promote economic incentives for the development and the consolidation of practices and business deals in strictly protected areas and protected areas of sustainable use, in *quilombolas*, Indigenous lands, and in all other areas under formal public protection.

12.3.4. To promote the internalisation of the costs and benefits of the use of biodiversity (goods and services) in public and private accounting.



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12.3.5. To identify, evaluate and promote experiences, practices, technologies, business deals, and markets for products derived from the sustainable use of biodiversity, by providing incentives for the voluntary certification of products and processes in a way which is participatory and integrated.

12.3.6. To stimulate voluntary certification of products, processes, businesses, government organs, and other forms of productive organizations related to the sustainable use of biodiversity, as well as in government purchases.

12.3.7. To promote the trade of native species of commercial value in domestic and foreign markets, as well as the diversification of their sustainable use.

12.3.8. To stimulate interaction and the articulation of National Biodiversity Policy Agents with the business sector, in order to identify opportunities for deals in the sustainable use of biodiversity components.

12.3.9. To support local communities in the identification and development of sustainable practices and business deals.

12.3.10. To support, in an integrated way, the domestication and sustainable use of native flora and fauna, and of microorganisms with economic potential.

12.3.11. To foster the establishment of breeding centres for wildlife and nurseries of native plants for consumption and trade.

12.3.12. To stimulate the sustainable use of non-timber products and sustainable extractivism, with value added locally through production and commercialisation protocols.

12.3.13. To stimulate the establishment of projects based on the Clean Development Mechanism of the Kyoto Protocol which are in accordance with the conservation and sustainable use of biodiversity.

12.3.14. To stimulate policies to provide support for new enterprises which endeavour to conserve, accrue value to, and develop the sustainable use of genetic and biological resources.

12.4. Fourth Directive: The Use of Biodiversity in Protected Areas of Sustainable Use. The development of methods for the sustainable use of biodiversity and indicators to measure their success in protected areas of sustainable use.

### Specific Objectives:

12.4.1. To refine methods and create new technologies for the use of biological resources, eliminating or minimizing impacts on biodiversity.

12.4.2. To develop studies on the environmental, economic, social and cultural, sustainability of the use of biological resources.

12.4.3. To foster the development of projects on the conservation and sustainable use of biological resources by associations and communities in protected areas of sustainable use.

12.4.4. To establish criteria for the inclusion of resource recovery monitoring programs in any management plan for the exploitation of biological resources.

### **On Component 4 of the National Biodiversity Policy – Monitoring, Assessment, Prevention and Mitigation of Impacts on Biodiversity**

13. General Objective: To establish the means for the development of systems and procedures for the assessment and monitoring of, and the anthropic pressures on, Brazilian biodiversity so as to allow for the prevention or mitigation of the impacts.

13.1. First Directive: Biodiversity Monitoring. Monitoring of the pressures on and responses of biodiversity components.

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### Specific Objectives:

13.1.1. To support the development of methodologies and indicators for monitoring the biodiversity components of the different ecosystems and the environmental impacts responsible for their degradation, including those caused by problem species and the introduction of alien invasive species.

13.1.2. To establish and strengthen the use of indicator systems for permanent biodiversity monitoring, especially of threatened species, and in protected areas, Indigenous Lands and Territories and the lands of *quilombolas*, in areas of biological resource management, "Legal Reserves" and areas identified as of priority for conservation.

13.1.3. To integrate the biodiversity monitoring system with existing monitoring systems for other natural resources.

13.1.4. To expand, consolidate and update a surveillance and protection system for all biomes, including the already established *Sistema de Vigilância da Amazônia – SIVAM* [Surveillance System for the Amazon – SIVAM]. The system needs to be transparent and under social control, accessible to the communities involved, including local populations and educational and research institutions.

13.1.5. To create a monitoring system for the impacts of global change on species' distributions, abundance and extinction.

13.1.6. To establish a system for identifying, monitoring, and controlling the status of "Legal Reserves" and Areas of Permanent Preservation".

13.1.7. To stimulate the development of a programme of training and capacity-building in biodiversity monitoring for local populations.

13.1.8. To support actions carried out by official organs responsible for health and phytosanitary measures, which have as their aim the monitoring of alien invasive species, to prevent and mitigate impacts from pests and diseases on native biodiversity.

13.1.9. To carry out periodical mapping of the remaining natural areas in all biomes.

13.1.10. To promote self-monitoring and its publicity.

13.2. Second Directive: Assessment, Prevention and Mitigation of Impacts on Biodiversity Components. The establishment of procedures for the assessment, prevention and mitigation of impacts on biodiversity components.

### Specific Objectives:

13.2.1. To create the capacity for the evaluation of impacts on biodiversity within the organs responsible for environmental licensing.

13.2.2. To identify and evaluate public and non-governmental policies which negatively affect biodiversity.

13.2.3. To strengthen the systems for environmental licensing and the monitoring and control/elimination of illegal activities related to biodiversity.

13.2.4. To promote the integration of Economic and Ecological Zoning and environmental licensing, particularly by carrying out regional Strategic Environmental Assessments.

13.2.5. To support policies, programmes and projects for the assessment, prevention and mitigation of impacts on biodiversity, including those related to national, regional and local development plans and programmes.

13.2.6. To support studies and risk analyses and impact studies regarding the introduction of alien and potentially invasive species, potential problem species and others which threaten biodiversity, economic activities, population health, and the creation and implementation of control mechanisms.

13.2.7. To promote and perfect measures for the prevention, control and eradication of alien invasive and problem species.

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13.2.8. To support studies on the impacts of habitat fragmentation on biodiversity.

13.2.9. To develop environmental impact studies and implement control measures for the risks associated with biotechnological development on biodiversity, particularly regarding the use of genetically modified organisms which have the potential of causing significant environmental degradation.

13.2.10. To perfect procedures and norms for the collection of biological specimens for technical and scientific purposes in order to minimize their potential impact on biodiversity.

13.2.11. To develop initiatives which increase environmental awareness and for capacity-building in entities of civil society regarding monitoring and the control/elimination of illegal practices in the use of biological resources.

13.2.12. To promote, jointly with the various stakeholders, planning for the administration and management of biodiversity in agricultural frontiers, in order to minimize the environmental impacts.

13.2.13. To intensify and guarantee efficiency of efforts to combat illegal hunting and the illegal trade in species and agricultural varieties.

13.2.14. To develop tools for billing, and applying the financial resources resulting, for the use of environmental services in order to reduce anthropic pressures on biodiversity.

13.2.15. To support surveys of the sources of pollution and assessments of the levels of risk to biodiversity and biomes.

13.2.16. To support measures to identify and delimit critical areas, by hydrographical basin, for the conservation of biodiversity and water resources.

13.2.18. To support studies of impacts on biodiversity in different hydrographical basins, especially in riparian forest, headwaters, springs, other Areas of Permanent Preservation, and in areas considered critical for the conservation of water resources.

13.2.19. To establish criteria and mechanisms for determining the need for environmental impact studies, including Strategic Environmental Assessment for large-scale projects and enterprises, including those that may produce incremental impacts, that involve biological resources, and that make use of exotic species and genetically modified organisms when they have the potential of causing significant environmental degradation.

13.3. Third Directive: Recovery of Degraded Ecosystems and Over-exploited Components of Biodiversity. The establishing of instruments to promote the recuperation of degraded ecosystems and over-exploited components of biodiversity.

### Specific Objectives:

13.3.1. To promote studies and programmes for the conservation and recovery of threatened or over-exploited species and of ecosystems suffering anthropic pressures, in accordance with the principle that the "polluter pays".

13.3.2. To promote recovery, regeneration and control of vegetation cover and of related environmental services in areas modified, degraded or in the process of desertification, especially for the purposes of carbon sequestration, and in accordance with the principle that the "polluter pays".

13.3.3. To promote the recovery of over-exploited fishery stocks, especially through the identification of alternative species.

13.3.4. To encourage paleoecological research; strategic for the recovery of natural ecosystems.

13.3.5. To support Indigenous peoples, *quilombolas* and local communities in the elaboration and application of corrective measures for degraded areas where biodiversity has been lost.

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13.3.6. To identify and support initiatives, programmes, technologies and projects for the acquisition of germplasm, and the reintroduction and translocation of native species, especially those which are otherwise threatened, which include studies considering the maintenance of ecosystem health.

13.3.7. To support national and state initiatives which promote studies of, and the dissemination of technologies for, environmental restoration and the recovery of degraded areas with autochthonous native species.

13.3.8. To support the creation and consolidation of germplasm banks as an additional tool for the recuperation of degraded areas.

13.3.9. To create forest units in all the Brazilian states for the production and supply of seeds and seedlings for environmental restoration and recuperation of degraded areas which are supported by universities and research centres.

13.3.10. To promote mechanisms for the coordination of government initiatives and for supporting non-governmental initiatives for the conservation of areas which are recovering naturally.

13.3.11. To promote the recovery, revitalization and conservation of biodiversity in the various hydrographical basins, especially in riparian forest, headwaters, springs, other "Areas of Permanent Preservation", and in areas considered critical for the conservation of water resources.

13.3.12. To promote measures for the recovery and restoration of degraded ecosystems and over-exploited components of marine biodiversity.

### **On Component 5 of the National Biodiversity Policy - Access to Genetic Resources and to Associated Traditional Knowledge and Benefit Sharing**

14. General Objective: To allow controlled access to genetic resources, to the components of the genetic patrimony, and to the associated traditional knowledge, in order to accrue value through scientific research and technological development in such a way that Brazilian society, in particular the Indigenous peoples, *quilombolas* and other local communities, can share, in a just and equitable way, the benefits deriving from access to genetic resources, the components of the genetic patrimony, and to the traditional knowledge associated with biodiversity.

14.1. First Directive: Access to genetic resources and the sharing of benefits derived from their use. The establishment of a controlled system of access and just and equitable sharing of the benefits derived from the use of genetic resources and the components of genetic patrimony, which promote the accrual of value through scientific research and technological development and contribute to the conservation and sustainable use of biodiversity.

#### Specific Objectives:

14.1.1. To regulate and apply a specific law and other necessary legislation, elaborated with the broad and effective participation of Brazilian society, in particular the academic community, the business sector, Indigenous peoples, *quilombolas*, and other local communities, in order to normalize the relationship between the providers and users of genetic resources, of components of genetic patrimony and of associated traditional knowledge, and to establish the legal bases for just and equitable sharing of the benefits derived from their use.

14.1.2. To establish legal and institutional mechanisms for greater publicity and to make feasible the participation of civil society (non-governmental organizations, Indigenous nations, *quilombolas* and other local communities, the academic sector and the private sector) in councils, committees and collegiate organs which deal with the administration and management of genetic resources and component of the genetic patrimony.

14.1.3. To identify the needs and interests of Indigenous peoples, *quilombolas*, other local communities, land owners, national technology companies and economic agencies, government organs, and research and development institutions in the regulation of a system of access and just, equitable sharing of the benefits derived from the use of genetic resources and of the components of the genetic patrimony.

14.1.4. To define norms and procedures for the collection, storage and transport of genetic resources and the components of the genetic patrimony for research and bioprospection.

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14.1.5. To establish and perfect mechanisms of monitoring, social control and government negotiation for the commercialisation of products and processes arising from bioprospection, associated with the reversion of part of the benefits to public funds for research and the conservation and sustainable use of biodiversity.

14.1.6. To establish contracts for the economic exploitation of biodiversity that are registered and ratified by the Federal Government, containing clear and objective provisions for benefit sharing with the holders of the genetic resources, of the components of the genetic patrimony and of the associated traditional knowledge accessed.

14.1.7. To support actions for the implementation of the infrastructure and human and material resources in councils and collegiate organs which deal with the administration and management of the genetic patrimony, including the *Conselho de Gestão do Patrimônio Genético – CGEN* [Council for the Administration and Management of Genetic Patrimony – CGEN].

14.2. Second Directive: Protection of the Knowledge, Innovation and Practices of Indigenous peoples, *Quilombolas*, and of Other Local Communities, and the Sharing of the Benefits Derived from Traditional Knowledge Associated with Biodiversity. The development of mechanisms that guarantee the protection and just and equitable sharing of the benefits derived from the use of knowledge, innovation and practices of indigenous peoples, *quilombolas*, and other local communities, relevant to the conservation and sustainable use of biodiversity.

### Specific Objectives:

14.2.1. To establish and implement a legal régime *sui generis* for the protection of collective intellectual rights related to biodiversity of Indigenous peoples, *quilombolas*, and other local communities, which guarantees their broad participation.

14.2.2. To establish and implement economic instruments and a specific legal régime which will allow the just and equitable sharing of the benefits derived from access to the associated traditional knowledge, with economic and other types of compensation for the holders of the traditional knowledge associated with biodiversity, according to the demands defined by them, and safeguarding their cultural values.

14.2.3. To establish and implement mechanisms to respect, preserve, rescue, protect confidentiality and maintain the knowledge, innovations and practices of Indigenous peoples, *quilombolas*, and other local communities.

14.2.4. To regulate and implement mechanisms and legal instruments which guarantee the participation of Indigenous peoples, *quilombolas*, and other local communities in the negotiation process and the definition of protocols for access to knowledge, innovations and practices associated with biodiversity and the sharing of the benefits derived from its use.

14.2.5. To develop and implement mechanisms *sui generis* for the protection of traditional knowledge and the just and equitable sharing of benefits by Indigenous peoples, *quilombolas*, and other local communities that detain the knowledge associated with biodiversity with their participation and preserving their values and interests.

14.2.6. To establish initiatives directed towards the administration, management and participatory control by indigenous populations, *quilombolas* and other local communities of the identification and registration, when relevant, of traditional knowledge, innovations and practices associated with the use of biodiversity components.

14.2.7. To establish, when relevant and with the direct participation of the traditional knowledge-holders, mechanisms for registering the traditional knowledge, innovations and practices, associated with biodiversity, of Indigenous peoples, *quilombolas* and other local communities, and their potential for commercial use, as one of the forms of proof as to the origin of this knowledge.

14.2.8. To promote the recognition and value the rights of Indigenous peoples, *quilombolas* and other local communities regarding the traditional knowledge associated with biodiversity and to the mutually dependent relationship between ethnocultural diversity and biodiversity.

14.2.9. To elaborate and implement a code of ethics for work with Indigenous peoples, *quilombolas* and other local communities, with their participation.



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14.2.10. To guarantee recognition of the collective intellectual rights of Indigenous peoples, *quilombolas* and other local communities, and the necessary sharing of the benefits derived from the use of the traditional knowledge associated with biodiversity within their lands.

### **On Component 6 of the National Biodiversity Policy - Education, Public Awareness, Information and Publicity about Biodiversity**

15. General Objective: To organize, integrate, and divulge information about biodiversity, its potential for development and the need for its conservation and sustainable use, as well as for the sharing of benefits derived from the use of genetic resources, the components of genetic patrimony, and the associated traditional knowledge, at the various educational levels as well as to the population and decision-makers.

15.1. First Directive: Information and Publicity Systems. Development of a national system for divulging information about biodiversity.

Specific Objectives:

15.1.1. To divulge information to all sectors of society about Brazilian biodiversity.

15.1.2. To facilitate access to information and divulge information for decision-making by different producers and users of goods and services derived from biodiversity.

15.1.3. To institute and maintain current an information network on the administration and management of biodiversity, promoting and facilitating access to an electronic database, integrating it with already existing initiatives.

15.1.4. To identify and catalogue the country's biological collections (herbaria and zoological, microorganism and germplasm collections), with subsequent standardisation and integration of the information resulting.

15.1.5. To map and maintain databases on local varieties, wild relatives of cultivated plants, and cultivars of current or potential use.

15.1.6. To institute and implement mechanisms to facilitate access to information about collections of the components of Brazilian biodiversity which exist abroad and, when appropriate, the repatriation of material associated with this information.

15.1.7. To support and publicize experiences in conservation and the sustainable use of biodiversity, including those of Indigenous peoples, *quilombolas* and other local communities, with their consent, and safeguarding their intellectual property rights and those of national interest.

15.1.8. To divulge other economic, financial and legal instruments related to the administration and management of biodiversity.

15.1.9. To organize, promote the production of, distribute and facilitate access to institutional and educational materials about biodiversity and ethnic and cultural aspects related to it.

15.1.10. To promote the elaboration and organization of case studies and lessons learnt regarding the sustainable administration and management of biodiversity.

15.1.11. To create mechanisms to monitor the use of data, access to database networks, and the users of these networks, with a view to guaranteeing the sharing of benefits derived from the use of the information available.

15.1.12. To promote and support national scientific publication programmes about themes related to biodiversity, and encourage their full use by educational and research institutions.

15.2. Second Directive: Public Awareness. To carry out programmes and campaigns to raise awareness about biodiversity.

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## Specific Objectives:

15.2.1. To promote and support national, regional and local campaigns to increase appreciation of, and divulge information about, biodiversity, highlighting the importance and value of the heterogeneity of the different biomes for the conservation and sustainable use of biodiversity.

15.2.2. To promote national campaigns to increase the appreciation of cultural diversity and traditional knowledge concerning biodiversity.

15.2.3. To promote campaigns directed at the productive sectors, especially agricultural and livestock, and the fisheries, mining sectors, and the research sector, about the importance of "Legal Reserves" and Areas of Permanent Preservation for biodiversity conservation.

15.2.4. To create new stimuli, such as awards and contests, that promote the involvement of the population in the defence of threatened species and of the biomes suffering anthropic pressure, taking into account specific regional characteristics.

15.2.5. To promote and support awareness and capacity-building by decision-makers, influential people and the business sector concerning the importance of biodiversity.

15.2.6. To encourage actions by organized civil society to carry out environmental education initiatives related to biodiversity.

15.2.7. To divulge information about the traditional knowledge, innovations and practices of indigenous peoples, *quilombolas*, and other local communities, and their importance to the conservation of biodiversity, with their consent when appropriate.

15.2.8. To raise the awareness of Indigenous peoples, *quilombolas* and other local communities about the importance of their knowledge of biodiversity to allow for conservation measures, the sustainable use of biodiversity, and the sharing of the benefits derived from the use of traditional knowledge associated with biodiversity.

15.2.9. To publicize the importance of the interaction between the administration and management of biodiversity and public health.

15.2.10. To promote awareness about the administration and management of biodiversity in areas of public use.

15.2.11. To develop, implement and publicize the use of indicators that allow for the assessment and monitoring of changes in society's awareness about biodiversity.

15.2.12. To promote the integration of measures for the control/elimination of illegal activities with environmental education programmes about biodiversity.

15.2.13. To promote courses and training programmes for journalists about the concepts of biodiversity administration and management.

15.3. Third Directive: The Incorporation of Themes Related to the Conservation and Sustainable Use of biodiversity in Education. The integration of themes related to biodiversity administration and management in educational processes.

## Specific Objectives:

15.3.1. To strengthen the use of the theme of biodiversity as a content of the cross-cutting environmental theme proposed for curricular parameters and guidelines in the policies for teacher refresher courses.

15.3.2. To promote articulation between the environmental agencies and educational institutions for the continual updating of information on biodiversity.

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- 15.3.3. To introduce the theme of biodiversity into community extension programmes.
- 15.3.4. To incorporate the principles of the Convention on Biological Diversity and ethno-biodiversity into formal education, attending to the principle of differentiated education for Indigenous peoples, *quilombolas* and other local communities.
- 15.3.5. To encourage partnerships, research and other activities among universities, non-governmental organizations, professional organizations and the private sector for continuous improvement of professional educators.
- 15.3.6. To promote initial and regular ongoing training of professional environmental educators about issues related to biodiversity.
- 15.3.7. To promote the training of rural extension and health agents about the theme of biodiversity.
- 15.3.8. To promote initiatives for the articulation of institutions involved with environmental education (teaching, research and conservation institutions and of civil society) by means of a network of environmental education centres specifically to deal with biodiversity themes.
- 15.3.9. To establish integration among ministries and other government organs for articulation of educational policies for the administration and management of biodiversity.
- 15.3.10. To strengthen the *Política Nacional de Educação Ambiental* [National Environmental Education Policy].

### **On Component 7 of the National Biodiversity Policy - Legal and Institutional Strengthening for the Administration and Management of Biodiversity**

16. General Objective: To promote the means and conditions for strengthening the infrastructure for research, administration and management, access to technology and technology transfer, capacity-building and securing human resources, access to financing mechanisms, international cooperation and for the legal adjustments necessary for biodiversity administration and management and the integration and harmonization of sectoral policies pertinent to biodiversity.

16.1. First Directive: Strengthening Infrastructure for Research and the Administration and Management of Biodiversity. The strengthening and amplification of the infrastructure of the Brazilian institutions, public and private, involved with the knowledge and the administration and management of biodiversity.

Specific Objectives:

16.1.1. To recover the capacity of the *Sistema Nacional do Meio Ambiente - SISNAMA* (National Environment System - SISNAMA) to execute their mission relative to licensing and the elimination/control of illegal activities concerning biodiversity.

16.1.2. To refine the definitions the responsibility of the various government organs such as to prevent possible conflicts of competency in the application of environmental legislation pertinent to biodiversity.

16.1.3. To strengthen the system of protected areas conservation units, and their governance within the *Sistema Nacional do Meio Ambiente - SISNAMA* (National Environment System - SISNAMA).

16.1.4. To encourage initiatives for creating permanent field research bases in strictly protected areas in each of the Brazilian biomes.

16.1.5. To promote the strengthening of the infrastructure and modernization of the Brazilian institutions involved with inventorying and characterizing biodiversity, such as zoological, botanical and microorganism collections, germplasm banks and animal breeding centres.

16.1.6. To strengthen scientific institutions with research programmes, creating, when necessary, specific centres in each of the biomes in order to strengthen research on biological resources and their applications.

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16.1.7. To adapt the infrastructure of the institutions that work with genetic resources, components of genetic patrimony and traditional knowledge to allow the secure conservation, in the short-, medium- and long-term, of species of socioeconomic interest and the cultures of Indigenous peoples, *quilombolas*, and other local communities of the country.

16.1.8. To support research and infrastructure programmes directed at traditional knowledge of indigenous populations, *quilombolas*, and other local communities, which have their participation.

16.1.9. To support the effective participation of specialists from different regions of the country in genetic sequencing programmes and other programmes for the development of technologies through the use of biological resources.

16.1.10. To formalize and strengthen reference centres serving as deposits for organisms associated with products and processes patented in Brazil.

16.1.11. To promote the integration of federal, state, municipal, and organized civil society programmes and actions related to research, human resource training, and programmes and projects related to biodiversity.

16.1.12. To encourage the formation and consolidation of national networks for research, technological development and the administration and management of biodiversity, as a means to promote and facilitate exchange about biodiversity among different sectors of the society.

16.1.13. To create incentives for the administration and management of biodiversity, such as awards for research and projects on conservation and sustainable use.

16.1.14. To create stimuli for non-governmental organizations working with biodiversity conservation.

16.1.15. To support the creation of centres for specialized documentation for each of the Brazilian biomes, in order to facilitate scientific cooperation in the country and abroad.

16.1.16. To encourage the development of a support program for scientific publications about Brazilian biodiversity, specifically field guides, taxonomic keys, electronic catalogues of floras and faunas, systematic revisions, monographs and ethno-biological studies.

16.2. Second Directive: Training and Securing Human Resources. To promote human resources programmes aimed at training, and securing human resources, including refresher courses, and capacity-building among Indigenous peoples, *quilombolas* and other local communities, for a broader and greater control over the knowledge and technologies necessary for the administration and management of biodiversity.

### Specific Objectives:

16.2.1. To create programmes for training, refresher courses and securing human resources at institutions which carry out inventories and the characterization, classification, administration and management of biodiversity of the different biomes in the country.

16.2.2. To reduce regional disparities, encouraging capacity-building for personnel and institutions for the administration and management of biodiversity, including biotechnology, creating differentiated mechanisms for immediate hiring in teaching and research institutions in needy areas of the country, and encouraging the permanence of professionals involved in training in research and biodiversity management and administration.

16.2.3. To strengthen postgraduate and doctoral programmes at research institutions in the themes related to the objectives of the Convention on Biological Diversity.

16.2.4. To support training and capacity-building of indigenous populations, *quilombolas* and other local communities as to biodiversity administration and management, especially regarding techniques for adding value to, and the commercialisation of, biodiversity products derived from traditional sustainable techniques.

16.2.5. To support training and/or specialisation in biodiversity administration and management for technicians working on projects or in enterprises with potential environmental impact.



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16.2.6. To support distance learning initiatives in areas related to biodiversity.

16.2.7. To promote widespread publicity of the terms of the legislation related to access to genetic resources, to the components of the genetic patrimony, and the associated traditional knowledge, directed at sectors related to this theme.

16.2.8. To promote courses and training for civil servants, including judges, members of the Attorney General's Office, and the federal, civil and military police, in the fields of biodiversity administration, management and conservation.

16.2.9. To promote and support the training of human resources involved in the development and dissemination of information networks about biodiversity.

16.2.10. To train personnel for the administration and management of biodiversity in protected areas.

16.2.11. To promote regional events for Indigenous peoples, *quilombolas* and other local communities, with the objective of publicizing and clarifying the terms of the legislation pertaining to access to genetic resources, and train local agents.

16.2.12. To encourage cooperation among the government, universities, research centres, the private sector and organized civil society to elaborate models for the administration and management of biodiversity.

16.2.13. To support cooperation between the public and private sectors for the training and maintenance of human resources to perform research activities in biodiversity administration and management, especially related to the use of biological resources and the maintenance and use of germplasm banks.

16.3. Third Directive: Access to Technology and Technology Transfer. To promote access to technology and the transfer of national and international scientific technology for the administration and management of Brazilian biodiversity.

### Specific Objectives:

16.3.1. To create and support programmes which promote the transfer and diffusion of technologies for the administration and management of biodiversity.

16.3.2. To support the exchange of know-how and technologies pertaining to selected themes in areas defined as priority for biodiversity administration and management with international and foreign reference centres.

16.3.3. To establish mechanisms that facilitate exchange between those involved in the generation of biotechnological expertise and the potential users, safeguarding intellectual property rights.

16.3.4. To promote the perfection of the Brazilian legal framework with respect to access to and the transfer of technologies.

16.3.5. To establish a national initiative to disseminate the use of technologies in the public domain which are relevant to the administration and management of biodiversity.

16.3.6. To establish demonstration units for the use of technologies for the conservation and sustainable use of biodiversity.

16.3.7. To promote cooperation for the certification of technologies transferred from developed countries to Brazil.

16.3.8. To define and implement norms and procedures for the exchange of technologies for the use of genetic and biological resources, with transparency and guaranteeing the interests of the nation, the academic community, and of Indigenous peoples, *quilombolas* and other local communities.

16.4. Fourth Directive: Funding Mechanisms. The integration, development and strengthening of mechanisms for funding the administration and management of biodiversity.