

IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY IN BRAZIL

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Summary

Outstanding among the global environmental issues that have emerged since the 1980s is the issue of the rapid loss of biodiversity. This is an issue that is urgent from the ecological standpoint and strategic from the economic, political and social standpoints. With the Convention on Biological Diversity (CBD, 1992) a new global framework was introduced, together with a new international code of conduct urging respect for genetic and biological resources, in order to curb threats appearing in this field. Based on the broad-ranging international context, this paper analyses the principal background aspects and the current situation, in addition to challenges and future prospects for implementing the Convention on Biological Diversity in Brazil. This is followed by an overview of the importance of Brazil in terms of global biodiversity, focused more specific on matters linked to the sustainable use and conservation of biodiversity, as well as access to genetic resources and financing. Progress on institutional and legal matters is also stressed, in parallel to the implementation of the CBD, including aspects related to biosecurity and access to technology.

1. Introduction

The world is today undergoing an unprecedented environmental degradation process at the planet-wide scale that affects the set of components of the biosphere and jeopardizes the existence and perpetuation of the many different forms of life. A new category of interrelated global environmental issues has arisen as a result of this situation, including: destruction of the ozone layer; global climate change through

enhancement of the greenhouse effect; pollution of the marine environment; devastation of forest lands; and loss of biodiversity.

Acknowledging the environmental constraints of the development models that have ruled so far highlights the need for new forms of global governance for the environment on a global basis, gradually introducing the issue of the environment on national and international political agendas. Within this context, **sustainable development** is proposed as a way of reconciling economic growth targets with ecological sustainability, defining the terms for a global political commitment while mobilizing many different interest groups.

Outstanding among the global environmental topics that have emerged since the 1980s is the problem of rapid depletion of biological and genetic diversity (Box 1). Biodiversity is an issue that is urgent from the ecological standpoint and strategic from the economic, political and social standpoints. The diversity of life is an essential element for ensuring environmental balance, endowing ecosystems with a capacity to react more effectively to alterations in the environment caused by natural and social factors, and bearing in mind that from the ecological viewpoint, the simplest ecosystems are also the most fragile. Genetic and biological resources have historically played leading roles in nutrition, agriculture and medicine, and more recently as raw material for sophisticated biotechnologies.

With the Convention on Biological Diversity (CBD), signed during the United Nations Conference on the Environment and Development (UNCED) in June 1992, in Rio de Janeiro, a new global regime was established with a new international code of conduct for genetic and biological resources designed to curb the threats looming over this field.

With the full scope of its current meaning, the concept of biodiversity has become more prominent since the 1980s, particularly after the publication of the work by Elliot Norse and others entitled: *Conserving Biological Diversity in our National Forests*. The Wilderness Society: Washington, D.C, 1986. Biodiversity includes all the results of organic evolution, meaning biological life on the Earth, at many different levels, ranging from genera through to species and even complete ecosystems, as well as their reproduction capacities. This corresponds to the “living variability”, reflecting the level of complexity of life itself and covering the diversity of species and their habitats.

In scientific circles, wide-ranging discussions are underway on the most accurate definition of the concept of biodiversity. Article 2 of the Convention on Biological Diversity defines biological diversity as being:

“the variability of living organisms of all types, including, among others, terrestrial ecosystems, marine and other aquatic ecosystems, and the ecological complexes to which they belong; this also includes diversity within species, between species and ecosystems”.

To an increasing extent, the cultural diversity of humankind—including its variety of languages, beliefs and religions, land management practices, artistic

expression, types of food and many other human attributes—is interpreted as a significant component in biodiversity, taking into account the two-way flow of influences linking the environment and human cultures. Consequently, the concept of biodiversity is being expanded to that of social biodiversity.

Box1: The Concept of Biodiversity

Article 1 of the Convention on Biological Diversity (CBD) stipulates three levels of obligations to be met by each signatory nation: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable share-out of the benefits arising from the use of genetic resources. The means defined for achieving these objectives are: access to genetic resources; transfer of the pertinent technology; and adequate financing. For the first time, a multilateral instrument approaches biodiversity in a broad-ranging way, taking the genetic level into account and handling conservation in association with sustainable use, and making access to the genetic resources of developing countries conditional on technology transfers, while including concern for the interests and rights of traditional communities.

However, the Convention on Biological Diversity in itself does not exhaust the vast and conflict-driven negotiating process among many different interests. On the one hand this lines up the standpoints of the countries endowed with ample biological and genetic diversity (most of the developing tropical nations), counterbalanced by the view of the developed countries, that consume biogenetic resources and are endowed with funding and the technological and scientific expertise and know-how required to protect the natural heritage.

The final wording of this Convention caused much dissatisfaction among both the developing and developed countries. Some of the developing countries and non-governmental organizations (NGOs) were unhappy by the fact that the Convention: a) did not provide adequate protection for the rights and interests of traditional local communities; b) did not mention the consumption standards of the core countries and the elites in the developing nations, as jointly responsible for the loss of global biodiversity; c) did not analyze the links between biodiversity and biotechnology with the necessary depth; d) did not ensure retroactive validity for regulating access to genetic resources removed from their countries of origin prior to the Convention coming into effect; and e) showed itself to be vulnerable in relation to other international fora such as the World Trade Organisation (WTO). Meanwhile, the developed countries, (particularly the USA, which still has not ratified this Convention) fear the implications of the CBD on matters such as intellectual property rights, biotechnology transfer and funding.

The implementation of the Convention now basically depends on the “internalization” of its guidelines by national societies and local communities. Its practical effects are still strongly shaped by decisions and guidelines emanating from other multilateral regulation instruments and entities that also intervene—even if indirectly—on matters related to biodiversity, such as the World Trade Organisation (WTO) and the Food and Agriculture Organization (FAO).

Against this broad-ranging backdrop, the main precedents are analyzed, together with the current situation, and the challenges and the future prospects for the implementation of the Convention on Biological Diversity in Brazil. Particular attention is paid to certain issues covered by this Convention, including the sustainable use and conservation of biodiversity, access to genetic resources, and financing.

Special attention is also given to the legal and institutional progress achieved with the regard to the implementation of the CBD in Brazil, including aspects related to biosecurity and access to technology.

2. Importance of Brazil in terms of global biodiversity

The tropics shelter much of the world's biological and genetic resources, while also facing the worst threats of destruction to this natural heritage, although tropical forests are not the only ecosystems jeopardized—just as the developing countries are not solely responsible for the problem of deforestation worldwide. The appearance of biodiversity as a global environmental issue coincides—and for some people is associated with—warnings about the deforestation of the tropics and particularly Brazilian Amazonia issued during the 1980s, which firmed up the association between protecting the forestlands and protecting biological diversity.

Rated a world leader in global terms for megadiversity, Brazil shelters a wide variety of species that are endemic (found only or almost only in certain places). A continent-sized country, covering over 8.5 million square kilometers, Brazil is framed by close on 3.5 million square kilometers of coastal and offshore waters under its jurisdiction, as well as having the world's highest freshwater run-off (6950 cubic kilometers per annum), with a wide variety of climate and geomorphology. It is also endowed with the largest unbroken tract of tropical forest, an ecosystems ranked as the richest in biodiversity. In particular, Amazonia shelters the largest biological diversity and the greatest forest wealth on the planet (Box 2).

Sheltering one of the Earth's last remaining tracts of unbroken tropical rainforest, Brazil is home to 30% to 40% of the world's tropical forestlands, most of which are located in Amazonia.

Greater Amazonia covers some 7.8 million square kilometers of South America, extending through Brazil, Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana, Suriname and French Guiana, equivalent to one-twentieth of the Earth's surface, around one half of Europe and two-fifths of South America. Brazilian Amazonia covers some five million square kilometers, which is almost 60% of the nation's landmass, with 78% of its plant cover, in eight States: Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins and much of Maranhão.

In ecological terms, the Amazon biome shelters twenty-three eco-regions. In addition to its wealth of plants and wildlife, Amazonia is also endowed with broad-ranging diversity in terms of its geological substrata, soils, and climates, together with the world's largest river basin. All this rates Amazonia as the largest natural gene bank on

the planet, with around one-third of the global genetic inventory. Although no conclusive data have yet been recorded, there are estimates of around 60 000 plant species in Amazonia, (of which 30 000 are higher plants with over 2500 tree species); 2.5 million species of arthropods (insects, spiders, centipedes, etc.), 2000 fish species and 300 mammals. The diversity of species per hectare of Amazon rainforest is also high, with 100 to 300 tree species, and similar levels noted for wildlife.

However, it is widely acknowledged that the prevailing regime of economic exploitation of the natural resources of Amazonia is seriously jeopardizing its environmental balance and undermining the conservation of biodiversity. During the 1960s and 1970s, Amazonia was the stage for mega-projects: large-scale mining complexes, particularly iron, cassiterite (tin ore) and bauxite (aluminum ore); giant hydro-power complexes; massive infrastructure projects carving highways through the forest; charcoal-burning centers; pulp-mills; expansion of logging activities; farming and ranching projects; and an electro-electronic industrial hub in the Manaus Free Zone. This process was an integral part of a broader-ranging drive to build-up and expand capital, integrating Brazil into the global economy, in parallel to a geo-political and military strategy for settling the nation's heartlands.

This development paradigm spurred the extermination or marginalization of the remaining indigenous communities while speeding up disorderly urban sprawl (today over one half of the population of Amazonia lives in towns) and encouraging large-scale land ownership throughout this region—all highly unfavorable to its social and economic development. New policies have been proposed for this region, designed to protect nature and foster sustainable development.

Consequently Amazonia is an area of the utmost importance in terms of the practical results of the challenges and gridlocks that are today appearing at national and international levels in discussions on the sustainable use and conservation of biodiversity.

Box 2: The Power of Amazonia

The lack of knowledge of Brazilian biodiversity is still daunting. Some estimates indicate that the number of microorganisms, plants and animal species in Brazil tops two million, equivalent to 10% to 30% of living species in the entire world, and reflecting the existence of a wealth of genetic diversity. Rated N° 1 worldwide for its higher plant species diversity, as well as freshwater fishes and mammals, Brazil ranks second for amphibians, third for fish and fifth for reptiles, according to the data in the First National Report for the Convention on Biological Diversity: Brazil (Box 3).

Brazil is home to around:

- 22% of the global total of higher plant species with 55,000 species described (the most diverse plant-life in the world)

- 10% of the world's mammals with 524 species –: N° 1 worldwide (131 of them are endemic, ranking it in fourth place). Among the mammals, 77 are primates (27% of the global total), with and over 70 mammal species are threatened with extinction.
- 10% of the amphibians - —517 amphibian species (N° 2 worldwide) with 294 of them endemic (N° 2 worldwide).
- 17% of the world's birds (N° 3 worldwide) with 1,677 species and some 191 endemic (N° 3 worldwide), and 103 bird species threatened with extinction.
- 3,131 terrestrial vertebrate species (N° 2 worldwide) with 259 species threatened with extinction and 788 endemic species (N° 4 worldwide).
- Over 3,000 freshwater fish species ranking N° 1 worldwide by number of species.
- At least 3 million insect species (probably 5 to 10 million insects, most of them not yet described).
- 468 reptile species (N° 5 worldwide) of which 172 are endemic (N° 5 worldwide).

Box3: Brazilian Biodiversity

The Brazilian economy is solidly rooted in exotic species, as the Brazilian government acknowledges in its First National Report for the Convention on Biological Diversity:

“Brazilian agriculture is based on growing sugarcane that originated in New Guinea, coffee from Ethiopia, rice from the Philippines and wheat from Asia Minor, as well as soybeans and oranges from China. Its forestry depends on eucalyptus from Australia and pines from Central America. Its livestock consists largely of cattle from India and horses from Central Asia, grazing mainly on African grasses. Its fish-farming depends on carp from China and tilapia from East Africa, while its apiculture is based on bee varieties from Europe and Africa.”

Despite many economically-relevant native species such as pineapples, peanuts, Brazil-nuts and cassava, Brazil does not play a leading role in global terms among the leading suppliers of forest species for important food crops. Consequently, Brazil is rated as highly dependent on genetic resources for nutrition and agriculture, with 64% of its harvests consisting of exotic genetic materials.

Brazil's status as a country that is both mega-diverse and mega-dependent at the same time, in terms of biological and genetic resources, places it in a position of much responsibility in the global framework of biodiversity, particularly due to the relative fragility of this scenario.

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Biographical Sketch

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