

Foto: Ana Lúcia Prates



Foto: Magno

**New Brazilian Ministry of Environment Partnerships
with the Global Environment Facility for the
Conservation and Sustainable use of Biodiversity**

**New Brazilian Ministry of Environment Partnerships with the Global
Environment Facility for the Conservation and Sustainable use of
Biodiversity**

Federal Republic of Brazil

Presidencia

ILUIZ INÁCIO LULA DA SILVA

Vice-President

JOSÉ ALENCAR GOMES DA SILVA

Ministry of the Environment

Minister

MARINA SILVA

Secretary General

JOÃO PAULO RIBEIRO CAPOBIANCO

Secretary of Biodiversity and Forests

MARIA CECÍLIA WEY DE BRITO

Director of the Department Biodiversity Conservation

BRAULIO FERREIRA DE SOUSA DIAS

Manager for Biodiversity Conservation

DANIELA AMÉRICA SUAREZ DE OLIVEIRA

Ministério do Meio Ambiente – MMA

Centro de Informação e Documentação Luís Eduardo Magalhães – CID Ambiental

Esplanada dos Ministérios – Bloco B – térreo – CEP – 70068-900

Tel.: 55-61-3317-1235 Fax: 55-61-3317-1980 – e-mail: cid@mma.gov.br

Print in Brazil

Ministry of the Environment

**New Brazilian Ministry of Environment Partnerships with the Global
Environment Facility for the Conservation and Sustainable use of
Biodiversity**

Brasília
April/2008

NEW BRAZILIAN MINISTRY OF ENVIRONMENT PARTNERSHIPS WITH THE GLOBAL ENVIRONMENT FACILITY FOR THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

Country Overview

Occupying nearly one-half of the South American continent, Brazil has a wide range of climate zones ranging from humid tropics to semiarid to temperate areas. These comprise several ecologically differentiated biogeographical zones (biomes). Brazil contains the world's largest standing contiguous tropical rain forest (Amazonian forests), the world's largest inland wetland (*Pantanal*), expanses of semiarid thorn forests (*Caatinga*), vast tree and scrub woodlands (*Cerrado*), and more than 7,000 linear kilometers of coastal and marine ecosystems. The country's size and number of biomes contribute to its wide diversity of fauna and flora. With more than 55,000 species of vascular plants, Brazil is the most plant-rich country in the world. Areas such as the Atlantic forests, the Cerrado and Western Amazon have been designated as biodiversity "hot spots" due to their high instance of biodiversity and endemism. One in ten of all mammals (524 species) are found in Brazil, together with one in five of all birds (1,677), and one in eight amphibian species (517). A significant number of these species are endemic. For example, approximately 1,500 vertebrate species are endemic, including: 11 percent of birds found in Brazil, 10 to 20 percent of bony fishes, 23 percent of sharks and rays, 25 percent of mammals, 37 percent of reptiles, and 57 percent of amphibians. With more than 70 percent of the Atlantic Forest biome, 40 percent half of the Cerrado and Caatinga biomes, and more than 15 percent of the Amazon Forest biome already deforested, large numbers of biodiversity components in Brazil are in danger of becoming extinct in the very near future. Currently, 627 animal species are officially recognized by the Brazilian government as threatened with extinction that includes 78 threatened aquatic invertebrate species, 130 threatened terrestrial invertebrates, 154 threatened fish, 20 threatened reptiles, 16 threatened amphibians, 160 threatened birds, and 69 threatened mammals.

The root causes of biodiversity loss typically fall within the following categories: demographic change, inequality and poverty, macroeconomic policies and infrastructure construction, social change, and development bias. In terms of economic activities, agricultural expansion, including plantation forestry and grazing, is the most significant threat to biodiversity, followed by invasive exotic species, forest burning, road construction, and mining. A secondary set of local factors includes hunting, overexploitation of timber and fuel wood, illegal trading of plants and animals, chemical pollution, oil exploration, hydroelectric projects, and tourism. The main impact is clear-cut deforestation, followed by erosion, flooding, soil and water pollution, landscape fragmentation, toxic runoff and water contamination, changes in ecosystem structure, air pollution, and biotic invasions.

The Brazilian Ministry of Environment and the Global Environment Facility have a long history of cooperation, with four projects (US\$ 60.6 million dollars) that produced important results for the conservation and sustainable use of Brazil's biodiversity and for the country's adherence to the Convention for Biological Biodiversity. This partnership is continuing with five new projects that will significantly contribute to the mainstreaming of biodiversity concerns into the public and private sectors; to the implementation of mangrove protected areas; to the conservation and sustainable use of aquatic biodiversity in the Amazon; to achieve improved food security, nutrition and livelihoods through the enhanced conservation and sustainable use of pollinators; and to conserve the biodiversity rich and highly threatened *Cerrado* savannas of the Brazilian Central Plateau. These five new projects represent US\$ 51.6 million dollars in GEF funds and additional US\$ 168.0 million dollars in national co-financing.

NATIONAL BIODIVERSITY MAINSTREAMING AND INSTITUTIONAL CONSOLIDATION PROJECT – PROBIO II

Project Context and Rationale

The CBD has defined as part of its Strategic Plan to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional, and national level. Thus, if the CBD is to succeed, it has to reach its objectives and targets in Brazil, since fifteen to 20 percent of the 1.5 million recognized species in the world are found within its national borders. The objective of this project is to reduce biodiversity loss in Brazil, thus directly contributing to the CBD's global target for 2010.

However, there exists an intrinsic difficulty in generating a robust estimate of the real rate of biodiversity loss in a country, which is a critical piece of information necessary to meet this objective. In a preliminary attempt to address this gap, a recent set of diagnostic studies carried out by the Brazilian Government analyzed a set of indicators to estimate the current rate of ecosystem, species and genetic biodiversity loss in Brazil and in each of Brazil's seven biomes (Amazonia, Cerrado, Pantanal, Caatinga, Atlantic Forest, Pampas, Coastal and Marine Zone).



Foto: PNUD

Based on these data, three scenarios for the biodiversity loss in Brazil by 2010 were generated yielding insight into the rate of biodiversity loss. For example, the number of fires/1000km²/year in Brazil by 2010 is expected to be between 85 and 332. The average number of new invasive species in Brazil is currently estimated at 1 new species/year among terrestrial ecosystems and 1.8 species/years for aquatic ecosystems. By 2010 it is estimated that the number of new invasive species in Brazil will increase at a rate of up to 3.3 species per year. The results also show that the percent of remaining native vegetation in each biome through the year 2010 is: Amazonia (87%), Pantanal (81%), Cerrado (50%), Caatinga (26%), Atlantic

Forest (21%), and Pampas (52%). The number of species (fauna) threatened with extinction in Brazil is estimated at 551 by 2010. And, based on the worst case scenario examined, the additional number of species (fauna) that will be threatened with extinction by 2010 is estimated roughly at: Amazonia (43), Cerrado (65), Pantanal (20), Caatinga (19), Pampas (27), Atlantic Forest (329), Coastal Zone and Marine environment (49). The scenarios generated indicate that the rate of decline of Brazil's fisheries stock between 1995 and 2001 was estimated roughly at 40%.

Although these data provide some insight into the rate of biodiversity loss in Brazil, it is clear that significant additional work is needed to obtain a valid estimate of the rate of biodiversity loss in each of Brazil's biomes as well as for the country as a whole in order to monitor and reduce biodiversity loss.

The aim of mainstreaming is to integrate conservation goals and sustainable use of biodiversity into sectors that impact biodiversity. Mainstreaming requires participation of both the public and private sectors in order to influence the entire commodity supply chain (e.g. soybean, meat, biofuels, timber, charcoal, and mining). Successful mainstreaming can result in lasting impacts within more far-reaching socio-economic processes than strict conservation alone, but these outcomes are often realized over the long-term.

Efforts to alter production paradigms in Brazil through mainstreaming biodiversity principles into economic sectors will have a positive impact on global environmental systems, such as prevention of the loss of ecosystem services, including: water balance (air moisture, rainfall, river flow), heat balance (atmospheric and oceanic circulation), carbon balance (global warming), nutrient balance (biogeochemical cycles, gases, and aerosols from forest burnings), and sediment balance (erosion and siltation downriver and in coastal zones). Similarly, strengthening and consolidating public sector institutions capable of implementing policies related to biodiversity will yield positive ramifications far beyond Brazil's borders.

Efforts to address conservation policies and practices have not been well integrated across sectors, among various public agencies, and between the public and private sectors. Despite the enormous impact other sectors have



Foto: Gustavo Mozzer



on biodiversity, and the important role biodiversity can play in these sectors, conservation initiatives are almost exclusively the domain of biodiversity and environmental stakeholders. Recently, a few projects have experienced success in extending biodiversity conservation into other sectors in Brazil. However, their impact has been limited, and government funding for this type of mainstreaming, particularly from ministries other than the Ministry of the Environment, is limited.

Sustainable use and conservation programs in Brazil have primarily concentrated on small local, community-based economic activities. Though these types of activities may be successful in limited areas, they lack sufficient scale to make a significant contribution to halting the rate of biodiversity loss in Brazil. Large-scale coordinated mainstreaming activities, defined as activities implemented over hundreds or thousands of square kilometers, not only combat growing threats, they also mobilize public opinion to the advantages of adopting sustainable production processes, and engage the private sector in adopting environmentally responsible business practices. In tandem, such activities raise society's awareness of, and commitment to market choices in favor of biodiversity-mainstreamed products and services.

As an integral part of this mainstreaming project, co-financing has been secured, and partnerships established with other major stakeholders including the Ministry of Agriculture, Livestock and Supply (MAPA), Ministry of Health (MS), Ministry of Science & Technology (MCT), Oswaldo Cruz Foundation (FIOCRUZ), Chico Mendes Institute for Biodiversity Conservation (ICMBIO), Rio de Janeiro Botanical Garden (JBRJ), Brazilian Agricultural Research Corporation (EMBRAPA), and NGOs. Other sectors, such as energy, mining and transport were engaged during project preparation discussions and are expected to join the project during implementation. Additional partnerships will also be established with NGOs, the academic sector, and the private sector.

Project description

The development objective of Probio II is to promote mainstreaming of biodiversity principles at the national level in key public and private sector planning strategies and practices, as well as to consolidate and strengthen institutional capacity to produce and disseminate relevant biodiversity information and concepts. The project will be financed by a US\$ 22 million grant from the GEF. An additional US\$ 75 million in co-financing will be provided by both governmental and private sector sources.

Initially, the project will work with ministries, NGOs, and other institutions whose mandates focus on the agriculture, health, science and technology, environment, forestry, fisheries, and water resource sectors. These sectors were chosen for both their impact on biodiversity and for the willingness of the relevant institutions to participate in the project. For all sectors, the impact of the proposed activity on globally important biodiversity will be the principal criterion for the selection of subprojects, and subproject indicators will reflect this focus.

If this project is successful, it will contribute to the reduction of the current rate of biodiversity loss, Brazil's contribution to the 2010 goals and targets of the CBD.

Project components

The Project is comprised of three technical components and one component on project administration, described below.

Component 1 - Mainstreaming Biodiversity into Select Public Sectors. This component will incorporate conservation and sustainable use of biodiversity principles into select government sectors. Each sectoral mainstreaming initiative will follow three steps: (a) consolidation of existing information (assessment of obstacles and alternative solutions); (b) consensus building with stakeholders (analysis of constraints and solutions); and (c) development of solutions (methods and procedures). As a result, government agencies will dedicate attention and resources to the identification and implementation of



Foto: Magno

large-scale mainstreaming opportunities at a national level that enjoy the support of relevant stakeholders. These opportunities will be tested on the ground through applied sector activities under this component, as well as through the landscape-scale subprojects developed under Component 2.

Under this component, the project will also support preparation of sectoral plans that incorporate biodiversity management practices. It will seek strategies for incorporating the objective of biodiversity conservation and sustainable use into policies, programs, projects, and development plans throughout different levels of government activity. This component involves cooperation with a number of government agencies whose sectors have a significant impact on, and use of, biodiversity, including agriculture, fisheries, forestry, water resources, health, and technology.

Component 2 - Mainstreaming Biodiversity into the Private Sector. This component will incorporate the conservation and sustainable use of biodiversity principles into key private sector planning strategies and practices. The operation mechanism for this component will be the creation and management of an Opportunities Fund, housed in and managed by Brazilian Fund for Biodiversity (FUNBIO). Support from the Fund will be based on the assessment of proposals received and subprojects developed to address the possibility of mainstreaming biodiversity in integrated large-scale productive landscapes. This component will promote private sector strategies and policies that support biodiversity conservation by working with producer groups, associations, cooperatives, chambers of commerce, and large firms, and in coordination with existing initiatives with similar objectives. The focus on policies and strategies allows the component to have broad impact beyond that which individual projects might experience. Activities will be carried out in coordination with relevant public sector agencies. Government sectors will interact with private sector partners primarily through regional landscape projects, where conformity of environmental norms adopted by the private sector with state-wide, river basin, and municipal-level land use planning and protected area policies as well as with the enforcement of federal policies will be emphasized.

Component 3 - Institutional Strengthening and Generation of Biodiversity Information for Policymaking. This component will strengthen, consolidate, and coordinate a network of key Brazilian institutions working on biodiversity issues to produce information relevant to the development and implementation of biodiversity mainstreaming policies. This network will support progress toward Brazil's CBD targets for 2010 by promoting appropriate policies and practices and the dissemination of biodiversity information relevant to policymaking. The component will also monitor the progress made on key biodiversity indicators, including those linked to the CBD targets for 2010. These two goals are linked; the generation of relevant information requires stronger, better coordinated institutions, and the information produced will further strengthen the capacity of the biodiversity sector, especially as it relates to public policy development.

Component 4 - Project Coordination and Management. This component will support all other project activities by ensuring efficient implementation, supervision, coordination, and administration of the project. The entire project will be coordinated by the Ministry of the Environment (MMA), through its Secretariat for Biodiversity and Forests (SBF) and will be executed through a contract between MMA and FUNBIO. The National Biodiversity Commission (CONABIO) will provide consultative oversight for the project on biodiversity priorities, policies, and guidelines. CONABIO will also promote mainstreaming across sectors and provide general orientation for project implementation. Other ministries and government organizations will participate in the co-financing and execution of the project.

Additional Information

Please visit the PROBIO web page: <http://www.mma.gov.br/probio>

EFFECTIVE CONSERVATION AND SUSTAINABLE USE OF MANGROVE ECOSYSTEMS IN BRAZIL

Project Context and Rationale

Brazil's mangrove ecosystems cover an estimated 1.3 million hectares and spread from the Oiapoque River mouth in the State of Amapá in the north, to the Laguna border in the state of Santa Catarina (nearly 6,000 km of coastline). They are, however, concentrated in the North and occidental Northeastern regions, covering a great part of the coastal area in the states of Maranhão, Pará, and Amapá.

At least 800 known species, amongst plants, crustaceans, mollusks, fishes, birds, and microorganisms inhabit Brazilian mangroves, including rare, endemic, and endangered species such as the scarlet ibis *Eudocimus ruber* and the manatee *Trichechus manatus*.

Juveniles and larval stages of fish and shrimps develop on estuaries and coastal sheltered areas associated to mangroves, considered as natural nursery sites. That assigns a great social and economic value to these ecosystems, considered to support the fisheries on coastal areas, as is the case of the uça crab *Ucides cordatus* that provides the livelihood to thousands of families. Therefore, a great number of fishing communities are benefited and depend upon mangrove resources for their livelihood. Nevertheless, these rich biodiversity and the goods and services they provide are threatened due to loss and fragmentation of vegetation cover and the decreased quality of aquatic habitats.

The lack of integrated policies, added to the fact that mangroves are situated in high valued and populated areas, which are also suitable and of easy occupation by shrimp farming, has led to the degradation and deforestation of this important ecosystem. In Brazil, the main threats to the mangrove ecosystems are due to expansion of large scale and illegal shrimp farming, urbanization and unregulated tourism, sewage and oil pollution, increasing fishing and hunting pressures, and illegal deforestation.



The Brazilian Government has made significant advances to tackle these problems and to mediate conflicts related to the use of mangrove resources. In addition, approximately 56% of Brazil's mangroves are now within Protected Areas (PAs). Currently, there are 132 PAs at the federal, state and municipal levels, grouped in two categories according to the National System of Conservation Units (SNUC): (i) restricted use PAs and (ii) sustainable-use PAs,

Deficiencies in PAs policies and management reduce their capacity for mangrove ecosystem conservation. The central deficiencies are: (i) insufficient regulatory framework, (ii) weak institutional processes and capacities, (iii) lack of a national planning framework, (iv) financial constraints, and (v) information.

Project Description

The Mangrove Project objective is to increase the awareness to the importance of this ecosystem and its conservation, as well as to strengthen the National System of Conservation Units (SNUC) in their capacity to promote the effective conservation and sustainable use of mangrove's biodiversity. Project funds (total US\$ 20.3 million, US\$ 5 million from a GEF grant) will be invested in a 5 year period in a multisector capacity building process, benefiting fishing communities, managers and other users of natural resources. In addition, there will be pilot projects testing effective and integrated management approaches for mangrove conservation units.

Coordinated by the Secretariat of Biodiversity and Forests of the Brazilian Ministry of Environment (MMA), the project has the technical cooperation of the United Nations Development Program (UNDP) and the executive partnership of the Institute of Environment and Natural Renewable Resources (IBAMA) and the Chico Mendes Institute for Biodiversity Conservation (ICMBIO). Other partners include environment agencies from the states of Ceará, Paraíba, São Paulo and Paraná, the National Secretariat for Fisheries and Aquaculture (SEAP), and the Conservation International (CI).

Project Components

Component 1 - Enabling framework for a sub-system of mangrove conservation units in SNUC.

This component will provide the broad framework at the policy level to better address threats and implementation of mangrove PAs. An improved regulatory framework and strengthened institutional capacities will enable minimal standards for mangrove conservation to be adopted across the country. Specific norms and regulations for mangrove PA management, such as the definition of buffer zones that take into account upstream activities will enhance PA protection; improved licensing and enforcement procedures for sectoral activities near mangroves will reduce pressures on PAs; and increased dialogue with sectors at the national level will facilitate the consideration of mangrove conservation in their planning. Coupled with these mechanisms, the development of a nationwide mangrove strategy, the design of a network of mangrove PAs and the testing of funding strategies will create a space for mangrove conservation in Brazil's environmental agenda, in the National System of Conservation Units (SNUC) and in biodiversity funding. This consolidation of the necessary institutional, systemic and financial capacity will be an important element for the up-scaling and replication of the Project actions in pilot areas and enable a long-term application of the Project's strategy and those of other mangrove-related initiatives.

Component 2 - Replicable models for the management of mangrove resources in SNUC sustainable-use PAs. This component will work with local resource users, primarily marginalized communities, to determine how PA sustainable-use categories can be optimized to provide both mangrove conservation and livelihood benefits. It will involve sectoral stakeholders through the participatory development of management plans and strengthening of PA councils to increase compatibility between land uses and conservation goals. It will also develop and test approaches to establish sustainable extraction levels through pilot resource management plans for fisheries and crabs, developed with the participation of resource users, setting up mechanisms and capacities for their enforcement. Further, it will explore other

possibilities for mangrove value-added products and will provide training to stakeholders for sustainable use approaches. This component will thus provide replicable models that orient management throughout the numerous sustainable-use PAs that conserve mangroves in Brazil's National System of Conservation Units (SNUC) and provide inputs to improve the enabling framework under Component 1.

Component 3 - Alignment of protected areas management with sectoral and spatial planning. This component will support two pilots to increase the effectiveness of mangrove PAs through linkages with the authorities, institutions and sectors responsible for planning, water management and development. One pilot will focus on participatory zoning of a cluster of PAs – the Reentrâncias Maranhenses Environmental Protection Area (APA) and the Cururupu Extractive Reserve – taking into account state and coastal zone management and planning processes, and defining land-use zones within the PAs in the cluster. The other pilot, to be carried out at another PA cluster – composed by the Mamanguape APA and the Mangroves of the Mamanguape Delta ARIE – will focus on watershed management instruments to include the needs of the mangrove areas in terms of quality and quantity of freshwater flows required for ecosystem functionality. These pilots will provide tested approaches that will be incorporated into the mangrove policy framework. Capacity-building activities will focus on the people and sectors that depend on mangroves for their livelihoods. For pilot institutions and those involved in broader planning training will include awareness raising, advice and support to state planning, coastal zone management committees and water authorities in terms of mangrove services and functionality.



Foto: Fábio Olmos

Component 4 - Project coordination, monitoring, and dissemination of information for adaptive mangrove management. This component will focus on knowledge management instruments and mechanisms for the generation of information necessary for the effective management of Brazil's mangrove PAs and also for efficient Project management. Direct beneficiaries will be communities that depend on mangroves for their livelihoods and sectoral stakeholders, environmental authorities in central government institutions, including MMA, IBAMA and PA authorities, as well as the Project team and other projects dealing with related issues. The Project will forge partnerships with NGOs to promote campaigns and other awareness mechanisms.

Additional Information

Please send email to: mangues@mma.gov.br

INTEGRATED MANAGEMENT OF AQUATIC RESOURCES IN THE AMAZON REGION PROJECT - AQUABIO

Project Context and Rationale

The Amazon basin covers an area of approximately 7,000,000 km², of which about 58% (4,100,000 km²) is located in Brazil. From a biodiversity perspective, the Amazon basin is unequalled; it is home to the world's richest assemblages of freshwater flora and fauna, including 3,000 fish species, approximately one third of the world's entire freshwater ichthyofauna. Many of the region's economic activities are based on the use of aquatic resources, which are increasingly at risk due to the uncontrolled and poorly planned expansion of high-impact activities in the Basin. In addition, these activities are also source of a growing number of conflicts among resource users.

The Brazilian Government has responded to such problems by designing and implementing policies, programs, and projects. Actions from such programs and projects include, among others: (i) the establishment of a mosaic of protected areas; (ii) on-the-ground testing of co-management of fisheries resources; (iii) improvement and strengthening of monitoring and enforcement systems; and (iv) capacity building for sustainable resource use. Implementation of such projects has shown that threats can be addressed locally, and even threats originating from large-scale processes, such as land conversion and urbanization, can be mitigated through better implementation and coordination of policies, laws, and improved inter-institutional coordination.

Despite all these efforts, a series of constraints have made it difficult to effectively address the threats to the Amazon Basin: (i) public policies are insufficiently articulated across sectors to effectively address threats; (ii) weak organizational and institutional capacity at the basin, state, and local levels to deal with these issues in a participatory and integrated manner; (iii) insufficient availability of information that policy makers and resource managers need to make good decisions; and (iv) insufficient knowledge about alternatives for the sustainable use of land and aquatic resources, especially those that generate economic benefits for local communities while also generating positive impacts on aquatic biodiversity.

In order to achieve effective conservation of aquatic ecosystems within the diversity and vastness of the Brazilian Amazon, general plans and policies must reflect local ecological, cultural, and socioeconomic characteristics. From an ecological point of view, it is important to take into account the diversity of river systems in the region. The interactions between river types, flood regimes, and distinct riparian ecosystems are responsible for a complex mosaic of aquatic habitats that characterize the Brazilian Amazon. From a social point of view, any approach will require the involvement of all stakeholders in a process of discussion, conflict resolution and decision-making within an integrated ecosystem management framework, with the objective of addressing threats to aquatic biodiversity, water resources, and quality of human life.

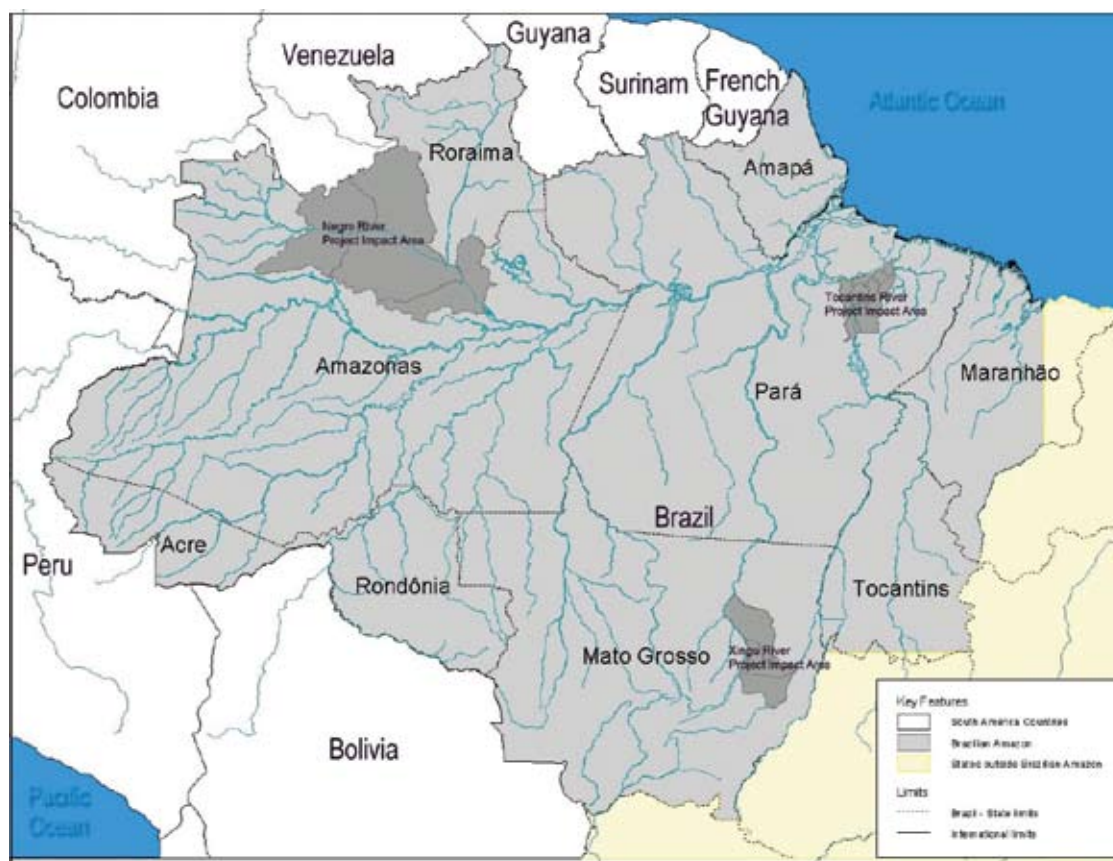
Project Description

The AquaBio Project aims to support the mainstreaming of a multi-stakeholder, integrated management approach to the conservation and sustainable use of freshwater biodiversity in public policies and programs in the Brazilian Amazon River Basin. Additionally, the Project will contribute to reduce threats to the integrity of freshwater ecosystems in the Brazilian Amazon, and assure the conservation and sustainable use of its freshwater biodiversity of global importance.

The project (total of US\$ 17.13 million) is partially financed by a GEF grant (via The World Bank) in the amount of US\$ 7.18 million, with co-financing from the Brazilian Government.

Although some aspects of project implementation would target all states in the Brazilian Amazon (light gray in the map), most project activities would take place in portions of the following three sub-basins

(project target areas, dark gray in the map), selected due to their importance to freshwater biodiversity and because they encompass the main problems that afflict freshwater ecosystems in the Brazilian Amazon: (a) lower and middle Negro river, Amazonas State (high fishing pressure and presence of ornamental fisheries trade); (b) headwaters of the Xingu river, Mato Grosso State (impacts of land degradation due to agribusiness and cattle ranching on freshwater ecosystems); and (c) lower Tocantins river, below the Tucuruí hydropower dam, Pará State (negative impacts on freshwater fisheries from construction of a hydropower dam). For project implementation the Ministry of Environment will have the collaboration of the Institute of Environment and Natural Renewable Resources (IBAMA), the Chico Mendes Institute for Biodiversity Conservation (ICMBIO), and the National Indian Foundation (FUNAI). Other partners include environment agencies from the states of Amazonas, Mato Grosso and Pará.



Map of the Project Area (see text for details).

Project Components

Component 1 - Planning and Public Policy. The objective of this component is to develop and implement Action Programs for the integrated management of aquatic resources (APs) in three sub-basins of the Brazilian Amazon, generating replicable experiences that could become permanent public policies, with positive impacts on aquatic biodiversity, on the reduction of conflicts among various users of natural resources, and on the improvement of local communities' living and working conditions. This component would support: (a) carrying-out of detailed diagnostics of each of the three project target areas, and the elaboration and implementation of sub-basin Action Programs (APs); (b) the development and implementation of institutional mechanisms for integrated management of aquatic resources in sub-basins, and (c) the development of a financial strategy and mechanisms to provide financial resources for the full implementation of the APs in the long-term.

Component 2 - Demonstration Activities. The objective of this component is to generate experiences and lessons learned, including new technologies or production systems, on how to incorporate freshwater biodiversity concerns into various productive activities, providing inputs for the development of APs for

integrated management of aquatic resources. This component would support: (a) demonstration sub-projects that mainstream freshwater biodiversity in productive activities, and (b) other activities, financed by the redirected baseline that create an enabling environment for the mainstreaming of freshwater biodiversity in productive activities. Each sub-project would have its own objectives, expected results, and a monitoring plan. Sub-projects financed by GEF and by the Brazilian government would be defined based on the detailed diagnostics and public consultations to be executed under Component 1.

Component 3 - Building Capacity. The objective of this component is to prepare stakeholders, especially local ones (individuals and institutions), to be able to actively participate in the formulation, implementation, and monitoring of strategies and action programs aimed at the conservation and sustainable use of freshwater biodiversity and water resources in the project areas. This component would support activities that are crucial to the long-term sustainability of project results, such as (a) environmental education, (b) training of rural extensionists and local people on sustainable methodologies and technologies, (c) institutional and individual training for the formation of partnerships and conflict resolution, and (d) support for the establishment of mechanisms for decision making and discussion and resolution of conflicts over the use of aquatic resources in the project target areas.

Component 4 - Project Management, Monitoring and Evaluation (M&E), and Information Dissemination. The objective of this component is to coordinate, manage, and monitor actions developed under the scope of the project, foster integration among the various components and with other related projects and programs, indicate possible needs for changes in project implementation, and disseminate results at local, state, national and international levels. Notably it would support the implementation of a project physical-financial monitoring system and the development and implementation of an information system on aquatic biodiversity (SIBA).

Main outcomes: Main outcomes would be (i) more effective participation of government and civil society institutions in project activities, including monitoring and evaluation, (ii) a system to monitor project impacts fully implemented with participation of local stakeholders, (iii) an Aquatic Biodiversity Information System developed and making information available to the general public, and (iv) project results that lead to the adoption of integrated management of aquatic resources are disseminated and implemented beyond the project target areas.

Additional Information

Please visit the AquaBio web page: <http://www.mma.gov.br/aquabio>



Foto: João Paulo Vianna

CONSERVATION AND MANAGEMENT OF POLLINATORS FOR SUSTAINABLE AGRICULTURE, THROUGH AN ECOSYSTEM APPROACH

Project context and rationale

Pollination is a keystone process in both human-managed and natural terrestrial ecosystems. It is critical for food production and human livelihoods. In agro-ecosystems, pollinators are essential for orchard, horticultural and forage production, as well as the production of seed for many root and fiber crops. About two-thirds of the crop plants that feed the world, plus many plant-derived medicines in our pharmacies, rely on pollination by insects or other animals to produce healthy fruits and seeds. Nonetheless, pollination as a factor in food production and security is little understood and appreciated, in part because it has been provided by nature at no explicit cost to human communities. As farm fields have become larger, and the use of agricultural chemicals that impact beneficial insects such as pollinators along with plant pests has increased, mounting evidence points to a potentially serious decline in populations of pollinators under intensive agricultural development. The domesticated honeybee, *Apis mellifera* (and its several Asian relatives) have been utilized to provide managed pollination systems, but for many crops, honeybees are either not effective or are suboptimal pollinators. The process of securing effective pollinators to “service” large agricultural fields is proving difficult to engineer, and there is a renewed interest in helping nature provide pollination services.

With the threat of increased impacts on pollination services as agricultural systems are intensified, there is good reason to identify, in multiple agro-ecosystems and ecologies, the practices that will prevent the loss of pollination services provided by wild indigenous pollinators. Because restoration is far more difficult than conservation of existing interactions, there are strong argument rationales to conserve wild and indigenous pollination services before they are lost. Management of wild pollination services requires an ecosystem approach with boundaries of the system drawn beyond fields, into the broader agroecosystem. Effective pollination requires pollinating agents, which themselves require resources. There exists virtually no knowledge base about the specific needs and practices to support wild pollinators, particularly in developing countries. Other challenges include increasing the public awareness of this vital but rather inconspicuous ecosystem service, and developing pollinator-friendly policy environments that recognize the need to manage resources at the landscape level, beyond the scale of individual land holdings.

International and Regional Policy and Action

The United Nations Convention on Biological Diversity (CBD) multi-year program of activities on the conservation and sustainable use of agricultural biodiversity was adopted at the Third Meeting of the Conference of Parties to the Convention on Biological Diversity in 1996. This programme of work recognizes that agricultural biodiversity is fundamental to issues of food security, and one of the important links is in the dependence of crops on a diverse variety of insect pollinators.

In recognition of a looming pollination crisis, there has been a mobilization of effort on several levels to address pollination management and conservation. On a global level, the international community has identified the importance of pollinators. Decision III/11 of CBD established the Programme of Work on Agricultural Biodiversity and called for priority attention to be given to components of biological diversity responsible for the maintenance of ecosystem services important for the sustainability of agriculture, including pollinators. In October 1998, the Workshop on the Conservation and Sustainable Use of Pollinators in Agriculture, with an Emphasis on Bees, was held in São Paulo, Brazil. The outcome of this workshop was the São Paulo Declaration on Pollinators, which was submitted by the Government of Brazil to the CBD's fifth meeting of its Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA 5).

Considering the urgent need to address the issue of the worldwide decline in pollinator diversity, the Conference of the Parties to the Convention on Biological Diversity established an International Initiative for the Conservation and Sustainable Use of Pollinators (also known as the International Pollinators Initiative-IPI)

in 2000 (COP decision V/5, section II) and requested the development of a plan of action. The CBD Executive Secretary was requested to “invite the Food and Agriculture Organization of the United Nations to facilitate and co-ordinate the Initiative in close co-operation with other relevant organizations.” In November 2000, FAO organized a meeting with the participation of key experts to discuss how to elaborate the International Pollinators Initiative. Subsequently, a Plan of Action was prepared by FAO and the CBD secretariat; the Plan of Action of the IPI, as adopted at COP 6 (decision VI/5), provided the contextual background for this project proposal.

The aim of the International Initiative for the Conservation and Sustainable Use of Pollinators (IPI) is to promote coordinated action worldwide to: monitor pollinator decline, its causes and its impact on pollination services; address the lack of taxonomic information on pollinators; assess the economic value of pollination and the economic impact of the decline of pollination services; and promote the conservation, restoration and sustainable use of pollinator diversity in agriculture and related ecosystems.

In at least three regions of the world, regional pollinator initiatives have been formed and are building regional capacity in assessment and advocacy for pollinator management and conservation. The North American Pollinator Protection Campaign (NAPPC) brings together experts in academia, research, government agencies, agriculture, private industry, environmental groups and interested individuals from Mexico, Canada and the United States. The African Pollinator Initiative is an Africa-wide group of organizations committed to protecting, understanding and promoting the essential process of pollination for sustaining livelihoods and conserving biological diversity in Africa, which has been facilitated with support from the Food and Agriculture Organization of the United Nations (FAO). The European Pollinator Initiative was formed in response to growing evidence about local declines of pollinators in Europe, and a sense that the problem is widespread.

Regional pollinator initiatives provide a baseline for the proposed GEF project on pollinator conservation. The European Pollinator Initiative has been funded by the European Commission to carry out activities related to the assessment of IPI's priorities in the European region. The North American Pollinator Protection campaign is addressing such questions as monitoring of pollinator trends and identification of pollinator-friendly practices in North America. The proposed project will facilitate an equivalent set of focused activities on assessment, adaptive management, capacity building and mainstreaming to be developed and carried out in a diverse set of developing countries that are similarly committed to pollinator conservation. With developing country involvement, information exchanges and capacity building in different regions, pollinator conservation and management can yield global benefits, making strong links between human livelihood and biodiversity conservation.



Foto: Paulo Eugênio de Oliveira

The Brazilian Pollinators Initiative (BPI)

The BPI is a development of discussions which started in October 1998 at the “International Workshop on the Conservation and Sustainable Use of Pollinators in Agriculture, with emphasis on Bees” held at the University of São Paulo, promoted and organized by the Brazilian Ministry of the Environment (MMA) in partnership with the University of São Paulo, the Brazilian Corporation for Agriculture Research (EMBRAPA) and the Food and Agriculture Organization (FAO). Subsequent discussions on the BPI were held during the “4th Brazilian Meeting on Bees” organized by the University of São Paulo in September 2000 and in the “5th Brazilian Meeting on Bees” that was held in Ribeirão Preto, State of São Paulo, in September 2002.

The BPI builds upon an extensive network of Brazilian experts on bee and pollination research (the “4th Brazilian Meeting on Bees”, for example, brought together almost 300 Brazilian experts and exhibited over 200 papers), an extensive network of beekeepers associations, a worldclass network of agricultural research centers maintained by EMBRAPA, a 50-year track-record of excellence in research and graduate education on bees at the University of São Paulo and a host of potential partnerships within governmental and non-governmental organizations working towards agriculture sustainability.

An Interministerial Government directive have established a National Advisory Committee, under co-ordination of the Ministry of the Environment, with the goal of proposing actions that have the objectives to implement the Brazilian Pollinators Initiative, as part of the International Initiative for the Conservation and Sustainable Use of Pollinators, and to implement in Brazil the International Project EP/GLO/301/GEF “Conservation and Management of Pollinators for Sustainable Agriculture through an Ecosystem Approach” under co-ordination of the Food and Agriculture Organisation of the United Nations.

The following public organizations take part of the National Advisory Committee of the BPI through the Interministerial Government directive Model: Ministry of Science and Technology (MCT); Ministry of Agriculture, Livestock and Supply (MAPA) and Ministry of Rural Development (MDA). Other institutions indicated were: the Brazilian Agricultural Research Corporation (Embrapa), the Chico Mendes Institute for Biodiversity Conservation (ICMBIO), the National Confederation for Agriculture and Livestock (CNA), the Brazilian Bee Breeders Confederation (CBA), the Brazilian Forum of Non-Governmental Organizations and Social Movements (FBOMS) and the Brazilian Service to Support Micro and Small Companies (SEBRAE).

The MMA have invited the academic members covering the following issues: floral biology, gene flux, taxonomy, pollinators monitoring, stinglessbees breeding, apiculture, breeding of other social and solitary bees.

An International Partnership for Pollinator Conservation and Management

Seven countries (Brazil, Ghana, India, Kenya, Nepal, Pakistan and South Africa) have worked together with FAO to identify activities that can address the threats to pollinators, and which will expand global understanding, capacity and awareness of the conservation and sustainable use of pollinators for agriculture. All the partner countries have important agricultural sectors with strong reliance on pollinator-dependent crops, and an existing commitment to building capacity and enabling environments for conserving and managing wild pollinators. The range of partner countries permits the project to include in its focus smallholder farms and large plantations; crops critical for food security and commodities important primarily in export markets; crops for which traditional knowledge contribute significantly to farmer practices, and crops that are grown according to the recommendations of agricultural research.

The countries participating in this project comprise a range of agro-ecosystems, socio-economic conditions and ecologies, which capture a broad diversity of systems where interventions to conserve pollinators can be both challenging and effective. The countries include a range of ecosystems, from subtropical and tropical zones to montane areas to semi-arid regions. Cutting across these ecological zones is an equivalent diversity of agricultural systems, from transitional shifting cultivation, to smallholder

agriculture, to intensive systems of cultivation. The diversity of participating countries will permit learning across ranges of agricultural intensification and sharing of experiences across the broader agroecosystems; for example, montane systems of cultivating mustard seed occur in an extensive region from Asia to Europe, all of which can benefit from project findings. All countries participating have perceived declines in pollination services to crops of economic importance.

The project is partially financed by a GEF grant (via FAO) in the amount of US\$ 4.5 million, with co-financing from the Brazilian Government in the amount of US\$ 13.76 million).

Project Components

The development objective of the project is to achieve improved food security, nutrition and livelihoods through the enhanced conservation and sustainable use of pollinators. The project's immediate objective is to harness the benefits of pollination services provided by wild biodiversity for human livelihoods and sustainable agriculture, through an ecosystem approach in selected countries. The project seeks to promote awareness that not just species, but also the interactions between species merit conservation and careful management, as a way to strengthen key ecosystem linkages. It emphasizes the importance of linkages between conservation of ecosystem functions, sustainable production systems, and poverty reduction. The project has four components:

Component 1 - Expanded knowledge of pollination services. An integrated and accessible knowledge base for management of wild pollination services, for farmers, land managers and policy makers. The project will integrate existing scientific and traditional knowledge on diverse aspects of pollination services into a cohesive source of information. This strengthened and consolidated knowledge base will be made accessible to practitioners in the field, with obvious benefits for conservation and sustainable use of pollination services.

Component 2 - Enhanced conservation and sustainable use of pollinators for sustainable agriculture. The project will identify, demonstrate and document the tools, methodologies, strategies and good agricultural practices that are needed for pollinator conservation and sustainable use, in selected agroecosystems in Brazil, Ghana, Kenya, India, Nepal, Pakistan and South Africa. These practices will be ones that can be effectively replicated in other parts of the world, throughout the broader agroecosystems that underpin the farming systems addressed in this project.

Component 3 - Increased capacity for conservation and sustainable use of pollinators by farmers and land managers. The project will work to build local, national, regional and global capacities for the design and implementation of interventions to mitigate pollinator population declines, and establish sustainable pollinator management practices. In partner countries, capacity among farmers, the agricultural research and extension community, and policy-makers to design and implement pollination management plans and policies will be built.

Component 4 - Enhanced awareness of conservation and sustainable use of pollinators for the general public and for policy-makers. The project will ensure that the lessons learned are disseminated globally, that public awareness of the role and value of pollination services is enhanced and that measures to conserve and sustainably use pollinators are supported by the policy environment.

Additional information

Please visit the Pollinators web page: <http://www.mma.gov.br/polinizadores>

SUSTAINABLE CERRADO INITIATIVE

Project Context and Rationale

The *Cerrado*, a unique type of tropical savanna, covers 25% (200 million hectares) of Brazil and has the highest biodiversity of savannas in the world, with 23 distinct phytophysognomies consisting mostly of tropical savannas, grasslands, forests and dry forests. The Cerrado is considered one of the world's 34 biodiversity hotspots by Conservation International. The World Wildlife Fund identified this biome as one of the most biologically outstanding ecoregions in the planet.



Foto: Alay Miranda Junior

Studies have shown that Cerrado is now severely threatened. The rapid development of agriculture over the past 30 years using highly mechanized practices has transformed the region dramatically. Over 55% of the country's soybean and beef production comes from the Cerrado. The rate of deforestation has been extremely high over the past decades. If it remains unabated, the biome will disappear by the year 2030. Today, of all the world's hotspots, the Cerrado has the lowest percentage of areas under "strict" protection (2.9%) with many of them still being non-implemented (or "paper parks"). As a result, according to the latest IUCN list, the Cerrado has 112 endangered terrestrial fauna species.

Since 2003, the Ministry of Environment has been working to contribute to the design of a national strategy specific for the Cerrado biome. Its focus is the conservation and sustainable development, with the establishment of the Cerrado Working Group, composed of federal, state and municipal governments, NGOs and the private sector, whose main result was the creation, by a presidential decree in 2005, of the National Program for the Conservation and Sustainable Use of the Cerrado Biome. This is a long-term program for

the region, based on a set of principles and guidelines that aims to achieve environmental conservancy and social sustainability for the entire biome. The decree also established the National Commission of the Sustainable Cerrado Program (CONACER), composed by representatives of governmental sectors, business sector, NGOs, social movements, academia and indigenous peoples, and which coordinates, monitors and evaluates the implementation of the National Cerrado Program's activities.

Taking into consideration the biome's magnitude, the large number of stakeholders, the already substantial loss of habitat, the fact that the long-term policy framework for its conservation is not yet fully developed, and the gaps in conservation actions identified by the Sustainable Cerrado Program, the Government of Brazil views this Initiative as a major step forward in coordinating a biome-wide approach for protecting the remaining threatened biodiversity.



Foto: PNUD

Project description

The GEF Sustainable Cerrado Initiative's main objective is to promote the increase of biodiversity conservation and improve the environmental and natural resource management of the biome through support for appropriate policies and practices. In order to achieve the necessary degree of flexibility, decentralization and biome-wide coordination, the Initiative has adopted an innovative design, through a decentralized approach with five sub-projects contracted directly with different executing agencies.

The resources from this grant will be used to support these sub-projects, each with separate grant agreements, selected among state and federal agencies and NGOs according to pre-established criteria defined by the Initiative. The main criteria included (i) consistency with priorities defined by the Convention on Biological Diversity (CBD), (ii) consistency with the GEF's Eligibility Criteria, especially regarding Global Benefits and Incremental Costs, (iii) consistency with the objectives, implementation strategy and operational directives of the Federal Government's National Sustainable Cerrado Program and (iv) directly contributing to the objectives, components and results defined for the overarching Sustainable Cerrado Initiative project.

Each individual sub-project must contribute significantly to at least a few of the Initiative's goals, and the entire set of sub-projects should synergically achieve the overall goals set forth for the Initiative.

The project (US\$ 67,0 million – tranche 1) is partially financed by a GEF grant (via The World Bank) in the amount of US\$ 13,0 million for tranche 1, with co-financing from the Brazilian Government.

Project Components

The GEF Sustainable Cerrado Initiative has four components that closely follow the key thematic and cross-cutting activities proposed under the National Sustainable Cerrado Program and are consistent with GEF Strategic Objectives:

Component 1 - Conservation of the Cerrado Biodiversity - aims at increasing biodiversity conservation in the Cerrado region by: (i) strengthening the mosaic of legally protected areas (PAs) of unique biodiversity; (ii) developing pilot financial sustainability mechanisms for these PAs; and (iii) developing and implementing activities for the protection and recovery of key threatened species.

Component 2 - Sustainable Use of the Cerrado's Natural Resources - aims at the management of the rural production landscape including the sustainable use of native species, so as to improve the use of available resources and biodiversity conservation while reducing environmental impacts.

Component 3 - Institutional Strengthening and Formulation of New Public Policies – aims at: (i) formulating new public policies for the conservation and sustainable use of the Cerrado; (ii) strengthening federal, state and municipal level government agencies to manage natural resources; and (iii) selecting and using the best tools available and accessing state-of-the-art knowledge. This component also intends to enable the private sector, civil society organizations and local communities to actively participate in environmental management and in the formulation of new public policies related to the conservation and sustainable use of the Cerrado's natural resources.

Component 4 - Coordination of the National Sustainable Cerrado Initiative and Monitoring of the Biome - aims to ensure the effective and efficient implementation of the Project. It also intends to support the implementation of a publicly accessible database, containing current, geo-referenced, social and environmentally relevant information on the Cerrado biome.

Additional information

Please send email to: nucleocerrado@mma.gov.br

Foto: Leandro Cláudio Baumgarten



