

**Ministry of Science and Technology
Secretariat of Policy and Programs
on Research and Development**

Biodiversity Research Program

PPBio

Basic Document



Brasília - 2006

Ministry of Science and Technology
Secretariat for Policy and Programs on
Research and Development

Biodiversity Research Program



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Executive Summary

Objectives:

- Promote the development of research, training and capacity building of human resources and institutional strengthening in the field of biological diversity research and development, according to the Directives of the National Biodiversity Policy (Decree n° 4339 of 22 August 2002).
- Promote the dissemination of information and knowledge on the components of Brazilian biodiversity to different segments.

Specific Objectives:

- Support the Implementation and Maintenance of Biota Inventory Networks.
- Support the Maintenance, Expansion and Digitalization of Biological Collections (*ex situ* collections).
- Support Research and Development in Biodiversity Themes.
- Develop Strategic Actions for Biodiversity Research Policies.

Main Program Activities:

- Create the PPBio multidisciplinary and multi-institutional planning team;
- Establish a methodology for biological inventories based on regional inventory units (NRs – *núcleos regionais*);
- Improve the organization and management of biological collections;
- Institute an information system to manage databases of repositories of information on Brazilian biodiversity;
- Increase the dissemination of information on biological diversity to different players;
- Establish partnerships with other institutions that conduct research and development on biodiversity-derived products and processes.

Governance Structure:

- Board of Directors - President: Secretary for Policy and Programs on Research and Development – SEPED/MCT.
- Executive Management of the Program – Chief Manager for Biodiversity Policy and Programs – CGBD/SEPED/MCT.
- Executing Units – Associate Managers of the National Amazon Research Institute – INPA (*Instituto Nacional de Pesquisas da Amazônia*); of the Pará State Emílio Goeldi Museum – MPEG

(*Museu Paraense Emílio Goeldi*); and of the National Institute of the Semi-Arid Region – INSA-CF (*Instituto Nacional do Semi-Árido Celso Furtado*).

- Other Executing Units may be created as the Program expands its activities into other Brazilian biomes.



Introduction

The Biodiversity Issue in the Current International Context

The United Nations Conference on the Human Environment, held in June 1972 in Sweden, highlighted the need to review the global development standard in light of the destructive process caused by the unrestrained use of natural resources.

That meeting, which counted with the participation of developed and developing countries, except the Soviet Union and its allies, produced a declaration containing 26 principles and 109 recommendations, stressing the need of a paradigm change in country policies, which should be directed to sustainable development. This declaration made clear that the environmental issue and biodiversity conservation were closely linked to scientific, technological and industrial development, therefore requiring adjustments to allow development to occur in a sustainable manner. Among the principles established by the Conference, the following stand out:

• Economic and social development is essential for ensuring a favorable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life.

The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures.

Science and technology must be applied to the identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind.

The effect of the Stockholm Conference, the realization of social-environmental problems which became worse in the 1980's, and the perception of the multiple values of biodiversity (scientific, economic, aesthetic and strategic) led to the creation of the World Commission on Environment and Development (WCED), also known as the Brundtland Commission, which held meetings around the world. After three years, the Commission published a report which stated the need for restructuring the economic and social order in force, highlighting the importance of a new orientation for the technological development process to ensure biodiversity preservation and sustainable use.

The Brundtland Report also called for a systemic treatment of the environmental issue, urging for changes in institutional arrangements, inclusion of new players in this topic, and for the responsibility of the productive and consumptive sectors for the

use of environmental resources. The conclusions of this report provided new strength to the sustainable development paradigm, which was consolidated in the United Nations Conference on the Environment and Development (UNCED), for short, Rio-92 or ECO-92.

Rio - 92 assembled 176 States, over 100 Heads of State, close to 10,000 delegates, 1,400 NGOs and over 9,000 journalists, and produced four official documents:

- Rio Declaration on Environment and Development (containing 27 principles);

- Agenda 21 – an action plan for the environment and development in the 21st Century;

- The United Nations Framework Convention on Climate Change (UNFCCC);

- The Convention on Biological Diversity (CBD).

The CBD entered into force in 1993 and, in December 2001, over 182 States had already ratified the agreement, demonstrating the importance of the “sustainable development” theme at a global scale. The CBD is based on three objectives: a) conservation of biological diversity; b) sustainable use of its components; and c) fair and equitable sharing of benefits derived from the use of genetic resources.

In Brazil, the implementation of the Convention on Biological Diversity is guided by Decree n° 4339 of 22 August 2002, which defined the Directives for the National Biodiversity Policy.

Component 6 – Education, Public Awareness, and Information Dissemination on Biodiversity: defines directives for public education and awareness and for management and dissemination of information on biodiversity promoting public participation, including participation of indigenous peoples, *quilombolas* and other local communities, in biodiversity conservation, sustainable use of its components, and the fair and equitable sharing of benefits derived from the use of genetic resources, genetic heritage components and associated traditional knowledge;

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

The directives established for the Components must be considered for all Brazilian biomes, when appropriate. Specific directives per biome may be established in Action Plans, during the Biodiversity Policy implementation.

Justification for a Biodiversity Research Program

Biological diversity is invaluable for human survival. In addition to the environmental services it provides, such as water purification, nutrient cycling, maintenance of the dynamic equilibrium of ecosystems and of climatic conditions of the planet, biological

diversity constitutes a resource base for food, medicines, industry use, among other uses. Recent value estimates of the direct use of biodiversity by seven economic sectors suggest amounts around US\$ 500 billion to US\$ 800 billion per year, which represent business values of two large global economic sectors: software industry and oil sector.

Brazil and other 16 countries hold in their territory close to 70% of all animal and plant species in the planet, which grants them the title of mega-diverse countries. Among these, Brazil holds the largest biological diversity, being home to close to 20% of all biodiversity in the planet, which is distributed mainly in forest ecosystems. The Amazon tropical forests respond for close to 26% of all remaining forests on earth – an ecosystem which covers almost half of the Brazilian territory, and which is of strategic value for the country.

In addition to the quantitative relevance of biodiversity contained in tropical forests, the importance of biological diversity located in other biomes also stands out, such as biodiversity of the semi-arid, where soil and climate conditions have determined that, only species resistant to water and temperature stress could survive. In other words, it is in the semi-arid that estimates indicate greater probability of finding genes which, inserted in the genome of other organisms (such as bacteria) would allow their survival under conditions of environmental stress. This biological diversity results from ecological interactions that have been occurring for over 3 billion years, i.e. results from the interactions among living organisms which comprise the biota, and interactions of the biota with the physical environment.

The complexity of the task of discovering, describing, characterizing and making good use of products derived from the enormous Brazilian biological diversity, as well as to understand patterns of change in biodiversity structure and function and its impacts on human society, requires a cooperative and targeted scientific effort along several decades, which characterizes biodiversity research as a mega-science field. Thus, the establishment and maintenance of a biodiversity research agenda constitutes a strategic challenge for Brazil.

The understanding that biodiversity research is a strategic issue for the country's development is clearly identified in the support document prepared by the Brazilian Science Academy (ABC - *Academia Brasileira de Ciências*) for the National Conference on Science, Technology and Innovation – CNCT&I (September 2001, in Brasília), a concept which was reflected in various speeches, symposia and debates held during that Conference.

The importance of possessing a biodiversity research agenda in Brazil was also reflected throughout the process of constructing the National Biodiversity Strategy, under the coordination of the Ministry of the Environment – MMA, which involved several governmental sectors and sectors of the Brazilian society, and which resulted in the establishment of the Directives for the Implementation of the National Biodiversity Policy (Decree No. 4339 of 22 August 2002). Other initiatives also indicate the need for more biodiversity research, such as the priority assessment of the main Brazilian biomes promoted by the Program for the Conservation and Sustainable Use of Brazilian Biological Diversity – PROBIO, also coordinated by MMA.

The vastness of the biodiversity research agenda presents the challenge of establishing a “unifying agenda” for the next decade, which requires the design of a strategy of investments in science, technology and innovation to identify priorities, integrate expertise in several fields of knowledge, and to produce, integrate and disseminate information on biodiversity to be used for various purposes.

With this purpose, the Ministry of Science and Technology – MCT coordinated the elaboration of the Biodiversity Research Program (PPBio - *Programa de Pesquisa em Biodiversidade*), which counted with the participation of almost 40 scientists and governmental managers for science, technology and environment, and which was included in the Federal Government Multi-Year Plan (PPA 2004-2007).

The implementation of PPBio should be harmonized with other sectoral actions on biodiversity research and development, such as the Brazilian Molecular Ecology Program for the Sustainable Use of Amazon Biodiversity – PROBEM and PROBIO – coordinated by MMA, as well as state-level initiatives, such as BIOTA – FAPESP. That coordination effort towards a biodiversity research agenda is critical for a qualitative and quantitative improvement of the national research effort and for the benefit of the Brazilian society both by developing new bioproducts and bioprocesses useful for the environment, health, food and for other important economic sectors, and by improving the elaboration and implementation of public policies aimed at biodiversity conservation and sustainable use.

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PPBio Description

The Biodiversity Research Program (PPBio - *Programa de Pesquisa em Biodiversidade*) was developed by SEPED of the Ministry of Science and Technology – MCT, in accordance with the principles of the Convention on Biological Diversity and with the Directives of the National Biodiversity Policy (Decree 4339 of 22 August 2002). The Program was officially recognized by Administrative Ruling MCT n° 268, of 18 June 2004, which defines its main objective and its four specific objectives. PPBio was recently modified by Administrative Ruling MCT n° 382 of 15 June 2005.

The Program has a national scope and its initial phase will involve activities in the Amazon and Semi-Arid Regions. The Program adopts a decentralized administration model, where action implementation will be conducted in conjunction with research funding agencies and will provide direct support to research institutes and universities indicated to act as PPBio Executing Centers.

Objectives

PPBio has the central objective of coordinating regional and national expertise to expand and disseminate knowledge on Brazilian biodiversity in a

planned and coordinated manner. The specific objectives of the Program are:

I – to support the implementation and maintenance of Biota inventory networks;

II – to support the maintenance, expansion and digitization of national biological collections (*ex situ* collections);

III – to support research and development on biodiversity thematic fields;

IV – to develop strategic actions for biodiversity research policies.

Directives

The attainment of PPBio objectives follows 11 basic directives:

Directive 1: Induce the organization of biodiversity research conducted by various research centers;

Directive 2: Institute multidisciplinary and multi-institutional work groups composed by experts from different research agencies, to elaborate draft standard protocols for inventories and for the digitalization of biological collections;

Directive 3: Establish regional biological inventory units (NRs - *núcleos regionais*) for the various inventory networks;

Directive 4: Improve the organization of biological collections to integrate and disseminate information associated to biological collections;

Directive 5: Institute an integrated information system to manage databases of the information repositories, expanding access to information on Brazilian biodiversity;

Directive 6: Promote partnerships with research and development centers working on biodiversity-derived products and processes;

Directive 7: Promote strategic actions in science and technology under the Convention on Biological Diversity;

Directive 8: Support discussion for the creation of a national policy on access to databases containing information on Brazilian biological diversity;

Directive 9: Promote coordination to reverse the flow of information on biodiversity in the country, which currently favors the national to international direction;

Directive 10: Promote the training and capacity building of human resources on biodiversity research, build biodiversity research capacity, and strengthen regional research capacity;

Directive 11: Conduct Monitoring and Evaluation activities to promote Program efficiency and to subsidize new actions in the Program through the support and supervision of a Board of Directors and the advice of a Scientific Committee.

Description of PPBio Activities in the Federal Government Multi-Year Plan (PPA 2004-2007)

PPBio comprises four actions included in the PPA 2004-2007 'Science, Nature and Society' program, as follows: (1) Support the Establishment and Maintenance of Biota Inventory Networks; (2) Support the Maintenance, Expansion and Digitalization of Biological Inventories (*ex situ* collections); (3) Support Research and Development in Biodiversity Themes; (4) Develop Strategic Actions for Biodiversity Research Policies.

Activity 1 - Support the establishment and maintenance of Biota inventory networks

There is a growing demand for information to assess environmental impacts, define environmental preservation areas, protect endangered species, restore degraded areas, for bioprospection, to establish public policies and environmental legislation, among others. Although Brazilian biodiversity has been inventoried for over 180 years, the lack of systematized work methodologies and instruments to coordinate different competencies and national and international scientific initiatives, as well as the absence of mechanisms for promoting the organization of primary data – maintaining due intellectual property rights, are obstacles to streamlining and optimizing the generation of knowledge on Brazilian biodiversity, in addition to hampering the dissemination of this knowledge to society and decision makers.

To break this vicious circle it is necessary to intensify inventory activities encouraging the creation of research networks to introduce a new methodology

to the scientific community, ensuring that this methodology will be maintained through time and expanded to different institutions within the national territory. Inducing the systematization of inventory methodologies and coordinating different competencies and national and international scientific initiatives will allow the streamlining and optimization of the generation and use of knowledge on Brazilian biodiversity.

The lack of a standard work scale, standard georeferencing methodology and definition of study areas, not only favor duplication of data gathering efforts and result in waste of public resources, but also impedes the construction of a biodiversity information system, which is essential to the knowledge, use and conservation of this heritage.

The adoption of standard biological inventory procedures will occur through the use of protocols containing specific information fields to be completed by every researcher directly or indirectly supported by the Government, a method successfully tested by the BIOTA – FAPESP Program. The adoption of the standardized protocols will allow biodiversity data and information to be organized and stored in databases, which will be accessible to various sectors of society, including the Science and Technology sector, which will be able to better plan inventory activities and thus streamline the generation of knowledge on biological diversity.

General Objective

To institute regional inventory networks which will apply methodologies allowing the streamlining and organization of the generation of knowledge on

Brazilian biodiversity, harmonizing and coordinating the various inventory initiatives, allowing the generated knowledge to integrate databases serving multiple users.

Specific Objectives

- Define the location and structure of regional inventory units;
- Define priority areas for inventory initiatives;
- Establish basic infrastructure at regional units;
- Train and institute work teams at regional units;
- Establish a sampling designs and inventory protocols to integrate and optimize collection efforts; and
- Set criteria for data gathering, organization and protection through a responsibility term.

Activity 2 - Support the modernization of biological collections (*ex situ* collections)

The biological collections held by teaching and research institutions in the country comprise an information and knowledge heritage of over 180 years of research on Brazilian fauna, flora and micro-biota, with collections holding close to 26 million animals, 5 million plants and 80,500 micro-organisms. These biological collections possess growing scientific, economic and educational importance, in addition to

great potential for supporting the elaboration of public policies aimed at the sustainable use of the country's natural resources.

However, for the last 20 years the Brazilian government has not provided effective or continuous support to maintain, expand and modernize this national heritage. As a result, the national biological collections has lost specimens due to the lack of preservation conditions. Some of these specimens are historical material of crucial importance to the country. Thus neglected, the Brazilian biological collections have not been able to keep up with the digitalization process that has been occurring throughout the world and, as a consequence, cannot supply the demand of several Brazilian sectors.

The improvement of inventory activities has required better and larger facilities so as biological collections can properly receive, treat, mount, conserve and identify collected material, in addition to provide information on biodiversity to multiple users, among which the agencies responsible for managing biodiversity, universities and schools, the private sector and the general public.

The strengthening of national biological collections requires measures for the recuperation of collections endangered by insufficient conservation conditions, to expand capacity for appropriate storage of new biological material, and to digitize and organize data on existing material.

The digitalization of biological data contained in the main collections in the country and the establishment of links among these will improve Brazilian capacity to learn and provide information on

biodiversity components (fauna, flora, micro-organisms and culture collections). The information digitalization process already in progress at national and international biological collections will facilitate the sharing of accumulated knowledge on Brazilian biodiversity by researchers from the various regions of the country, which will streamline the generation of knowledge and will allow better planning and hierarchy of inventory priorities and biodiversity research lines. Improving management of biodiversity information and knowledge will also allow predictions of changes in distribution patterns of living organisms caused by human action and by evolutionary processes, and assessing the impacts of these changes on society actions and organization.

This activity also intends to create means to institute a national policy for managing biological collections. Instituting a policy for biological collections, elaborated in partnership with the main players within this theme – scientific institutions and institutions holding this national heritage, will qualify the country to manage knowledge on its biodiversity, an essential step towards monitoring actions derived from the access to national genetic heritage and to obtain the right of sharing benefits derived from the use of these resources.

General Objective

To create means to institute a national policy for managing biological collections, while promoting their maintenance, expansion and the connection among these collections.

Specific Objectives

- Institute an advisory group composed by experts on different taxa and representing various

regions of the country, to present directives for a policy on biological collections;

- Identify reference collections which may be considered representative of the Brazilian biomes;
- Promote the maintenance and expansion of these collections;
- Provide specific support to the training of experts on biological collection management;
- Promote integration of these collections and of international collections containing Brazilian biodiversity specimens; and
- Promote the digitalization of biological collections (*ex situ* collections) using computer technology designed for biodiversity.

Activity 3 - Support research and development on biodiversity themes

The knowledge and characterization of Brazilian biodiversity is an enormous challenge, given its genetic, species and ecosystem variability and, above all, the country's limitations related to available funding and qualified human resources to study and characterize biodiversity.

Facing this challenge demands adopting a research agenda, which should require continuous and innovative efforts to train and qualify human resources in various high-level areas, such as biotechnology, taxonomy and associated new techniques, computer technology for biodiversity, among others, as well as medium level areas, such as para-taxonomy. Without

this qualification of human resources the country will increase its scientific and technological dependence and will not secure the necessary conditions for exerting sovereignty over the biological resources it possesses, as supported by the Convention on Biological Diversity.

The implementation strategy for this agenda is to institute thematic research networks, which integrate the actions of researchers from various fields of knowledge and from different regions of the country, allowing stronger focus on training of human resources, improving synergy of research activities and the decentralization of scientific capacity for identification, characterization, valuation and sustainable use of biodiversity.

General Objective

To institute a “unifying agenda” capable of indicating strategies and integrating expertise from different fields of knowledge such as botany, zoology, microbiology, entomology, ecology, paleontology, genetics, molecular biology and other areas related to the study of biodiversity, establishing research networks with common purposes to conduct research on biodiversity identification, characterization, valuation and sustainable use.

Specific Objectives

To structure research networks to systematize knowledge, characterize biodiversity components and develop sustainable management systems for these components, with associated activities of training and qualification of human resources;

To structure research networks to develop knowledge and research on new uses of biodiversity, with associated activities of training and qualification of human resources; and

To disseminate knowledge to different target audiences, especially through the coordination of research networks with institutions capable of developing and innovating products and processes derived from biodiversity.

Activity 4 - Develop Strategic Actions for biodiversity Research Policies

CBD requires science and technology actions in the implementation of its thematic work programs: (a) agricultural biodiversity; (b) dry and sub-humid lands biodiversity; (c) forest biodiversity; (d) inland waters biodiversity; (e) island biodiversity; (f) marine and coastal biodiversity; (g) mountain biodiversity. Science and technology actions are also essential in crosscutting programs of the Convention, such as the Global Taxonomy Initiative (GTI); and the Technology Transfer and Cooperation Program (TTCP).

For the past 10 years, the science and technology sector has remained in the background during the setting of priorities and the implementation of the Convention on Biological Diversity, and the lack of a work agenda and appropriate investments in research became an obstacle to the effective attainment of CBD objectives. In short, after over a decade of implementation of the Convention, there is little certainty to state what is being effectively conserved, especially in the mega-diverse regions, or what is being lost at the species and genetic levels of biodiversity.

Thus, the position defended is that if science and technology are not directly involved in CBD implementation, it will be very difficult to effectively achieve its objectives. For that, it is fundamental to obtain the involvement of the scientific community, especially from mega-diverse countries, in the specification and implementation of the action plans of CBD programs.

For that, PPBio proposes that the national scientific community participates more actively in the design of public policies related to biodiversity, which are strongly influenced by international movements and initiatives, and which are designed with inexpensive contribution from Brazilian science. The advice of Brazilian scientists and technologists in CBD meetings and other relevant forums is essential for the country to appropriately influence the research priorities defined in these events, which later translate into investment priorities for international agencies. The participation of Brazilian researchers in this process will qualify the country to raise international funds for biodiversity research, and enhance international cooperation.

On this same line, actions should be developed to disseminate the recommendations and decisions of the Conference of the Parties to the Convention on Biological Diversity (COP) – where Brazil has a seat, and seek ways of incorporating these decisions and recommendations into the various sectoral policies and programs related to biodiversity.

General Objective

To define and elaborate projects and actions for scientific development and biodiversity technology

transfer and cooperation, according to Brazil's responsibilities under the Convention on Biological Diversity and specific protocols in the field of science and technology.

Specific Objectives

- Conduct studies and diagnoses included in the CBD work programs;
- Support the participation of experts in international meetings and forums related to CBD implementation;
- Organize workshops and technical meetings with experts and researchers with the purpose of disseminating CBD information, recommendations and decisions, planning actions and expanding partnerships for the execution of projects; and
- Elaborate project proposals, including applications for international funds from GEF, which is the CBD financial mechanism.



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Implementation Strategy

Decentralization Strategy

PPBio implementation occurs through a decentralization strategy, which should be executed using different means, according to the characteristics of Program components and the different realities of the country.

Decentralization of activities is obtained through specific administrative and legal instruments, signed between the Program supervising entity (MCT) and research institutions qualified to coordinate efforts with other research and teaching institutions working with biodiversity in specific biomes. It is through this coordination process that the coordination of research activities can improve, expand and focus on the training and qualification of human resources, as well as promote the retention of qualified staff in regions of the country with greater shortage of qualified professionals.

As decentralization assumes the existence of a partnership between the coordinating and the executing agencies, it is necessary to develop a plan identifying objectives and targets to be achieved, as well as the means to accomplish them, thus allowing the supervising agency to monitor and evaluate Program progress, as well as to make any necessary adjustments.

MCT considers that the national research Institutes connected to its administration should preferably be chosen as the executing institutions responsible for implementing the Program, in coordination with other teaching, research and development institutions. The decentralization of resources directly to the research institutes connected to MCT is important for the consolidation of their research agenda in each of these institutions, thus providing them with matching funds for international cooperation projects and providing means to increase their scientific and providing means political importance in the regions where they are located.

Recognizing that the strategy of selecting MCT institutes as executing agencies has limited reach, PPBio foresees other means of decentralization, both through agreements with research support agencies and through particular legal instruments with executing agencies at the state level.

Governance Structure

Program structure is managed by an Executive Manager, supervised by a Board of Directors and advised by a Scientific Committee.

PPBio will have no set deadline and will be evaluated every two years by an independent Commission composed by experts appointed by the Minister for Science and Technology, and which should elaborate a report summarizing recommendations for the future of the Program.

Management Nucleus

SEPED - MCT supervises PPBio through a Board of Directors composed as follows:

- Secretary for Policies and Programs on Research and Development, who presides the Board;
- Chief Manager for Biodiversity of the Secretariat for Policies and Programs on Research and Development – SEPED;
- Director of the National Amazon Research Institute – INPA;
- Director of the State of Pará Goeldi Museum – MPEG;
- Director-General of the Mamirauá Sustainable Development Institute – IDSM;
- Director of the National Institute for the Semi-Arid Region – INSA;
- One representative appointed by the National Forum of the Research Support Foundations - FAPS; and
- Up to three representatives of other institutions involved with biological diversity research and development and the directives of the National Biodiversity Policy.

Responsibilities of the Board of Directors

- Support the implementation and maintenance of Biota inventory networks;
- Support the maintenance, expansion and digitalization of biological collections in the country (*ex situ* collections);
- Approve the macro-objectives and implementation strategies to be achieved by PPBio projects;

- Approve the data use policy of the Program, aiming at the broad dissemination of these data while respecting priorities;
- Approve the participation of new institutions in PPBio;
- Approve and define fundraising policies and strategies for PPBio;
- Approve, monitor and evaluate management of available resources assigned by the Executive Manager to the various projects connected to the Program, according to the Federal Government Multi-Annual Plan and the directives of the other funding sources;
- Monitor and evaluate, if necessary and through external advisers, the execution of activities defined by PPBio; and
- Indicate the members of the Scientific Committee.

Executive Management

PPBio management is the responsibility of the General Management Unit of Biodiversity Policies and Programs – CGBD. The Executive Manager is the Chief Manager of the CGBD.

Coordenação Geral de Políticas e Programas em Biodiversidade - *CGBD*

Ministério da Ciência e Tecnologia - Esplanada dos Ministérios Bloco E sala 215 - Brasília DF - 70067-900 - Tel. (61) 3317 7612 - Fax (61) 3317 7766 - E-mail: biodiversidade @mct.gov.br

Responsibilities of the Executive Manager

- Indicate the Associate Managers to be assigned by the Board of Directors. The Associate Managers are connected to the Executing Units appointed by Administrative Ruling MCT n.º 268, of 18 June 2004, that will assist the Executive Manager in the management of PPBio;
- Prepare matters to be submitted to the analysis and approval of the Board of Directors;
- Define the competencies of his/her Associate Managers and appoint a Deputy Executive Manager;
- Make any necessary decision for Program execution and good operation, respecting the competencies of the participating institutions and the decisions of the Board of Directors and Scientific Committee;
- Represent or assign a representative before other institutions, work groups and events which are important for the Program;
- Coordinate integration among participating institutions and researchers, promoting the multidisciplinary and multi-institutional approach of PPBio;
- Together with the Secretary for Policies and Programs on Research and Development, coordinate PPBio integration with public programs and policies; and
- Fulfill the decisions of the Board of Directors.

Scientific Committee

This is a PPBio adviser agency composed by five researchers from different fields of knowledge representing the scientific community, two representatives of research support agencies, the Study and Projects Financing Agency (FINEP - *Financiadora de Estudos e Projetos*), and the National Scientific and Technological Development Council (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*).

Responsibilities of the Scientific Committee

- Propose macro-objectives to be achieved by the Program;
- Propose use policies for data collected within the Program aiming at their broad dissemination, respecting the priority of their authors;
- Propose the participation of new institutions in the Program, to be approved by the Board of Directors;
- Propose implementation strategies of projects that are connected to PPBio;
- Advise the Executive Manager on the definition, monitoring, evaluation and revision of Program agenda, respecting the guidance of the Board of Directors;
- Collaborate with the Executive Manager in encouraging the participation of researchers and institutions, both internal and external to MCT, in the projects;

- Contribute to the integration of PPBio's activities with other cognate projects; and
- Propose ways and means to bridge PPBio's results with the elaboration, implementation, monitoring and evaluation of public policies.

Executing Units

In the Amazon Region, PPBio implementation counts with the support of INPA and MPEG. As Program Executing Units, these institutions promote cooperation among regional and national learning, research and development agencies working in the Amazon Region. In the semi-arid region, PPBio supports a research network of the Millennium Institute created by the Scientific and Technological Development Support Program (PADCT). This network should be connected to the National Institute for the Semi-Arid Region. In other biomes, PPBio implementation may be adapted according to peculiarities and characteristics of each region.

The distribution of responsibilities among Executing Units does not imply that they should work separately, but rather, that they should work under the same management, but maintaining specific goals according to the execution capacity of each unit. These goals should allow monitoring and evaluation by the Management Nucleus. Thus, the Executing Units should permanently coordinate among themselves to allow PPBio to achieve its central objective.

- Western Amazon Executing Unit - INPA - Instituto Nacional de Pesquisas da Amazônia - Av. André Araújo, 2.936, Petrópolis - Manaus, AM - CEP 69060-001

- Eastern Amazon Executing Unit - MPEG - Museu Paraense Emílio Goeldi - Av. Magalhães Barata, 376, São Braz – Belém, PA - CEP 66040-170
- Semi-Arid Region Executing Unit - INSA - Instituto Nacional do Semi-Árido

Responsibilities of the Executing Units

- Promote the regional coordination;
- Indicate an Executive Group in charge of elaborating the work program proposal;
- Indicate a manager responsible for the physical and finance monitoring of work plan activities;
- Implement the work program as agreed in the Terms of Responsibility;
- Present reports and clarifications to the Management Nucleus whenever requested or when the Executing Unit deems necessary; and
- Elaborate technical and financial reports to the PPBio Management Nucleus.

Competence formalization and assignment to Executing Units is achieved through specific legal instruments defining the responsibilities of each party, and to which a work program is attached, delineating the planned activities.

PPBio Executing Units are responsible for elaborating a strategic plan, which includes and defines:

- A diagnosis of the status and needs of each region regarding biodiversity studies and use, and the necessary human resources, indicating actions to be implemented;
- The appointment of regional research nuclei and priority areas for inventory;
- Priority taxonomic groups, with accompanying justification according to institutional competence criteria, social needs and relevant issues, regional technologies and most probable scenarios;
- Priority research lines;
- Cooperation possibilities with other institutions, promoting effective use of regional human resources;
- Priorities for human resources training and qualification in the region;
- Action plan including a 10-year timeline and the necessary resources;
- Regional partnerships or cooperation possibilities with other institutions to maximize the generation of results, if possible implementing a regional plan to optimize the use of human resources available in the region;
- Possibilities of integrating graduate programs involving multiple institutions and establishing research priorities to maximize knowledge on regional biodiversity in its various aspects;



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Implementation Instruments

The Program has four implementation mechanisms: Management Terms of Responsibility, Agreement with public or private institutions, Research Project Grant, and Management Contract.

Management Terms of Responsibility (TCG - Termo de Compromisso de Gestão

Instrument designed for activity decentralization when the PPBio Executing Units belong to the Ministry structure. The TCG defines the responsibilities of each party (Management Nucleus and Executing Units) and establishes a work program with a detailed activity plan.

Agreement with public or private institutions

This is the legal instrument MCT uses to decentralize activities to Executing Units that are not part of its structure.

According to the definition contained in Normative Ruling 1/97/STN, the agreement is an instrument that organizes the transfer of public resources and which has a public agency, of direct or indirect federal administration, as one of the parties. This instrument aims at the execution of work programs, projects or activities, or events of mutual interest, under a cooperation regime.

There are two reporting mechanisms: partial reports for each transfer of funds and a final report. Transfer of funds is suspended when there is no proof of good and regular use of monies already received, when funds are used for purposes different than those agreed, unjustified delay in completing planned phases, violation of Public Administration principles, or non-compliance with clauses or conditions of the agreement. Causes for terminating the agreement are those where the use of funds does not comply with the work plan, funds are invested in a banking institution different from those established by Normative Ruling 1/97/STN, and absence of partial and final reports.

Research project grant

This is one of the forms of support provided by CNPq and has the objective of individually supporting the development of projects with scientific and technological innovation characteristics, conducted by qualified research group.

To request this support the research group must present a completed CNPq unified Form, *curriculum vitae* in the Lattes format, a research project containing title, introduction (background, motivation, state of the art), objectives, methodology, physical and execution timelines, detailed budget and references, and the data that will compose the Terms of Provision and Acceptance of Financial Support to a Scientific and/or Technological Research Project.

The project receives a technical opinion from the PPBio Executive Management, which is based on an *Ad hoc* opinion. The projects selected to receive support are handed by CGBD to CNPq, together with all

documents mentioned above, and a request for credit decentralization.

The monitoring and evaluation of project performance will be conducted by CNPq and by the PPBio Managing Nucleus, that will take actions to assess the technical reports on project activities and the financial reports concerning all received funds, according to the CNPq Reporting Manual.

Management Contract for Strategic Actions

The Ministry of Science and Technology maintains a Management Contract with the Management and Strategic Studies Center (CGEE - *Centro de Gestão e Estudos Estratégicos*). Considering that PPBio activities related to the elaboration of documents and execution of activities related to the implementation of the responsibilities under the Convention on Biological Diversity are a strategic component of the Program, these activities should be decentralized to CGEE through specific products to be defined in a Management Contract.

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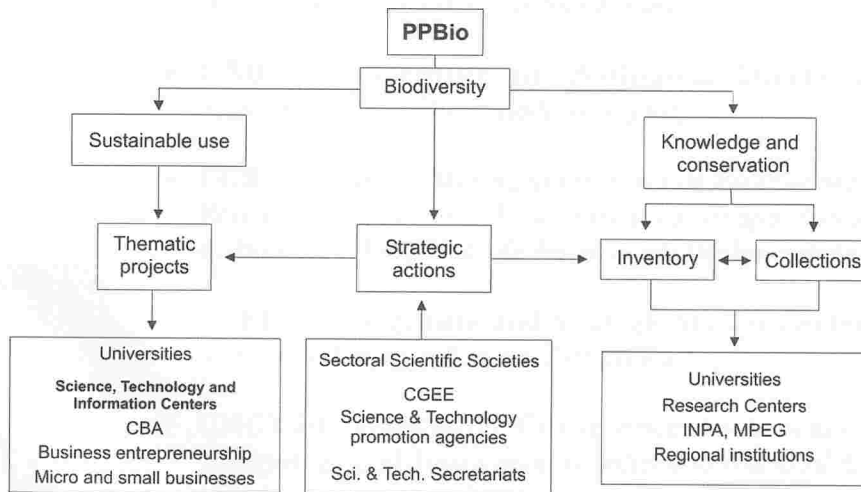
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Connection to other programs



Connection to other programs



List of Abbreviations and Acronyms

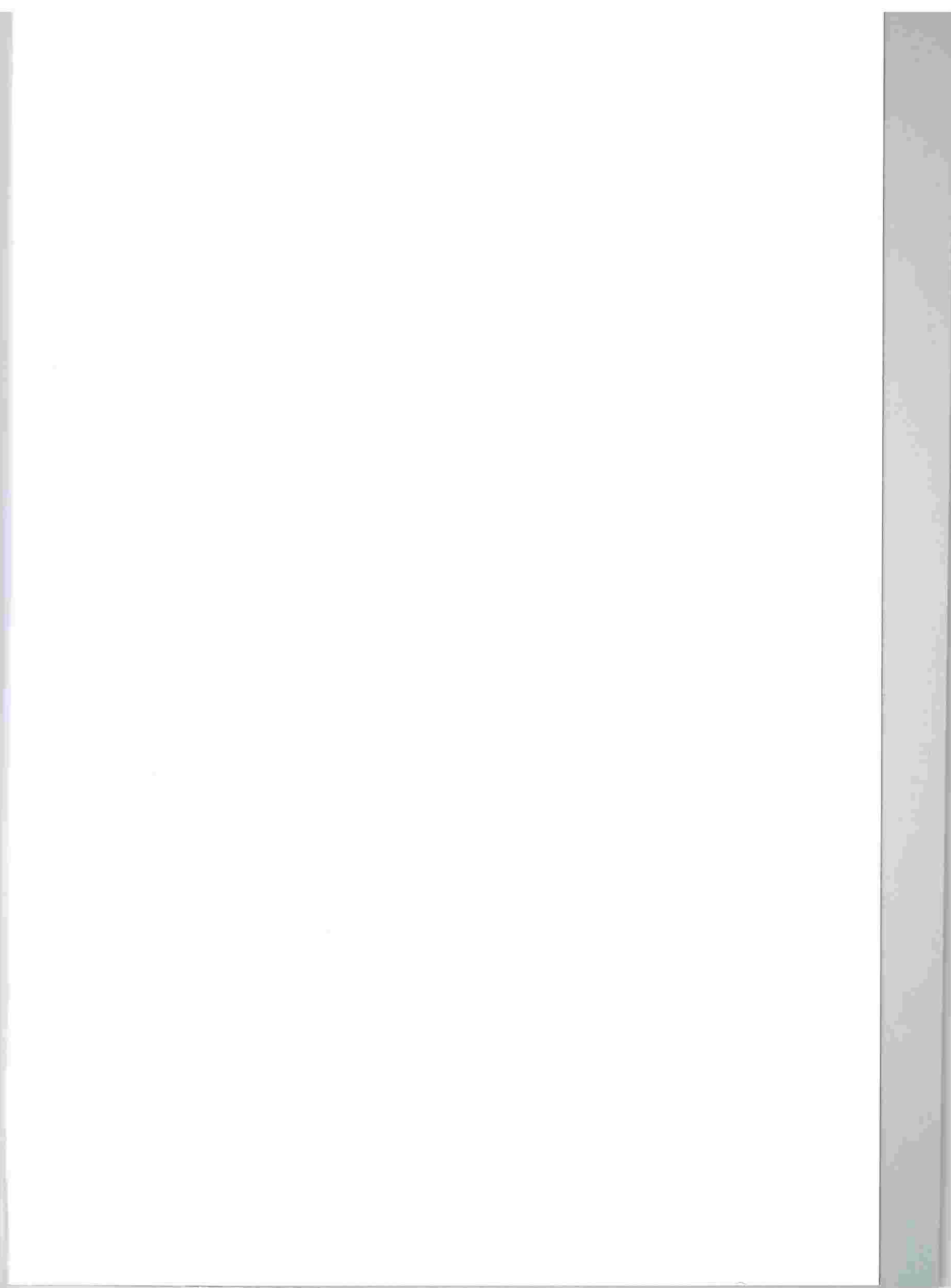
- **BIOTA-FAPESP** – Research Program on São Paulo Biodiversity Characterization, Conservation and Sustainable Use (*Programa de Pesquisas em Caracterização, Conservação e Uso Sustentável da Biodiversidade do Estado de São Paulo*)
- **CBD** – Convention on Biological Diversity (*Convenção sobre Diversidade Biológica*)
- **CGBD** – General Management Unit of Biodiversity Research Policies and Programs (*Coordenação Geral de Políticas e Programas de Pesquisa em Biodiversidade*)
- **CGEE** – Management and Strategic Studies Center (*Centro de Gestão e Estudos Estratégicos*)
- **CNCT&I** – National Conference on Science, Technology and Innovation (*Conferência Nacional de Ciência, Tecnologia e Inovação*)
- **CNPq** – National Scientific and Technological Development Council (*Conselho Nacional de Desenvolvimento Científico e Tecnológico*)
- **C&T** – Science and Technology (*Ciência e Tecnologia*)
- **EMBRAPA** – Brazilian Company for Agriculture and Livestock Research (*Empresa Brasileira de Pesquisa Agropecuária*)

- **GEF** - Global Environment Facility
- **IBAMA** – Brazilian Institute for the Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*)
- **IEPA** – Amapá State Institute (*Instituto Estadual do Estado do Amapá*)
- **IN** – Normative Ruling (*Instrução Normativa*)
- **INPA** – National Amazon Research Institute (*Instituto Nacional de Pesquisas da Amazônia*)
- **MCT** – Ministry of Science and Technology (*Ministério da Ciência e Tecnologia*)
- **MMA/SBF** – Ministry of the Environment – Secretariat of Biodiversity and Forests (*Ministério do Meio Ambiente - Secretaria de Biodiversidade e Florestas*)
- **MPEG** – State of Pará Emílio Goeldi Museum (*Museu Paraense Emílio Goeldi*)
- **NRs** – Regional Units (*Núcleos Regionais*)
- **P&D** – Research and Development (*Pesquisa e Desenvolvimento*)
- **PPBio** – Biodiversity Research Program (*Programa de Pesquisa em Biodiversidade*)
- **PCTT** – Technology Transfer and Cooperation Program (*Programa de Cooperação e Transferência de Tecnologia*)
- **PROBEM** – Brazilian Molecular Ecology Program

for the Sustainable Use of Amazon Biodiversity
(*Programa Brasileiro de Ecologia Molecular para Uso Sustentável da Biodiversidade da Amazônia*)

- **PROBIO** – Program for the Conservation and Sustainable Use of Brazilian Biological Diversity (*Programa de Conservação e Utilização Sustentável da Diversidade Biológica Brasileira*)
- **SBPC** – Brazilian Society for the Progress of Science (*Sociedade Brasileira para o Progresso a Ciência*)
- **SEPED** – Secretariat for Policies and Programs on Research and Development (*Secretaria de Políticas e Programas de Pesquisa e Desenvolvimento*)
- **UEA** – Amazonas State University (*Universidade Estadual do Amazonas*)
- **UFAM** – Amazonas Federal University (*Universidade Federal do Amazonas*)
- **UFPA** – Pará State University (*Universidade Federal do Pará*)
- **UFRA** – Amazon Rural Federal University (*Universidade Federal Rural da Amazônia*)
- **UFRR** – Roraima Federal University (*Universidade Federal de Roraima*)

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