THE BRAZILIAN POLLINATORS INITIATIVE: STATUS & PROPOSALS

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Workshop on Solitary Bees: Conservation, Rearing and Management for Pollination
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In October 1998 the Brazilian Ministry of Environment (MMA) held an international workshop of experts, the "Workshop on the Conservation and Sustainable use of Pollinators in Agriculture, with Emphasis on Bees", to propose a framework for an International Initiative on Pollinators as a key element in the Convention on Biological Diversity (CBD) thematic program of work on Agricultural Biological Diversity. A total of 61 scientists attended it from 15 countries and 5 International organizations.

As a consequence of this meeting a document was produced, entitled "The Sao Paulo Declaration on Pollinators", that was endorsed in May 2000 by the fifth Conference of the Parties of the Convention on Biological Diversity (COP5), held in Nairobi (section II of the decision v/5, that reviewed the implementation of decisions III/11 and IV/6 on the program of work on Agricultural Biological Diversity).

COP 5 established an "International Initiative for the Conservation and Sustainable Use of Pollinators", hereafter referred to as the "International Pollinators Initiative"

An Action Plan was then prepared by FAO and the CBD Secretariat, based on the "São Paulo declaration on Pollinators" document, was endorsed by SBSTTA7, and recommended for adoption by CBD COP 6.

The Plan of Action of the IPI was accepted by member countries and adopted at COP 6 (decision VI/5).

The Brazilian Pollinators Initiative (BPI) was officially established during the biannual meeting of Bees in Ribeirão Preto, organized by the University of Sao Paulo, in September 2000.

Leading this Initiative were the Brazilian Ministry of Environment, the University of São Paulo and the Brazilian Corporation of Agricultural Research.

An initial steering committee was formed, and began to work in a national agenda.

To follow its agenda, the Brazilian Pollinator Initiative (BPI), under the facilitation of FAO, participated in the preparation of project proposal submitted to the Global Environmental Facility (GEF) for funding, called "Conservation and Management of Pollinators for Sustainable Agriculture through an Ecosystem Approach", together with the African Pollinators Initiative and the ICIMOD, in South Asia.

Parallel to the project development to GEF, several other activities characterized this initial phase of BPI. Among them, should be mentioned:

the Pollinators Symposium at the XXI International Congress of Entomology, at Iguassu Falls, (Paraná State, Brazil) in July 2000, funded by MMA;

the BPI sessions at the Biennial Bee Meetings, organized by USP at Ribeirão Preto (São Paulo State, Brazil) in September 2000 & September 2002;

the publication of the book "Pollinating Bees: the Conservation link between Agriculture and Nature", funded by MMA, 2002;

the publication of the book "Brazilian Bees, Systematics and Identification", funded by MMA and Fundação Araucaria, 2002;

the "World Bees Checklist" Workshop, held in Indaiatuba (S. Paulo State, Brazil) October 2002 (as part of the "*Trends and Developments in Biodiversity Informatics Forum*")

the inclusion of BPI in the Federal Government Multi-Year Work Program for 2004-7, within the program of work of MMA;

the public call for projects on pollinators sustainable use, MMA September 2003 and January 2004;

a MOU between MMA & EMBRAPA on Biodiversity Research, October 2003;

the EMBRAPA survey of activities and researchers on pollinators, 2003;

the "São Paulo Declaration on Pollinators plus 5 Forum", 2003, funded by FAO, MMA and USP, with two workshops:

Standard Methodologies Workshop &

Pollinators Initiatives and the role of Information Technology: building synergism and cooperation.

The São Paulo Declaration Forum plus 5

put together the regional pollinators initiatives and

promoted the first discussion on the role of Information Technology in the Pollinators Initiatives.

77 participants from 12 countries (Brazil, Canada, Colombia, Germany, Ghana, Italy, Kenya, Panama, Nepal, South Africa, United States of America, United Kingdom) joined these meetings.

The standard methodology workshop

addressed the methods related to pollinator-mediated gene flow; to bee surveys and monitoring of bees as pollinators in natural landscapes; bee management for pollination purposes.

The talks presented also focused the state of the art of each regional Initiative, as well as methods used to evaluate the pollinators decline and status, their efficiency and number in some crops.

The IT workshop addressed the importance of the global facilities (as GBIF and other current services, for example ITIS), as tools for supporting and to join the local knowledge on bee names, checklists and regional catalogs, providing knowledge for policy makers.

Other participations of BPI were in workshops realized in 2003 & 2004:

the *Mabula workshop*, held in South Africa, in 2002, for the development of "A guideline for the development of a Legal and Institutional Framework for Pollinator Conservation";

the CGIAR annual meeting, held in Nairobi, Kenya, in 2003;

the APIMONDIA meeting, held in Costa Rica, in February 2004.

The "*International Workshop on Solitary bees and Their role in Pollination*", to be held in the State of Ceará, in April 2004, is the second achievement of BPI for this year.

Brazilian Pollinators Initiative
MMA Public Call on Pollinators Management 2003-2004

Public Call made by the Brazilian Ministry of the Environment - MMA, through the National Biodiversity Project – PROBIO,

to support projects to develop management plans for native pollinators of plants of economic value (cultivated or explored through extractivism).

The Public Call was issued in two stages in September 2003 and January 2004.

A total of 53 proposals were received and 13 projects were selected and are being contracted, with a total sum of

R$ 1,543,702.80 (equivalent to approximately US$ 500,000.00) of financing from MMA plus counterpart funding from the implementing organizations.

These 13 projects will be implemented till the first half of 2005 in the following regions and states of Brazil (plants indicated in parenthesis):

Amazon Region (States of Amazonas (cupuassu) and Pará (assaí palm));

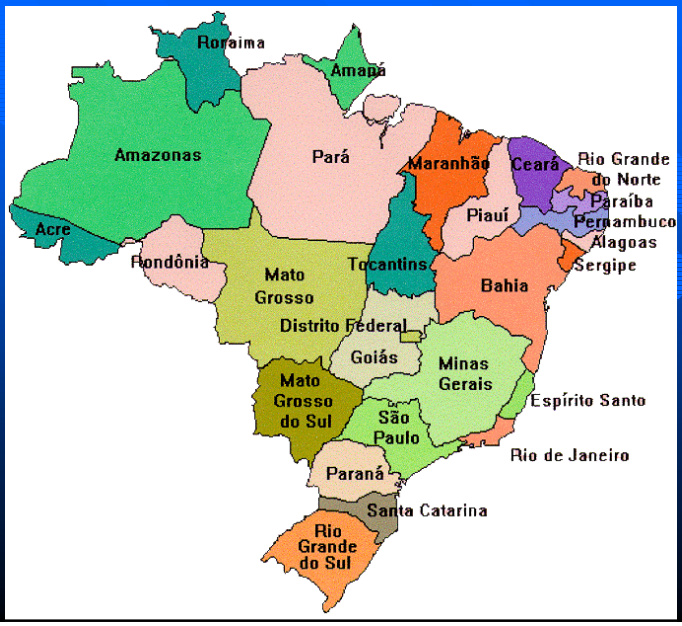
Northeast Region (States of Maranhão (murici), Pernambuco (cotton, soursop, acerola, mangaba, mango and passion fruit), Bahia (guava, mango, umbu and passion fruit);

Central Region (State of Mato Grosso (araticum));

Southeast Region (state of Minas Gerais (passion fruit and tomato), Rio de Janeiro (passion fruit) and São Paulo (tomato));

Southern Region (State of Paraná (passion fruit))

Federated States of Brazil (source: IBGE)



The target plants and pollinators of these 13 projects are:

TARGET PLANTS	TARGET POLLINATORS	STATES
Annona muricata – "graviola" or soursop (Annonaceae)	*Cotalus* spp (Nitidulidae, Coleoptera)	Pernambuco
Annona crassifolia – "araticum" or marolo (Annonaceae)	*Cyclocephala* spp (Scarabaeidae, Coleoptera)	Mato Grosso
Hancornia speciosa – "mangaba" (Apocynaceae)	Sphingidae & Hesperidae (Lepidoptera)	Pernambuco

The target plants and pollinators of these 13 projects are:

TARGET PLANTS	TARGET POLLINATORS	STATES
Spondias tuberosa – "umbu" or imbu (Anacardiaceae)	*Frieseomelitta* spp & *Trigona* spp (Meliponinae, Apidae, Hymenoptera)	Bahia
Mangifera indica – "manga" or mango (Anacardiaceae)	Diptera & Lepidoptera	Pernambuco & Bahia
Gossypium hirsutum – "algodão" or cotton (Malvaceae)	*Bombus* spp & *Xylocopa* spp (Apidae, Hymenoptera)	Pernambuco

The target plants and pollinators of these 13 projects are:

TARGET PLANTS	TARGET POLLINATORS	STATES
Byrsonima crassifolia – "murici" or nance (Malpighiaceae)	*Centris* spp (Apidae, Hymenoptera)	Maranhão
Malpighia emarginata – "acerola" or west indian cherry (Malpighiaceae)	*Centris* spp & other Centridini (Apidae, Hymenoptera)	Pernambuco
Theobroma grandiflorum – "cupuaçu" or cupuassu (Sterculiaceae)	*Plebeia* spp, *Paratrigona* spp & *Frieseomelitta* spp (Meliponinae, Apidae, Hymenoptera)	Amazonas

The target plants and pollinators of these 13 projects are:

TARGET PLANTS	TARGET POLLINATORS	STATES
Psidium guajava – "goiaba" or guava (Myrtaceae)	*Frieseomelitta* spp (Meliponinae, Apidae, Hymenoptera)	Pernambuco
Passiflora edulis, P. alata & P. cincinnata - "maracujá" or passion fruit (Passifloraceae)	*Xylocopa* spp, *Centris* spp, *Epicharis* spp & *Eulaema* (Apidae, Hymenoptera)	Pernambuco, Bahia, Minas Gerais, Rio de Janeiro & Paraná
Lycopersicon esculentum – "tomate" or tomato (Solanaceae)	*Melipona* spp (Meliponinae, Apidae, Hym.) & Halictidae (Hymenoptera)	Minas Gerais & São Paulo
Euterpe oleraceae – "açaí" or assai palm (Palmae)	*Melipona* spp (Meliponinae, Apidae, Hymenoptera)	Pará

References

Dias, B.F.S. & A. Raw (eds.), 1999. The São Paulo Declaration on Pollinators. Brasília, Ministry of the Environment, 73p. http://www.biodiv.org/doc/ref/agr-pollinator-rpt.pdf

Kevan, P., V. Imperatriz-Fonseca & P.Jones (eds.), 2002. Pollinating Bees: the Conservation link between Agriculture and Nature. Brasília, Ministry of the Environment, 313 p. http://eco.ib.usp.br/beelab/ibp/livro_polinizadores.htm

Silveira, F.A; G. A R. Melo & E.A.B. Almeida- 2002. Abelhas brasileiras. Sistemática e identificação. Belo Horizonte, Fernando A. Silveira, 253p.

References

World Bees Checklist workshop
http://www.cria.org.br/eventos/tdbi/wbcw

The São Paulo Declaration on Pollinators Plus 5 Forum
http://graviola.pcs.usp.br/%7Ewebbee/ibp/php/workshop/index.html

International Workshop on solitary bees and their role in Pollination
http://eco.ib.usp.br/beelab/ibp/pdfs/programa_abelhas_solitarias.pdf

Lead Organizations of BPI:

USP – University of São Paulo, the leading university in Brazil, where over 1500 PhDs are diplomed each year, which harbors two internationally recognized centers of excellence on bee research and training (at the cities of São Paulo and Ribeirão Preto) and a worldclass School of Agriculture – ESALQ (at the city of Piracicaba);
[website: www.usp.br]
USP Bee Lab website: eco.ib.usp.br/beelab/
USP BeeScience Brasil website:
rge.fmrp.usp.br/beescience/

Brazilian Corporation for Agriculture Research – EMBRAPA, the leading tropical agriculture research organization in the world which maintains a worldclass network of over 40 agricultural research centers and is responsible, in partnerships with Brazilian universities, for about 10% of all scientific publications on agriculture worldwide;
[website: www.embrapa.br]
EMBRAPA/ENVIRONMENT website:
www.embrapa.br/meioamb.htm

MMA – Brazilian Ministry of the Environment, which coordinates the National System/Network of Environmental Organizations (SISNAMA), coordinates the National Biodiversity Policy and the National Biodiversity Program (PRONABIO), being the national technical focal point to the Convention on Biological Diversity, and which coordinates, in partnership with the Ministry of Education, the National Program for Environmental Education. [website: www.mma.gov.br]
MMA Biodiversity CHM website:
www.mma.gov.br/biodiversidade/]
MMA/Environmental Education:
www.mma.gov.br/port/sdi/ea/index.cfm

BPI Co-ordination Mechanism and Focal-Points for PDF-B:
Initial Steering Committee:

Braulio Ferreira de Souza Dias, MMA
Vera Lucia Imperatriz Fonseca, USP
Lionel Segui Gonçalves, USP
Afonso Valois, EMBRAPA
Marina Siqueira Castro, EBDA
Fernando Silveira, UFMG
Breno Freitas, UFC

BPI Components/Sub-Projects,
PDF-B Activities & Full Projects Outcomes:
PROJECT CO-ORDINATION

PROPOSED PDF-B ACTIVITIES:
-Steering Committee Meetings
-Assistant Co-ordinator
-Equipment & supplies
-Communication

PROPOSED FULL PROJECT PRODUCTS:
-Steering Committee Meetings
-Assistant Co-ordinator
-Equipment & supplies
-Communication

BPI PROPOSED SUB-PROJECT 1:
BEE SURVEYS & MONITORING
PROPOSED PDF-B ACTIVITIES:

-Workshop to define standard survey methods & sites
-Publish survey methods manual
-Assess existing surveys
-Pilot test of proposed assessment & monitoring
-Visit potential sites for surveys and monitoring methods
-Consolidate & publish pollen catalogs
-Develop and detail full project proposal

BPI PROPOSED SUB-PROJECT 1:
BEE SURVEYS & MONITORING
PROPOSED FULL PROJECT PRODUCTS:

-Assess bee diversity in x sites in major biomes & crop systems
-Monitor bee diversity in x sites in major biomes & crop systems
-Publish a synthesis report on pollinators' assessment
-Publish a National List of Endangered Pollinators
-Train experts, students and technicians on methods

BPI PROPOSED SUB-PROJECT 2:
CROP POLLINATION ASSESSMENTS
PROPOSED PDF-B ACTIVITIES:

-Consolidate existing data on pollination dependant crops
-Collect complementary *in loco* data on crop pollination
-Workshop to consolidate list of pollination dependent crops
-Publish a list of pollination dependent crops (database)
-Publish updated edition of economic valuation methods
-Develop and detail full project proposal

BPI PROPOSED SUB-PROJECT 2:
CROP POLLINATION ASSESSMENTS
PROPOSED FULL PROJECT PRODUCTS:

-Identify pollinators of pollination dependent crops
-Assess pollination deficit in crops
-Assess economic value of pollination to crops
-Publish assessment of economic importance of pollination to crops
-Train experts, students and technicians on methods

BPI PROPOSED SUB-PROJECT 3: STINGLESS BEES MANAGEMENT

PROPOSED PDF-B ACTIVITIES:

-Workshop on preliminary assessment of conservation status of Meliponini bees
-Select target species and sites
-Identify and visit potential partners and sites
-Select appropriate methods
-Consolidate case studies of best practices
-Develop and detail full project proposal

BPI PROPOSED SUB-PROJECT 3:
STINGLESS BEES MANAGEMENT

PROPOSED FULL PROJECT PRODUCTS:

-Assessment report on conservation & use status
-Increase by x folds the number of farmers with Meliponiculture
-Increase by x folds the availability of nesting substracts
-Increase by x folds pollination of selected crops
-Increase by x % the income of poor farming families with byproducts of Meliponiculture
-Manual of stingless bees management
-Train experts, students and technicians on methods

BPI PROPOSED SUB-PROJECT 4:
HONEY BEES MANAGEMENT
PROPOSED PDF-B ACTIVITIES:

-Select protected areas
-Identify and visit potential partners and sites
-Identify priority crops to reduce pollination deficits
-Consolidate case studies of best practices
-Develop and detail full project proposal

BPI PROPOSED SUB-PROJECT 4:
HONEY BEES MANAGEMENT
PROPOSED FULL PROJECT PRODUCTS:

-Assessment report on abundance of honey bees in natural ecosystems
-Reduce abundance of honeybees in x protected areas with hive trapping
-Increase by x folds the use of honeybees in crop pollination
-Manual of honeybees' management
-Train experts, students and technicians on methods

BPI PROPOSED SUB-PROJECT 5:
SOLITARY BEES MANAGEMENT
PROPOSED PDF-B ACTIVITIES:

-Identify candidate bees to work
-Consolidate information on selected bee species
-Identify and visit potential partners and sites
-Identify priority crops to reduce pollination deficits
-Select appropriate methods
-Consolidate case studies of best practices
-Develop and detail full project proposal

BPI PROPOSED SUB-PROJECT 5:
SOLITARY BEES MANAGEMENT
PROPOSED FULL PROJECT PRODUCTS:

-Assessment report on conservation & use status
-Increase by x folds the availability of nesting substracts
-Increase by x folds pollination of selected crops
-Manual of solitary bees management
-Train experts, students and technicians on methods

BPI PROPOSED SUB-PROJECT 6: TAXONOMIC SUPPORT
PROPOSED PDF-B ACTIVITIES:

-Assessment of bee collections
-Publish "Bees of Brazil" book
-Preliminary Checklist of Brazilian bees
-Provide supplies for Bee Taxonomy Centers
-Develop and detail Full Project proposal

BPI PROPOSED SUB-PROJECT 6: TAXONOMIC SUPPORT
PROPOSED FULL PROJECT PRODUCTS:

-7 Bee Taxonomy Centers equipped
-Data basis of bees in collections
-Checklist of Brazilian bees
-Bee taxa revisions & keys
-Regional Identification guides
-Training on identification of bees
-Bee identification services
-Train parataxonomists

BPI PROPOSED SUB-PROJECT 7:
VIRTUAL INSTITUTE
PROPOSED PDF-B ACTIVITIES:

-Fully develop planning and program of training courses (themes, lecturers, materials, demands, selection process)
-Develop Information System structure and contents
-Develop and detail Full Project proposal

BPI PROPOSED SUB-PROJECT 7:
VIRTUAL INSTITUTE
PROPOSED FULL PROJECT PRODUCTS:

-5 Annual International Training Courses
-10 National Training Courses
-Information System fully operational, uploaded and updated through the Internet

BPI PROPOSED SUB-PROJECT 8:
POLICY & PUBLIC AWARENESS
PROPOSED PDF-B ACTIVITIES:

-Assess impacts of existing legislation and policies
-Assess availability of incentive measures and credit
-Assess public opinion in major regions and stakeholder groups
-Identify potential partners
-Regional workshops with potential partners
-Develop and detail Full Project proposal

BPI PROPOSED SUB-PROJECT 8:
POLICY & PUBLIC AWARENESS
PROPOSED FULL PROJECT PRODUCTS:

-National campaign reaching all stakeholders launched
-Public policies developed and applied
-Incentive measures developed and applied
-Inter-sectored partnerships established