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REPORT: AGREEMENT BETWEEN THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE GOVERNMENT OF PARANA STATE, BRAZIL – SECOND PHASE – 2010 TO 2012

Note by the Executive Secretary

INTRODUCTION

1. The Secretariat is circulating herewith a report prepared by the State Government of Parana, Brazil, as part of the Memorandum of Agreement signed with the Secretariat at the tenth meeting of the Conference of the Parties in Nagoya, Japan, on 25 October 2010, related to the offsetting of all carbon emissions resulting from the operations of the Secretariat since 2008 and until 2014. Since 2008 and by the renewed commitment of the former mayor of Curitiba, Mr. Carlos Alberto Richa, now Governor of the State of Parana, carbon emissions related to the operations of the office of the Secretariat of the Convention on Biological Diversity in Montreal, as well as all emissions related to travel of all staff and sponsored delegates, regardless of donors, are being offset within the guidelines of the United Nations Framework Convention on Climate Change (UNFCCC) by biodiversity-friendly allotments of land within Parana's BIOCLIMA reforestation programme, which helps build permanent restoration buffer zones around protected areas in the Atlantic Rainforest hotspot that also hosts several World Heritage sites.

2. Through BIOCLIMA and in areas specifically set aside for this agreement, landowners in critical conservation areas are being offered technical assistance in replanting endemic species seedlings in riverine wetlands close to the trinational Iguaçu Falls protected areas complex, as an example of payment for ecosystem services and in exchange for setting aside, for at least 30 years, new private protected areas in their land – and are offered additional benefits if they agree to pursue biodiversity-specific certification in their agricultural activities, or permanent conservation arrangements. Carbon offsets are tracked by legal agreements with each individual landowner and with the full technical supervision of local and international non-governmental organization; the Brazilian branch of the Nature Conservancy is involved on site. The programme helps bring small landowners and traditional farmers back into legality towards mandatory land reserves (which in turn allows them to access government-subsidized farming credit) and offers local communities important livelihood support by creating jobs.

3. The contribution is graciously offered to the Parties of the Convention, as Parana State is also a member of the CBD Advisory Committee of Subnational Governments, and the BIOCLIMA programme

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closely supports Brazil’s national biodiversity strategy and action plan and its capital city's local strategy for biodiversity, Curitiba's BioCity. By choosing this project within the scope of its Greening Task Force, the Secretariat wishes to recognize an example of a carbon offset-mechanism that also brings clear and direct benefit to several Aichi Biodiversity Targets as well as the Millenium Development Goals and other development goals, and of a pilot project that fully demonstrates the benefits of cooperation, in Brazil, across several governments levels in the implementation of decision X/22 and its related Plan of Action.

4. The report is being circulated in the form and language received by the Secretariat.

REPORT

AGREEMENT BETWEEN THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY (SCBD) AND THE GOVERNMENT OF THE PARANÁ STATE - BRAZIL

SECOND PHASE – 2010 TO 2012

STATE SECRETARIAT FOR ENVIRONMENT AND WATER RESOURCES – SEMA

ENVIRONMENTAL INSTUTUTE OF PARANÁ - IAP

SEPTEMBER, 2012

GOVERNMENT OF PARANÁ STATE

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State Secretariat of the Environment and Water Resources

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SUMMARY

The partnership between the Government of the State of Paraná and the Secretariat of the Convention on Biological Diversity (SCBD) has as one of its main objectives, the mutual support for actions that aim at the implementation of the Convention on Biological Diversity, providing carbon emissions offsets from the operations of the SCBD office and travel for sponsored delegates and staff. During COP 8, held in March 2006 in Curitiba - Paraná, the bilateral agreement was initiated, which resulted in the planting of 8 million tree seedlings that year in Paraná. Due to the size and magnitude of the actions madeby the Government during the COP 9 in 2008, held in Bonn, Germany, a *Memorandum of Understanding* was formalized between the Paraná Government and UN/SCBD, with targets of emissions offset of SCBD from 2008 until 2010, **an estimate of 10.100 tons of CO_2, by planting approximately 100 acres of native trees with a calculation period for carbon fixation of 30 years.** The report of these activities was presented by the Paraná State to the SCBD in 2010. In 2011 a team from the Secretariat of the Environment of Paraná visited the office of SCBD in Montreal, when the Paraná Government was invited to lead the first meeting of the ***Advisory Committee of Subnational Governments*** to the CDB, to be held in Curitiba in 2012. Thus, in April of 2012 during this event and the launch of the PARANÁ BIOCLIMATE PROGRAM, a new Memorandum of Understanding was once again signed, with the aim of continuing the partnership with the following definitions: For the period **2010-2012, o**ffset amounts of **12.625** equivalent tons of CO2 were offered through the planting of native species in the Paraná State, according to the report of 2012, through the PARANÁ BIOCLIMATE PROGRAM. For the next period **of 2012 to 2014,** the plantings will be conducted with an estimated **13.000 tons of CO2**, as per the emissions forecast of the SCBD (an increase of 29.7% over the last period) .

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SUMMARY TABLE

Phase	Period	Tons of CO_2,	Estimated area planted with native (ha)	Plantings situation
1	2008- 2010	10.100	100	Performed
2	2010-2012	12.625	121	Performed*
3	2012-2014	13.000	130	To perform

** Report on the second period to date = 111 seedlings referring to 74ha.*

FIRST MEETING OF THE ADVISORY COMMITTEE ON SUB-NATIONAL GOVERNMENTS (April of 2012 – Signature of the Second Memorandum of Understanding between the Government of Paraná and SCBD)

1. Cooperation between the State of Paraná and the Secretariat of the Convention on Biological Diversity - SCBD

During the COP 8, held in March of 2006 in Curitiba - Paraná, bilateral agreements between the Government of the State of Paraná and the UN Secretariat for the Convention on Biodiversity were initiated, culminating in the increase of activities of the Riparian Forest Program (PMC) and planting of 8 million tree seedlings by Paraná that year. Due to the size and scope of the actions of the Riparian Forest Program, the negotiations of 2006 culminated during the COP 9 in 2008, held in Bonn, Germany, in the signing of the BILATERAL AGREEMENT between the Paraná Government and the UN/SCBD (Phase 1).

Subsequent to these agreements, in April of 2012, a new Memorandum of Understanding was signed, with the aim of continuing the partnership for the period 2012-2014 (Annex), during the launch of PARANÁ BIOCLIMATE PROGRAM.

2. The Paraná Bioclimate Program

2.1 Summary of the Main Points of the Program

Current Scenario

- The loss of biodiversity, along with climate change, represents the biggest threats to humanity worldwide.
- Biodiversity is fundamental to the maintenance of environmental services used by man for all its activities.
- The recognition of the importance of the conservation of the biodiversity in business is growing rapidly.
- In Paraná there are few remaining quality forest remnants, and the pressure on the fragments especially on the Araucaria Forest, represents a serious threat, not only to the national tree of Paraná but to all species of fauna and flora.
- There are no monitoring actions minimally adequate to measure the natural environments conditions of Paraná.
- Public investments in conservation are very limited and private ones still virtually nonexistent.
- The State's Protected Areas network is not representative and needs to be expanded, including the creation of new units. The existing Units need improvements and integration with the community.
- The structures of the environmental institutions need to be reformed, equipped and need to verify an increase of personal, empowerment and innovation.
- The increase in large-scale projects requires intensive and careful licensing process, representing a major impact on biodiversity.
- The development of actions in scale, focused on achieving priority demands that are technically based, is critical.

Expected Scenario – Paraná Bioclimate Program

The Bioclimate Program is the first effort in the area of conservation of biodiversity at State level in Brazil building both on the CBD's 2011-2020 Strategic Plan on Biodiversity and Brazil's National Biodiversity Strategy and Action Plan - a historical fact. It also reinforces and supports the local Biodiversity Strategy of its capital, Curitiba (BioCity programme).

The Program is the result of an extensive work effort originated from contributions from various society sectors, being qualified as the result of an inter-institutional and multidisciplinary initiative.

The inclusion of specific legislation to regulate the Payment for Environmental Services underlies a strategy to preserve the last remnants of several well-preserved natural ecosystems of Paraná.

A portfolio of benefits to stakeholders can be publicly demonstrated in the short term, positioning Paraná in the national and international scene. The launch of the Bioclimate Program is a milestone for the conservation of the environment in the state of Paraná.

Obtaining LIFE Certification, a biodiversity-specific system originated with support of the Municipality of Curitiba, is foreseen as an additional tool for the promotion of the sustainable use of biodiversity in the private sector; certified businesses will receive priority in demands for benefits in the Bioclimate Program.

The mechanisms of management of government resources and the inclusion of innovative strategies for the attraction of private funding will ensure the budget for the implementation of the Bioclimate Program.

Expected Results

The natural private areas of the State of Paraná, according to their relevance to the biodiversity conservation, now receive Payments for Environmental Services.

A close link between the conservation initiatives and the combat to global warming, will allow the sale of credits from the conservation and restoration of natural areas.

The Protected Areas' System in Paraná State will now be managed with appropriate technical and budget conditions, as well as the planning and facilitation of new units.

Endangered species in the state of Paraná will be monitored in long-term programs, supporting conservation management procedures.

The Bioclimate Program represents the improvement of environmental bodies regarding their structure and human capital, gradually allowing an unprecedented strengthening and an arrangement of planned management for the new scenario that is starting, increasing the licensing, supervision and conservation areas.

The licensing procedures and other possibilities of budgetary increase within environmental bodies directed to the conservation priorities through the Bioclimate Program.

The region of APA of Guaraqueçaba now represents a first example of Paraná of conciliation between conservation and development, via the Bioclimate Program and from a wide range of investments in the social, economic and environmental characteristics.

Convention on Biological Diversity

Bioclima PARANÁ

PARANÁ
GOVERNO DO ESTADO
Secretaria do Meio Ambiente e Recursos Hídricos

Differential of the Bioclimate Program

- ✓ The involvement of the private sector - innovating the model and structure the for management of biodiversity and ecosystem services;

- ✓ Self- sustainable program with permanent benefits.

- ✓ The farmers that own private natural areas of the State of Paraná, are now receiving Payments for the Generation of Environmental Services.

- ✓ Protected Areas in the State of Paraná is now being managed with the appropriate technical and budgetary conditions, as well as planning and facilitation of new units that received incentives.

The Bioclimate Program establishes new global parameters in the undertaking of actions and fight global warming, allowing dissemination practices for other Brazilian states and other countries.

2.2 Concepts adopted by the program: Biodiversity and Climate

In recent years, worldwide, a significant improvement has been observed in recognition of the importance of biodiversity conservation and climate balance in relation to the current development challenges. The need for the introduction of new criteria to establish acceptable standards of economic growth compatible with sustaining Natural heritage is already a concrete concern of governments and private corporations.

Since the event of Rio-92, a continuing series of discussions involving the theme of Biodiversity Conservation and Climate Change denotes the severity of a predictable scenario for over a decade, which demands comprehensive initiatives to minimize the risks of environmental degradation on the Planet.

Notably, the inclusion of these crucial issues of the environmental area within the field of government strategies and, in particular, on the agenda of business, allows the construction of a much more pragmatic vision related to the need for investment to face the losses caused by environmental degradation.

There are enough information's to affirm that "*the services provided by the different ecosystems on the planet have a high economic value and can be worth up to trillions of dollars. The inclusion of these services and values in public policy can help cities and authorities to save money and at the same time, to improve the quality of life, ensuring means of subsistence for the population, create jobs and therefore, boost the local economy.*" That is the conclusion of an international study named TEEB (acronym for The Economics of Ecosystems and Biodiversity) for Local and Regional Policy, which was launched simultaneously in Brazil, Belgium, India, Japan and South Africa. The TEEB for Local and Regional Policy is part of a series of five interconnected reports, including the Report on Ecological and Economic Foundations, the TEEB for Decision Makers and TEEB for the Business Sector.

In Brazil, soil conversion is responsible for 75% of emissions of greenhouse gases. This situation makes us the fifth largest emitter of greenhouse gases around the Planet. Global warming is more a factor of threat to Biodiversity due to the extreme events and habitat alteration. And the suppression of natural areas is most relevant factor for the loss of biodiversity in our Country; the threat is still far from having a solution.

The need to implement new tools to deal with these challenges is clear, and the State of Paraná has great opportunities to assume a leadership position on this agenda. One of the TEBB events was organized by the city of Curitiba, in 2010, jointly with the United Nations Environment Program (UNEP), United Nations Development Program (UNDP), Avina Foundation, Unilivre and the Global Canopy Program.

IParaná, represented by the city of Curitiba, then governed by the current Governor of State, Mr. Beto Richa, mayor at the time, recognized by this initiative the value of Ecosystem and Biodiversity Services as crucial for improving the quality life, subsistence of the population, generating jobs and thus an important driver of the local economy.

The State government, continuing the implementation of a positive agenda for conservation of biodiversity and ecosystem services, based on a deep and broad strategic analysis which is presented below, implements a program of strategic actions to reverse the current loss of biodiversity and maintenance of ecosystem services.

Recognizing that biodiversity is essential for the maintenance of environmental services used by Man for all their activities creates the challenge of integrating nature conservation within production systems and in the daily lives of citizens. This is the biggest challenge for the search for a sustainable development. Paraná is assuming a historic compromise, reaching an unprecedented priority degree, the topics of Biodiversity Conservation and Combating Global Warming. The Bioclimate Program is an effective response to tackle the enormous challenges that the state faces to

reconcile their struggle for quality of life and economic development with conservation principles for the conservation of Natural Heritage.

2.2 Structuring the Paraná Bioclimate Program

THE BIOCLIMATE PROGRAM as a solid environmental policy and as a reversal agent for the biodiversity loss and the ecosystem service quality, sets out commitments with conceptual and technical precision and with the desired results, constitutes a milestone for the conservation of the environment in the Paraná state. Its guidelines meet the priorities for Biodiversity Conservation and adaptation/mitigation front against the climate changes.

Objectives of the program:

"The conservation and restoration of biodiversity in the Paraná State, contributing to mitigation and adaptation to the climate changes and the quality of life of its population" .

One of the main and most important features of the BIOCLIMATE PROGRAM is of qualifying as a binding agent and promoter of institucional linkages, necessary for the successful implementation of a new model for biodiversity conservation. The Bioclimate Program is the result of extensive work effort generated from contributions from various sectors of society, and resulting in an inter-institutional and multidisciplinary initiative.

The innovative initiatives already underway in Paraná, aggregated with other complementary actions, will be leveraged from the implementation of the BIOCLIAMTE

PROGRAM. Due to budgetary limitations, urgency in a recovery solution for the recovery of environmental liabilities, urgency in implementing actions to prevent further Biodiversity loss, the program considers the prioritization of its actions on two grounds: (a) the technical and (b) the structural basis, where prioritizes the funding mechanisms, organizational changes, hiring, partnerships, amoung others. The seminars for the preparation of the program identified the need for a new framework capable of managing and implementing actions to encourage the conservation, through processes that are quick, with appropriate technical support, ensuring the concrete application of resources for the conservation.

Considering the results identified as necessary by the strategic planning, in its structuring, the BIOCLIMATE PROGRAM was subdivided into seven technical projects with the following components:

1. CONSERVATION OF NATURAL AREAS Project
2. RECOVERY OF BIODIVERSITY Project
3. INCENTIVES FOR CONSERVATION Project
4. CLIMATE CHANGE Project
5. ENVIRONMENTAL MONITORING Project
6. ENVIRONMENTAL EDUCATION Project
7. SCIENTIFIC RESEARCH AND TRAINING Project

Besides the technical projects listed, the need for development of support actions to address the programs was also identified and divided into:

a) Institutional Modernization and Strengthening
   - ➢ LEGAL FRAMEWORK

b) Program Management;

To test and adapt the activities planned by the program, the activities in two pilot regions will be prioritized:

Pilot Projects: APA of Guaraqueçaba, Bioclimatic Corridor of Araucaria;

3. THE PARTNERSHIP WITH SCBD AND INTERFACE WITH THE BIOCLIMATE - CONSERVATION PROJECT AND BIODIVERSITY RESTORATION PROJECT

The partnership between the Secretariat of the Convention on Biological Diversity with Paraná is in total compliance with the Biocliamte Program projects. To better understand this close relationship, highlighting the goals and components of these two projects.

GOALS OF THE BIODIVERSITY CONSERVATION PROJECT: Contribute to the biodiversity conservation through landscape planning, protection of remnant native vegetation, management of fauna and flora species that have a special interest in terms of conservation, creation and implementation of Conversation Areas and conservation of Strategic Areas for the Biodiversity of Paraná;

COMPONENTS OF THE BIODIVERSITY CONSERVATION PROJECT:

1. LANDSCAPE PLANNING
2. CONSERVATION UNITS
3. LEGAL RESERVE AND APP – SISLEG
4. UNPROTECTED NATURAL ENVIRONMENTS
5. CONSERVATION OF SPECIES OF RELEVANT INTEREST (FAUNA AND FLORA)
6. CONTROL AND ELIMINATION OF INVASIVE ALIEN SPECIES (EEI)

OBJECTIVES OF THE RESTORATION OF BIODIVERSITY PROJECT: Contribute to the maintenance of the ecosystem and environmental stability, promoting the conservation of biodiversity, the maintenance of ecological processes of the hydrous bodies for the improvement of the quality and quantity of water.

COMPONENTS OF THE RESTORATION OF BIODIVERSITY PROJECT:

RESTORATION IN PERMANENT PROTECTION OF WATER SYSTEM AREAS

1. RECOVERY OF LEGAL RESERVES
2. RECOVERY OF NATURAL UNPROTECTED AREAS;
3. MANAGEMENT OF NATIVE SPECIES: NATURAL OR PLANTED.
4. URBAN FORESTATION

Considering the objectives of the Projects, it is worth emphasizing the aspects related to the importance of establishing partnerships aimed at restoring biodiversity towards the current situation of biodiversity loss.

In Paraná, 97.36 % of the territory is considered the domain of the Atlantic Forest Biome, a decrease by 9978 ha (Figure 2) was identified between 2005 and 2008, appointed to a forest cover of 1.937.663 (9.85%) in 2008, whereas the remaining forest fragments located in bigger fragments than 3 ha (SOS ATLANTIC RAIN FOREST FOUNDATION, INPE , 2008).

1895 - 83,41% | 1930 - 64,13% | 1950 - 39,68% | 1980 - 16,97% | 1990 - 9,19%

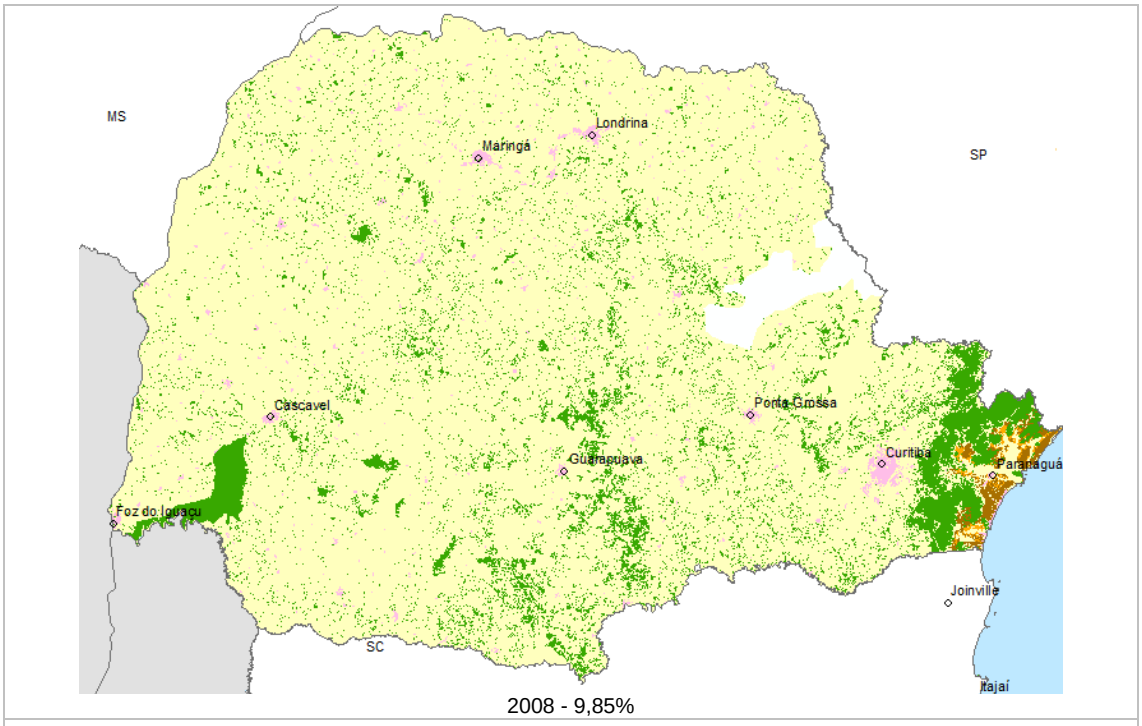

FIGURE 2 - REMAINING FOREST IN PARANÁ
SOURCE: Maack (1968); Gubert Filho (1993); Fundação SOS Mata Atlântica e INPE (2008)

In 2009, the study coordinated by Ribeiro *et al.* (2009) published in a special issue of the Biological Conservation journal dedicated to the Atlantic Forest Biome determined a forest cover between 11.4% and 16%. The data from the Atlas of the Atlantic Forest do not differentiate between phytogeography regions by biome, but for Ribeiro *et al.* (2009) the current forest coverage of the Mixed Ombrophilous Forest (FOM) in Brazil is of 3.202.134 ha (12.6%). This confirms the statement, already made by various authors, that this vegetation formation is considered one of the most threatened in Latin America (DINERSTEIN *et al.*, 1995), being possibly the most intensely explored in Brazil (MAACK, 1968; BRITEZ *et al.*, 2000).

Despite the differing values of the remaining forestation presented by these studies, depending on the methodologies adopted, these were very similar and indicate the severity and the need for actions to stop the deforestation and recover these environments.

3. ACTION PLAN FOR THE CONTRIBUTION OF PARANÁ WITH THE AICHI

Within the Action Plan of Paraná, both the establishment of partnerships and the need for replanting of native forest existances are worth highlighting. Paraná was the pioneer of the restoration of Riparian Forest having as main objective the restoration of vegetation that protects the banks of the major rivers of the state. To that end, the restoration of the riparian forest by the planting native species and the abandonment of areas in order to the vegetation to recompose naturally. This work already provided the abandonment for the natural regeneration of over 25 thousand hectares of land, planting more than 118 million of seedlings benefiting more than 134 thousand farmers throughout the state of Paraná.

Besides these direct results, the characteristics and size of the program bring indirect results, among which it is highlighted the involvement and awareness of society to the importance of implementing the environmental recovery activities that can be measured through the execution of 200 convenants. By the execution of formal partnerships a network of more than 350 greenhouses were constituted and transferred to the PMC partners such as municipalities, Agricultural Colleges, Universities, SANEPAR, APAEs, prisons and public and private institutions that jointly have the capacity to produce 20 million annually seedlings.

The reforestation are directed for periods of greater performance when recovery annual campaigns of the recovery of the riparian forest are conducted, involving more than 800 technicians and farmers in all districts of the state. With the structured greenhouses for the seedling production and disposal, the owners of the degraded areas register and receive seedlings and guidance regarding the reforestation. The importance of cultural practices that are dedicated to seedlings by registered foresters, must be emphasized. All properties included in the Program are registered by the IAP, Municipalities, Emater and other partner entities.

The control of the plantations is performed by a management system of the destination of the seedlings to the beneficiaries of the Program. The registration is done with personal, property documents, property address and in many cases the geographic location of the property by latitude and longitude provided by GPS, in a standard document called Forester Registration. These grants facilitate the audit work of the Court of Auditors, which supervises the planting and the seedling production and conducting inspection monitoring.

To evaluate the effectiveness of the plantations, an inventory of 239 properties was executed that identified the survival rate of the seedling and the capture of 66.5% from 0.0044 t CO_2 equivalent per survivor person per year. This amount was obtained from 81 native species and plants from regeneration that occurs naturally in areas in restoration process were not considered (Documents 196-Embrapa). The abandonment of areas for natural regeneration is as important as planting seedlings, since the native vegetation may serve as a seed bank ensuring the genetic quality of these new forests.

4 . Soil use at the time of planting - Baseline

Paraná uses its soil mostly in agricultural activities especially for crops of soybeans, corn, wheat and sugar cane and the pastures where cattle predominates. Before planting, the Permanent Preservation Areas located on the Iguaçu-Paraná Biodiversity Corridor, were used as pasture, while the Permanent Preservation Areas located in the basin of river Piquiri and River Ivaí were destined for the cultivation of corn and cane sugar, respectively. Although remnants of native vegetation remaining on the banks of these rivers were found, these activities violated the minimum lenght for permanent preservation for the riparian forest under former Brazilian Forest Code 4.771/65.

From this and previous diagnosis and the different situations encountered, two main strategies for the recovery of these degraded areas were defined: the isolation and the planting of seedlings in a partial area and the planting of seedlings in a total area.

5. Plantings for phase 2 of the Paraná partnership - SCBD (163.727 seedlings in 121 ha)

The local communities were mobilized not only to plant 163.727 seedlings but also for the importance of preserving water resources, in addition to the need to adopt sustainable actions to contain the negative impacts to the environment.

The reforestation began in May of this year, using seedlings produced in reusable packaging and substrate of forest origin produced from the regional greehouses of the Environmental Institute of Paraná - IAP. The material used for propagating seeds are collected by specialized teams in the different involves "ECOREGIONS". The collection system respects a strict quality control and genetic variability guaranteeing the representativeness of the forest remnants.

4.1 Zoning and Used Forest Species

The forest species used for the recovery of the Permanent Preservation Areas were defined from its natural occurrence in the respective contributing regions, with the preservation of water courses and to restore the forest fauna habitat. 62 native and recommended forest species were planted (Table 1) for the planting in the respective bioclimatic regions of the state (Figure 3) as specific zoning, totaling 163.727 seedlings.

Popular Name	Scientific Name
Alegria divaricata	*Luehea divaricata*
Pterogyne nitens	*Pterogyne nitens*
White/Red Angico	*Anadenanthera macrocarpa*
Psidum chinense	*Psidium cattleianum*
Araucaria	*Araucaria angustifolia*
Yellow Ariticum	*Annona neosalicifolia* H.Rainer
Ariticum	*Annona cacans*
Red Aroeira	*Schinus terebinthifolius*
Bracatinga	*Mimosa scabrella*
Sebastiana	*Sebastiana commersoniana*
Cabreuva	*Myrocarpus frondosus*
Cha de bugre	*Cordia ecalyculata*
Canafístula	*Peltophorum dubium*
Cinnamon	*Ocotea puberula*
Nectandra Oppsitifolia	*Nectandra oppositifolia*
Canjarana	*Cabralea canjarana*
Buckthorn	*Rhamnus sphaerosperma*
Europhobiaceae	*Croton floribundus*
Jaracanda	*Jacaranda micrantha*
Pink Cedar	*Cedrela fissilis*
Cherry	*Eugenia involucrata*
Brazilian Coral Tree	*Erythrina falcata*
Embauba	*Cecropia pachistachia*
Embauba	*Cecropia glaziovi, C. hololeuca*
Maitén	*Maytenus officinalis*
Dried Beans	*Lonchocarpus muehlbergianus*
Fig Tree	*Ficus sp*
Nightshades	*Solanum sp.*
Ulmaceae	*Trema micrantha*
Guabijuzeiro	*Myrcianthes pungens*
Wild Honey Tree	*Casearia decandra*
Guajayvi	*Patagonula americana*
Myrceugenia	*Myrceugenia sp*
Glassywood	*Astronium graveolens*
Angico	*Parapiptadenia rigida*
Guatambu de sapo	*Chrysophyllum gonocarpum*
Inga banana	*Inga vera* subsp *affinis*

Table 1. List of the Planted Native Species

Continuation of table 1

Popular Name	Scientific Name
Yellow Ipe	*Tabebuia alba*
Pink Ipe	*Tabebuia roseo alba*
Purple Ipe	*Tabebuia avellanedae*
Majaguillo	*Heliocarpus americanus*
Mimosa regnelli	*Mimosa regnelli*
Sapium glandulatum	*Sapium glandulatum*
White laurel	*Bastardiopsis densiflora*
Laurel	*Cordia trichotoma*
Mimosa bimucronata	*Mimosa bimucronata*
Quince	*Ruprechtia laxiflora*
Bauhinia Tree	*Bauhinia forficata*
Sprengel	*Gallesia integrifolia*
Pau marfim	*Balfourodendron riedelianum*
Pink peroba	*Aspidosperma polyneuron*
Pinus pinaster	*Podocarpus lambertii*
Pitanga	*Eugenia uniflora*
Lonchocarpus guilleminianus	*Lonchocarpus guilleminianus*
Sapuva	*Machaerium stipitatum*
Sarandi	*Sebastiania schottiana*
Sete capotes	*Campomanesia guazumifolia*
Earpod Tree	*Enterolobium contortisiluquum*
Vitex montevidensis	*Vitex montevidensis*
Tucaneiro	*Cythalexyllum myrianthum*
Eugenia uvalha	*Eugenia uvalha*
Allophyllus edulis	*Allophyllus edulis*

Table 1. List of Planted Native Species (continued)

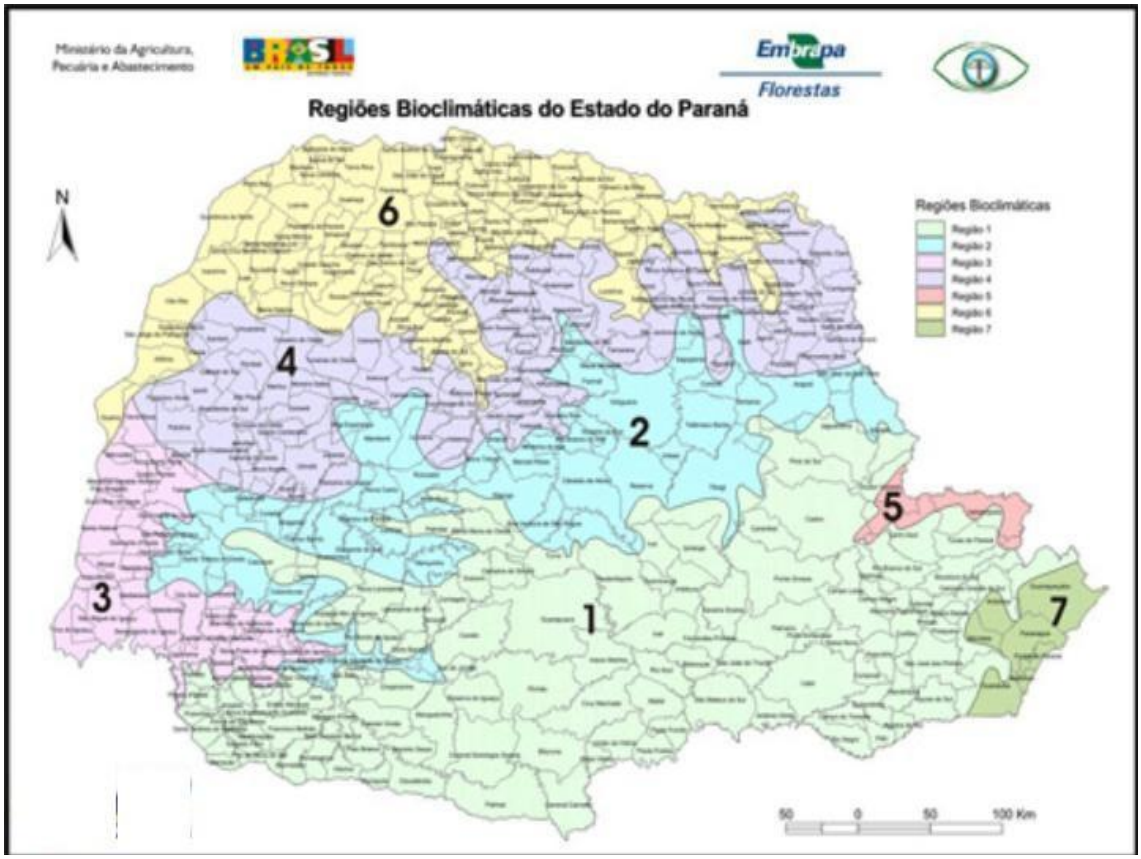

Figure 3 - Mapping of the Bioclimate Regions of Paraná - EMBRAPA - CNPF

5. Guarantees of permanent reforestation

5.1 Location in Permanent Preservation Areas (APP)

The reforestation resulting from the cooperation of phase 2 to date (september – 2012) resulted in 111.426 native seedlings corresponding to 73.92 ha of the riparian forest. The riparian forest is defined as the vegetal formation on the banks of rivers, streams, lakes, ponds and springs. These areas were reforested still according to the concept of areas of permanent preservation under the repealed Brazilian Forest Code,

Law 4.771/65, also about the minimal lenght of vegetation to be preserved regarding the width of the rivers. The Forest Code ensured the preservation of:

- ✓ 30 (thirty) meters for the water courses of less than 10 (ten) meters wide;
- ✓ 50 (fifty) meters for the water courses that have 10 (ten) to 50 (fifty) meters wide;
- ✓ 100 (hundred) meters for the water courses that have 50 (fifty) to 200 (two hundred) meters wide;
- ✓ 200 (two hundred) meters for water courses that have 200 (two hundred) to 600 (six hundred) meters wide;
- ✓ 500 (five hundred) meters for the water courses that have a width exceeding 600 (six hundred) meters;
- ✓ in the springs, even if intermittent and in the so-called "water holes", regardless of its topographical situation, in a minimum radius of 50 (fifty) meters wide.

6.2 Initial Assessment and Survival of Seedlings Index

Three months after the plantations, a survey was conducted to assess the survival rates of the seedling that averaged 97.6%. The replanting will be carried out for those cases that demonstrated a survival rate below to 90%. The areas were measured individually by GPS precision with support and supervision from The Nature Consevancy that will also contribute to the monitoring methodology of the reforestation.

Annexes

Figure 3. Location Map

LIST OF PROPERTIES AND PLANTINGS

Table 2. List of partners of plantations SCDB offset - Iguaçú River Basin

LAND OWNER	MUNICIPALITY	GEOGRAPHICAL COORD.	No. of Seedlings	PLANTING AREA (ha)	% OF RIPENING
Dario Valderi Griebler	Flor da Serra do Sul	W 53 13 56 S 26 14 6	1.800	1,62	55
Adão S.P. dos Santos	Pranchita	W 53 47 36 S 25 59 59	2.000	1,80	55
Rudimar A. Tristacci	Pranchita	W 53 42 6 S 25 58 0	1.000	0,90	90
Genair José Link	Flor da Serra do Sul	W 53 10 16 S 26 18 46	5.000	4,50	80
Argemiro Jantara	Santa Izabel do Oeste	W 53 26 2 S 25 49 1	1.000	0,90	60
Nelson Leceux	Santa Izabel do Oeste	W 53 25 22 S 25 47 35	600	0,54	55
Antonio J. de Camargo	Santa Izabel do Oeste	W 53 29 16 S 25 50 17	1.000	0,90	60
Altamir Fabro	Marmeleiro	W 53 3 19 S 26 7 29	1.000	0,90	60
Advino Fabro Correto	Marmeleiro	W 53 3 38 S 26 7 36	2.000	1,80	65
Evaristo J. Agustinheto	Marmeleiro	W 53 3 38 S 26 7 28	2.000	1,80	65
Valdemar Fabro	Marmeleiro	W 53 3 38 S 26 7 41	500	0,45	65
Wagner de Oliveira	Marmeleiro	W 53 3 23 S 26 18 28	3.000	2,70	65
Coophamar	Marmeleiro	W 53 2 19 S 26 9 2	2.400	2,16	55
Gerson Luiz Schutz	Marmeleiro	W 53 4 2 S 26 13 10	3.000	2,70	80
Luis Senhorati	Marmeleiro	W 53 9 20 S 26 11 0	3.000	2,70	75
Orico de Lima	Marmeleiro	W 53 8 42 S 26 8 30	1.000	0,90	55
Marcelo Scalco	Santo Ant° Sudoeste	W 53 41 34 S 26 6 29	700	0,63	65

CONTINUATION OF TABLE 2

LAND OWNER	MUNICIPALITY	GEOGRAPHICAL COORD.	No. of Seedlings	PLANTING AREA (ha)	% OF RIPENING
Eliovam Milani	Santo Ant° Sudoeste	W 53 42 49 S 26 4 26	2.500	2,25	60
Alcindo Strub	Santo Ant° Sudoeste	W 53 38 17 S 25 59 21	1.700	0,90	60
Camisio José Traesel	Santo Ant° Sudoeste	W 53 37 17 S 26 2 49	2.000	0,90	80
Leoni Furmaniak	Capanema	W 53 37 15 S 25 35 1	2.000	0,90	55
Luiz A Letti	Capanema	W 53 47 23 S 25 39 23	2.000	0,90	75
Nivaldo Dal Cortivo	Capanema	W 53 37 3 S 25 34 59	2.200	0,90	60
Odelir Geraldo Sotti	Capanema	W 53 52 55 S 25 37 10	500	0,90	60
Valmor Gerber	Capanema	W 53 48 39 S 25 40 56	1.600	0,90	55
Eloy Wesling	Capanema	W 53 57 54 S 25 35 30	350	0,90	95
Adelar Konzen	Capanema	W 53 45 42 S 25 37 47	2.000	0,90	90
Adair Gross	Capanema	W 53 48 32 S 25 36 29	5.000	0,90	95
TOTAL		**52.850**		**39,15**	

Table 3 – Plantings for SCDB carbon offset with the support from COPEL

LAND OWNER	MUNICIPALITY	GEOGRAPHICAL COORD.	No. of Seedlings	PLANTING AREA	% OF RIPENING
Ass. Fazenda Refopaz	Cascavel	W 53 13 40 S 25 5 24	740	0,614	94
Ass. Fazenda Refopaz	Cascavel	W 53 13 57 S 25 4 19	913	0,758	94
Ass. Fazenda Refopaz	Cascavel	W 53 13 55 S 25 4 18	620	0,515	94
LOTEAMENTO	Cruzeiro do	W 53 6 31 S 25 33 39	418	0,202	55

NOVO LOTEAMENTO	Iguaçu Cruzeiro do	W 53 6 22 S 25 33 27	313	0,152	55
NOVO LOTEAMENTO	Iguaçu Cruzeiro do	W 53 6 15 S 25 33 23	238	0,115	55
NOVO LOTEAMENTO	Iguaçu Cruzeiro do	W 53 6 12 S 25 33 20	575	0,278	55
NOVO LOTEAMENTO	Iguaçu Cruzeiro do	W 53 6 14 S 25 33 16	62	0,030	55
NOVO LOTEAMENTO	Iguaçu Cruzeiro do	W 53 6 16 S 25 33 18	405	0,196	55
NOVO LOT.LAGO	Iguaçu Cruzeiro do	W 53 8 10 S 25 34 6	1.932	0,934	55
DOURADO 1 LOT.LAGO	Iguaçu Cruzeiro do	W 53 8 7 S 25 34 9	342	0,166	55
DOURADO 1 LOT.LAGO	Iguaçu Cruzeiro do	W 53 8 5 S 25 34 9	335	0,162	55
DOURADO 1 LOT.LAGO	Iguaçu Cruzeiro do	W 53 8 8 S 25 34 2	546	0,264	55
DOURADO 1 LOT.LAGO	Iguaçu Cruzeiro do	W 53 8 8 S 25 33 54	646	0,312	55
DOURADO 1 LOT.LAGO	Iguaçu Cruzeiro do	W 53 7 54 S 25 33 58	2.049	0,991	55
DOURADO 2 LOT.SOL	Iguaçu Cruzeiro do	W 53 8 28 S 25 33 47	707	0,342	55
NASCENTE 1 LOT.SOL	Iguaçu Cruzeiro do	W 53 8 28 S 25 33 54	2.289	1,106	55
NASCENTE 1 LOT.SOL	Iguaçu Cruzeiro do	W 53 8 24 S 25 34 4	3.099	1,499	55
NASCENTE 1	Iguaçu				

TABLE 3 CONTINUATION

LAND OWNER	MUNICIPALITY	GEOGRAPHICAL COORD.	No. of Seedlings	PLANTING AREA	% OF RIPENING
LOTEAMENTO BALSA	Cruzeiro do Iguaçu	W 53 6 16 S 25 33 12	906	0,438	55
LOTEAMENTO BALSA	Cruzeiro do Iguaçu	W 53 6 16 S 25 33 5	1.064	0,515	55
LOTEAMENTO BALSA	Cruzeiro do Iguaçu	W 53 6 10 S 25 32 40	177	0,085	55
LOTEAMENTO BALSA	Cruzeiro do Iguaçu	W 53 5 59 S 25 32 16	324	0,157	55
LOTEAMENTO BALSA	Cruzeiro do Iguaçu	W 53 5 55 S 25 32 8	1.448	0,700	55

COPEL (próx.barragem-jus.)	N.Prata do Iguaçu	W 53 29 26 S 25 33 19	377	0,238	83
Sítio Jabuti 1	N.Prata do Iguaçu	W 53 24 36 S 25 32 29	5.269	3,324	83
Sítio Jabuti 2	N.Prata do Iguaçu	W 53 24 43 S 25 32 29	689	0,435	83
Sítio Jabuti 3	N.Prata do Iguaçu	W 53 24 45 S 25 32 26	159	0,100	83
Sítio Luiz Apolinário	N.Prata do Iguaçu	W 53 25 2 S 25 32 22	1.068	0,674	83
Sítio Luiz Apolinário	N.Prata do Iguaçu	W 53 25 7 S 25 32 19		3.951	2,493
Sítio Luiz Apolinário	N.Prata do Iguaçu	W 53 25 3 S 25 32 25	126	0,079	83
Sítio Levi Apolinário	N.Prata do Iguaçu	W 53 25 22 S 25 32 20	1.493	0,942	83
Sítio Levi Apolinário	N.Prata do Iguaçu	W 53 25 26 S 25 32 14	1.201	0,758	83
Sítio Isaura	N.Prata do Iguaçu	W 53 25 35 S 25 32 8	1.349	0,851	83
Sítio Isaura	N.Prata do Iguaçu	W 53 25 47 S 25 32 13	4.429	2,794	83
COPEL - APP S.Fco.	N.Prata do Iguaçu	W 53 26 27 S 25 32 8	3.357	2,118	83
COPEL - APP S.Fco.	N.Prata do Iguaçu	W 53 26 22 S 25 31 52	3.719	2,347	83

TABLE 3 CONTINUATION

LAND OWNER	MUNICIPALITY	GEOGRAPHICAL COORD.	No. of Seedlings	PLANTING AREA	% OF RIPENING
Sítio Bertinho Gomes	N.Prata do Iguaçu	W 53 26 8 S 25 31 21	977	0,617	83
Sítio Bertinho Gomes	N.Prata do Iguaçu	W 53 26 18 S 25 31 10	51	0,031	83
Sítio Bertinho Gomes	N.Prata do Iguaçu	W 53 26 22 S 25 31 7	383	0,242	83
Sítio Inácio	N.Prata do Iguaçu	W 53 25 2 S 25 31 27	4.706	2,969	83
Sítio Lidio Pires	N.Prata do Iguaçu	W 53 25 46 S 25 31 10	953	0,601	83
Sítio Lidio Pires	N.Prata do Iguaçu	W 53 25 55 S 25 31 11	882	0,556	83
Sítio Serginho	N.Prata do	W 53 26 52 S 25 32 24	324	0,204	83

	Iguaçu				
Sítio Serginho	N.Prata do Iguaçu	W 53 25 58 S 25 32 30	395	0,249	83
Sítio Zolletti	N.Prata do Iguaçu	W 53 24 53 S 25 31 31	536	0,338	83
Sítio Zolletti	N.Prata do Iguaçu	W 53 24 46 S 25 31 35	677	0,427	83
Sítio Zolletti	N.Prata do Iguaçu	W 53 24 42 S 25 31 40	1.357	0,856	83
Total (2)			**58.576**	**34,77**	

TABLE 4. Summary of plantation of PHASE 2 carbon offset partnership with SCDB

Description of reforested properties partnership carbon offset with SCDB	NO. OF SEEDLINGS	PLANTING AREA ha
PLANTATIONS (1) Iguaçu River Basin	**52.850**	**39,15**
PLANTATIONS (2) support from COPEL	**58.576**	**34,77**
GENERAL TOTAL	**111.426**	**73,92**

**(until September of 2012)*