



ITAIPU BINACIONAL COORDINATION AND ENVIRONMENTAL ADMINISTRATION Energy with Socioenvironmental Responsibility

**THE PO VALLEY COMPARE
ITSELF WITH BIG
INTERNACIONAL BASINS
CULTIVATING GOOD WATER**

2009



Connection

**Global
X
Local**

Situation

GLOBAL WARMING - THE PLANET IS SICK

- Destruction of Ozone Layer/ Increasing of the global temperature
- Exhaustion of the potable water reservoirs
- Increasing of the hydric, atmospheric and soil pollution
- Enlargement of solid waste – garbage
- Deforestation
- Erosion / Desertification / Exhaustion and degradation of cultivable soil
- Extinction of species from flora and fauna
- Dominating production and consuming patterns causes environmental devastation, reduction of natural features and massive extinction of species
- The injustice, a poverty, the nescience and the violent conflicts raise and cause huge suffering

- ✓ *550 million firearms in the world (1 weapon for 12 people)*
- ✓ *370 richest people in the world receives more than 2,6 billion people each year*

- ✓ *500 multinationals control 25% of the world economic activities and 80% of technologic innovations*

GLOBAL PROBLEMS



LOCAL PROBLEMS



WATER



GLOBAL PROBLEMS




LOCAL PROBLEMS



WATER





World Bank Report / 99 - Twenty Century saw wars caused by ideological differences, religious or control of oil reserves and the twenty-first century could be dominated by conflicts caused by the scarcity of WATER

TODAY: 250 million people in 26 countries face chronic lack of water resources

PREDICTION: In 30 years, the number will jump to 3 billion in 52 countries

THE GLOBAL WARMING CAUSES

are due to the 'extra' increase of the following gases:

- **Carbon Dioxide (CO₂) – 49%**

70 millions of tons of CO₂ are emitted to the atmosphere every 24 hours
Fossil fuel burning, vegetation changes (deforestation), biomass burning

- **Methane (CH₄) – 18%**

Bovine, pig and birds catering – earth of rubbish
Oil production

- **CFC's (clorofluorcarbon)– 14%**

Pressurized container, refrigerators and air conditioning
Electronic equipments
Aluminium and foundry products

- **Nitrous Oxid (N₂O) – 6%**

Fertilizers industries
Oil combustion

- **Other gases – 13%**



**“In order to survive to the present fast changes,
we must be prepared to analyse the standards of
our own based organizations”**

Alvin Toffler – ‘A Empresa Flexível’

**“Companies are responsible by environment and
must coordinate all its business in relation to
environment responsibility and in order to
protect Earth”**

Ken O'Donnell – ‘A Alma no Negócio’

NEW BUSINESS MISSION

BEFORE

To make good use of the water resources of the Parana River in hydraulic terms, owned jointly by both countries from and including Salto Grande de Sete Quedas, or Salto de Guaíra, to the mouth of the Iguassu River

PRESENT

To generate high-quality electricity with social and environmental responsibility, driving **sustainable**, economic and technological development, as well as tourism, in Brazil and in Paraguay

Situational Strategic Planning
September 5, 2003



FOCUS: Social and environmental responsibility,
the new ethic of business behavior

LA PLATA RIVER BASIN



3.200.000 km²

ONE OF THE BIGGEST RIVER
BASIN IN THE PLANET

IGUASSU FALLS



NATIONAL PARK OF IGUASSU



MONDAY – PARAGUAY FALLS



ITAIPU BINACIONAL

Energy with Socioenvironmental Responsibility



ITAIPU
BINACIONAL

Nowadays

✓ **SYSTEMIC VISION OF
ENVIRONMENTAL
MANAGEMENT WITH FOCUS
ON SUSTAINABILITY**

Cultivating GOOD WATER



20 programs | 63 initiatives | 2,146 partners

Implemented on the Paraná River Watershed 3:

- covering 8000 km²
- 29 cities included
- 1 million people
- 70 micro watersheds served

www.itaipu.gov.br

Principles

Ethics of Care – we care for what we love The Earth Charter - Principles

- 1- Respect and care for the community
- 2- Ecologic integrity
- 3- Social and economic justice
- 4- Democracy and peace



The millennium goals

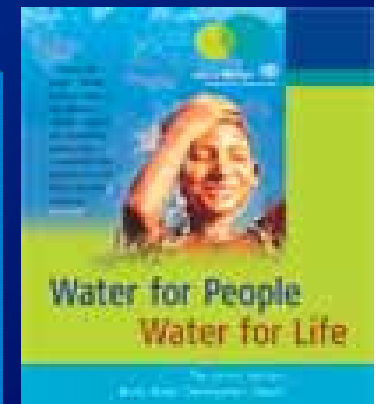


Treaty on Environmental Education for Sustainable Societies and Global Responsibility

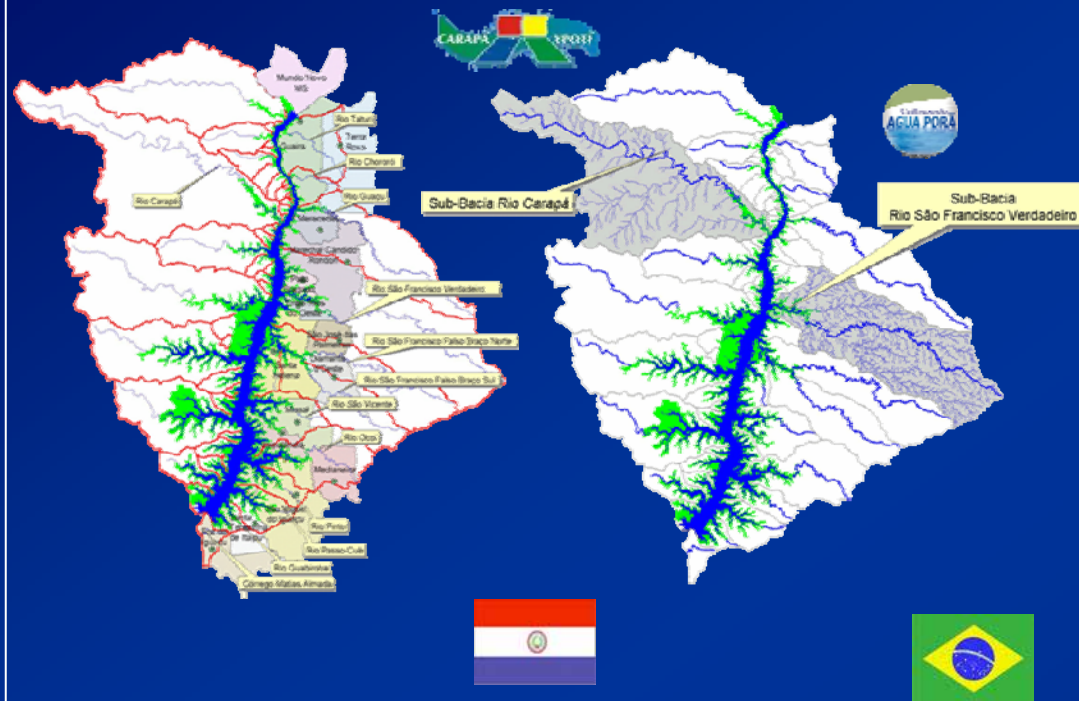
Water for all Water for life



- Eco Rio 92
- Agenda 21
- Global Pact
- Brazilian Public Policies
- National Conference on Environment
- Hydro Resources National Plan

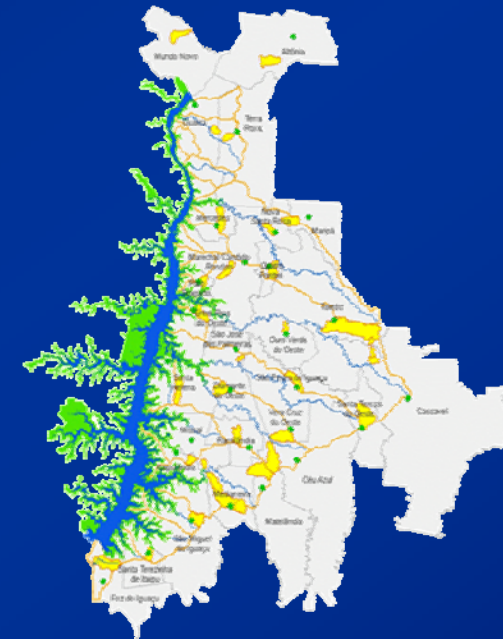


BASIN MANAGEMENT



**PREVIOUS CONCEPT:
BORDERS ALONG THE
CITIES**

**CURRENT CONCEPT:
BORDERS ALONG
THE BASINS**



**150
Selected Micro Basins
70
Recovered Micro
Basins**

Paraná 3 Basin

**1 Million inhabitants
29 Municipalities**

CULTIVATING GOOD WATER OBJECTIVES

- ✓ **Recovery of every single Paraná 3 Micro Basin**
- ✓ **Common management with local community**
- ✓ **Local action and global connection**
- ✓ **Support to vulnerable groups and promotion of social justice**
- ✓ **Construction of Culture for Peace and Water Culture**
- ✓ **Implementation of Ethics of Care**
- ✓ **Construccion of Sustainability**
- ✓ **Search for a new way of Being, Feeling, Living, Producing and Consuming**
- ✓ **Construction of Solidarity between peoples and from people to the nature**

IMPLEMENTATION PROGRAM STEPS



External Management Committee model



WORKSHOPS FOR THE FUTURE

175
workshops

The Wailing Wall



The Tree of Hope



A Path Ahead



Marechal Candido Rondon



Missal



Medianeira



Pato Bragado



Water Pacts

Santa Helena



São Miguel do Iguaçu



Itaipulândia



Quatro Pontes



Foz do Iguaçu



Guaíra



Altônia





THE

TS

MYSTIC OF PEACE

MYSTIC OF EARTH

MYSTIC OF AIR



Terracing

557,5,5 h
Land drainage



No Tillage

51.444,22 ha
Soil Conservation



517
Water Community Supply
Centers
442,8 t

Fertilizers correct destination



Green Fertilization



146

Manure distributors

**BASIN
MANAGEMENT
COLECTIVE ACTIONS**



Spring waters restoration



4.156.905
Trees planted in
the protected belts



3.053
Farmers and
technicians capacitated



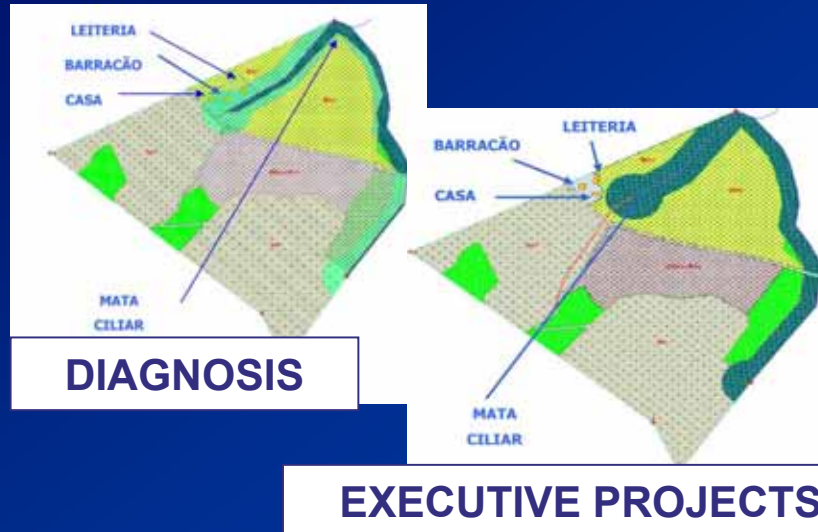
1.972,01 km
Upgrading Roads



599,80 km
of fences and
Beaver zones

7,433

Environmental Control Plans



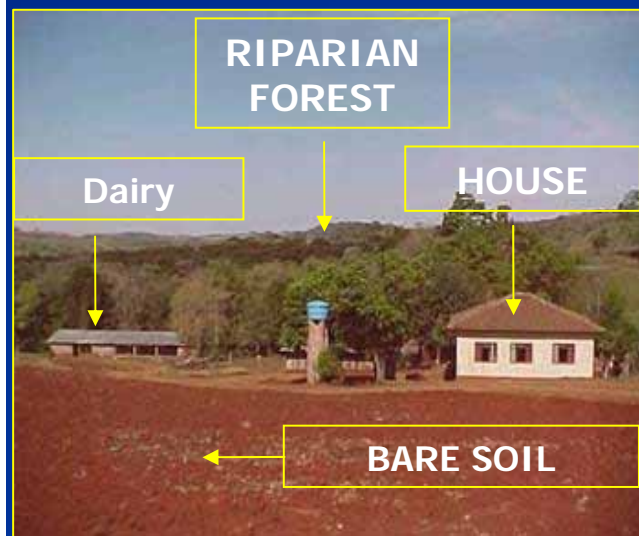
80% { Universities + Co-ordination

20% { Incubators + International hydro-Information Centre



BASIN MANAGEMENT - INDIVIDUAL ACTIONS

ENVIRONMENTAL LIABILITY CORRECTION



Rural Sustainable Development

187

Organic producers in the
beginning of the programme

967

Organic producers
with technical support



Medicinal Plants [141 species]

- ✓ 118 Medicine gardens established
- ✓ 870 School cookers capacitated
- ✓ 129.000 seedlings donated



Fish Production

- ✓ 730 Fish cage established
- ✓ 3 Aquicultural Parks
- ✓ Structure of Fishing Points



Avá Guaraní Community

- ✓ 1,020 People
- ✓ 200 t of organic mandioc / year
- ✓ Pray's house, residences

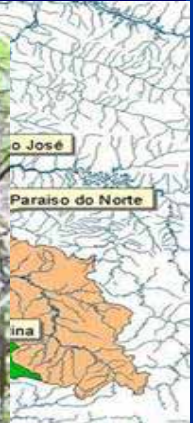
Solidary Collecting

- ✓ 1,667 Capacitating collectors
- ✓ Capacitation
- ✓ Chariots, uniform kits, equipments



Young Gardener

- ✓ 260 Graduation
- ✓ 20 Gardeners in course
- ✓ Gardener's kits being delivered



PART
MON



2 8:52

on in
r the

identification of aquatic
organism

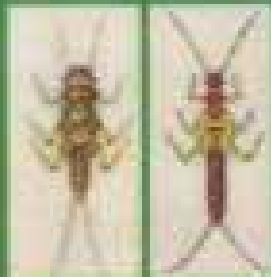
COLABORATIVE MONITORING PROGRAM

Objective:

Capacitating of local population on water quality monitored by identification of aquatic organism



Organismos sensíveis

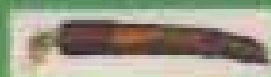


Plecoptera

2 cascos proeminentes
setas longas, pernas
nas 3 partes.
Comprimento: 10-25mm

Ephemeroptera

3 cascos, brânquias
no abdômen.
Comprimento:
10-20mm



Trichoptera (larva)

Vivem em cascos de
madeira, folhas secas.
Comprimento: 10-20mm



Megoptera

Muitos são
grandes e
longos, com
setas no
corpo.
Comprimento:
10-20cm



Crustacea

Alguns vivem na água,
outros no solo.
Comprimento:
10-20mm



Coleoptera

Alguns são muito
grandes e fortes. Uns
são muito pequenos
e vivem na água.



Organismos Intermediários

Odonata



São as libélulas.
Comprimento: 10-50cm.
Alguns têm as asas grandes,
pernas nas 3 partes, abdômen
arredondado e olhos cobertos
as outras partes brancas.

Outras possuem corpo
esguio, abdômen fino,
brânquias em forma de
folha e antenas longas.



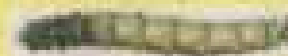
Trichoptera (larva)



São de vida livre, variáveis,
com pernas no final do corpo,
brânquias no abdômen e 3 pernas.



Ephemeroptera (larva)



Pernas longas e fortes.
Tem corpo variável
com cabeça distinta e
sem pernas.
Comprimento: 10-40mm



Hemiptera

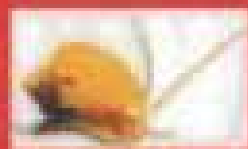


Perceções aquáticas.
Pernas e aparelho bucal
semelhante a um bico.
Bucha "endémica" sobre a
água.



Organismos tolerantes

Malacostraca



Correio de água doce. Há
diversos tipos mas em geral
são organismos resistentes.
Podem comer de vários
tipos e tamanhos.
Alguns espécies podem
sobreviver dentro de um
copo de plástico.



Copepoda (larva)

Mesquita e mosca. Geralmente são
fáceis de criar e fazer por.
Alguns espécies de
Copepoda podem
sobreviver e viver
dentro de um copo.



Similares às larvas de borboleta. Têm uma
extremidade de corpo mais longa que a
outra e um bico de sucção no corpo por
dentro. Vivem dentro de pedras e outros
objetos dentro de um copo de plástico.

Hydrata

Organismos de água
doce e de água salgada.
Vivem em um copo
de plástico.
Comprimento: 5-40mm



Chironomidae

São os mosquitos.
Podem viver em água
doce e de água salgada.
Comprimento: 5-20mm





483

Presentation of
"A Matita" theater



105

Networks on corporative
environment and education in
Brazil and in Paraguay



3.069/YEAR

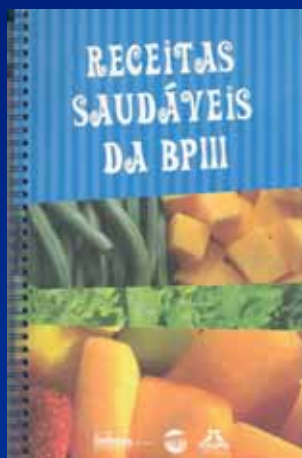
Visits to the Ecomuseum
and to the
Biological Protected Area



135.000

Students receiving
the brochure

ENVIRONMENT EDUCATION



10.400 Protagonists on
Environmental Education
in the Paraná 3 Basin



PAP 2

TREATY ON ENVIRONMENTAL
EDUCATION FOR
SUSTAINABLE SOCIETIES



ECOLOGICAL LINE

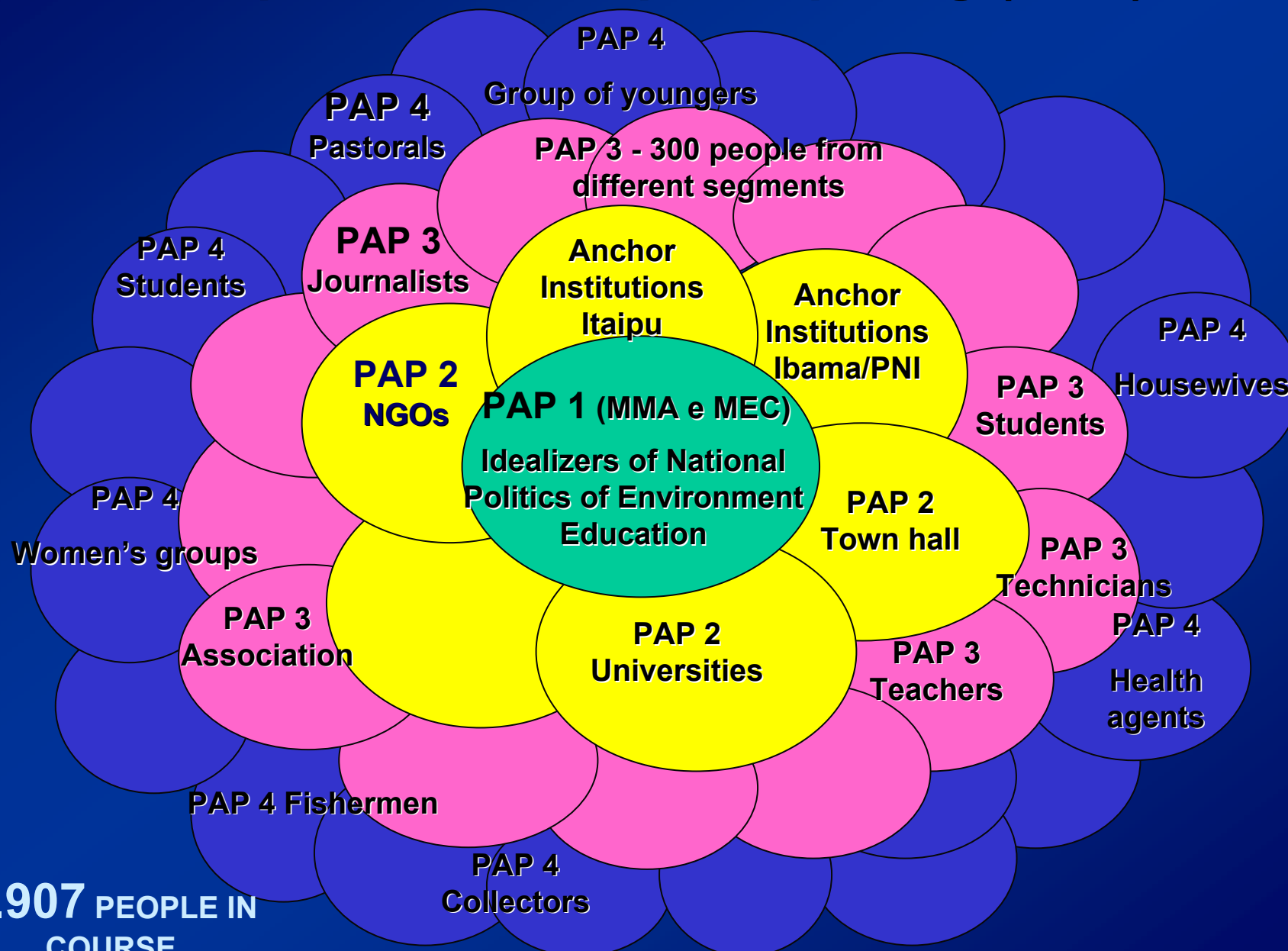


800 class hours

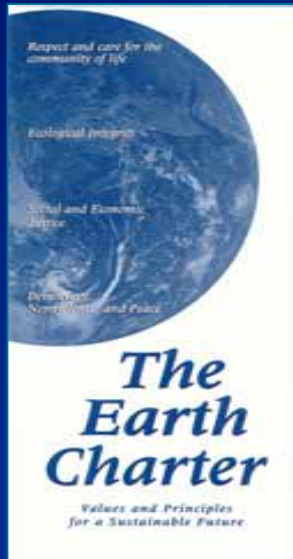
255 Environment Educators /
34 Involved municipalities

PARTICIPATIVE RESEARCH ACTION

People who learn participating (PAP)



65 WORKSHOPS ON CULTURE OF WATER



2006



2008

WATER CULTURE

A water fountain with a globe on top, set against a background of green foliage. The globe is positioned at the top of a vertical water column. The background is a soft-focus image of green leaves and branches.

- ✓ **Is the relation all societies have with water**
- ✓ **Is what we do with water, for water and in water**
- ✓ **Is the way conflicts are solved**
- ✓ **Is originated from the water use**
- ✓ **Are the dreams and poems concerning water**

ALL PEOPLES HAVE A WATER CULTURE

- ✓ **Changes must be cultural in order to become permanent**
- ✓ **Water management and water technology come after water culture**
- ✓ **This is why water is a social and cultural good, as well as a right of everybody, including the ecosystems**
- ✓ **Also, water is the ethics principles and is registered in the myths and legends of our peoples and religions**

A water fountain with a central vertical pipe and a rainbow in the background.

FOR THE FIRST NATION CITIZENS

- ✓ **Water is sacred**
- ✓ **Water is a living being**
- ✓ **Water gives life**
- ✓ **Water is a social being**
- ✓ **Water is a spiritual being**
- ✓ **Water is the principle for everything**
- ✓ **Water is part of the ethic values**
- ✓ **Water is the basis of the cultures**

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WORKSHOP OF EARTH CHARTER



✓ 65 workshops



BIODIVERSITY: OUR INHERITANCE

732.863,16t Sequestration of Carbon per year

Area: 60.500 ha

Average wideness - 210 m

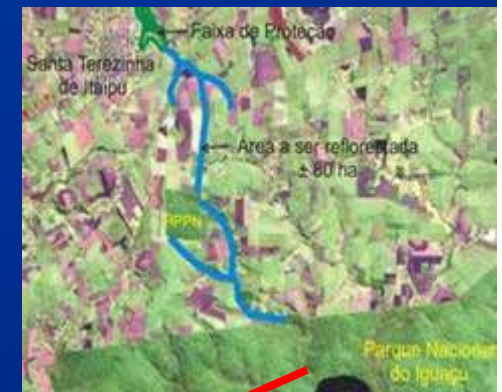
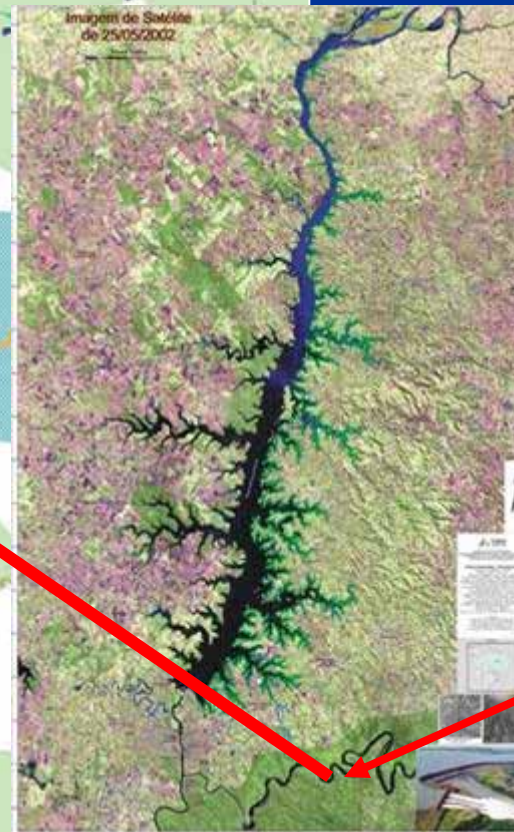
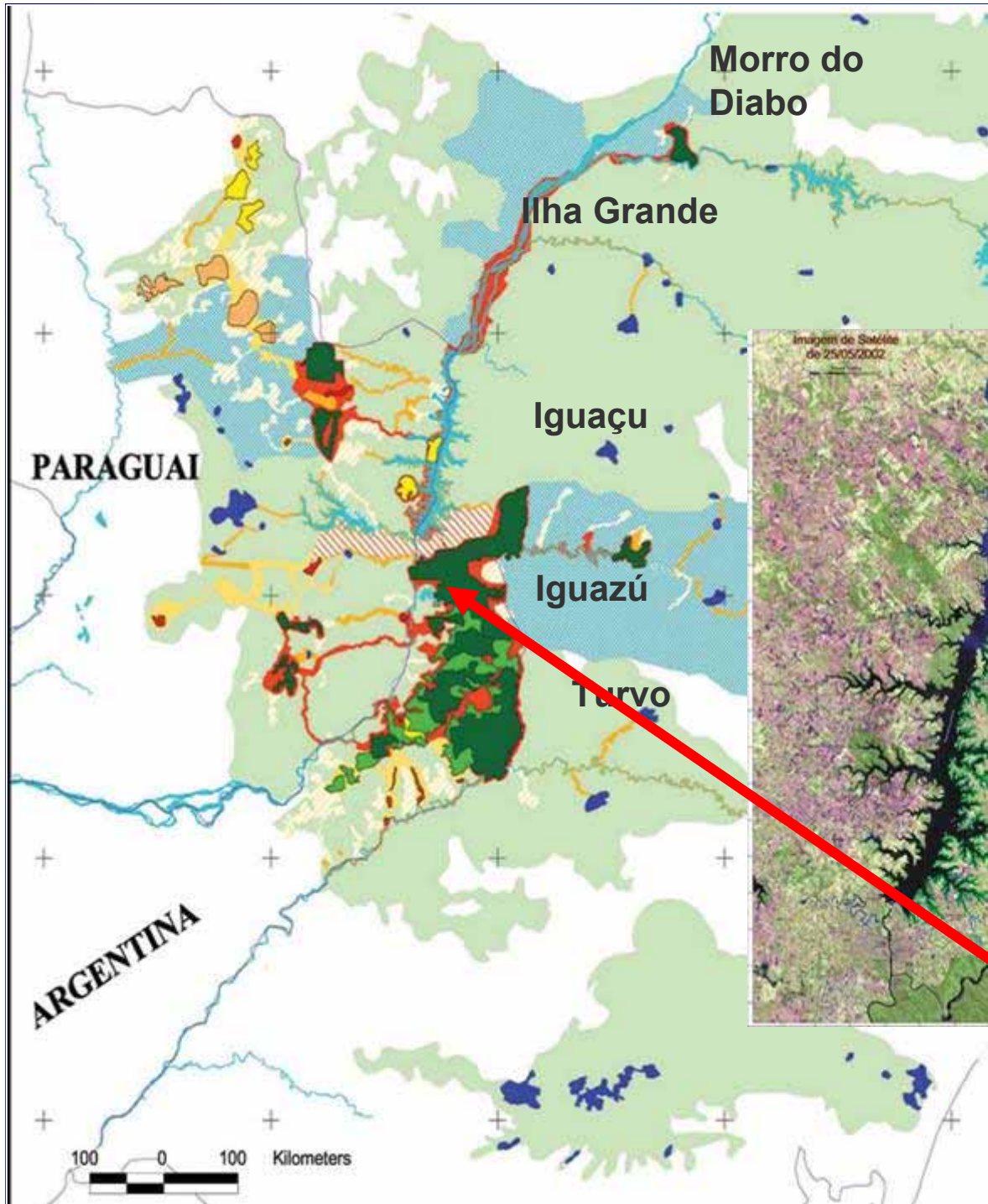
Length - 2.900 km

43 millions of planted trees

**Total of protected areas + protection belt:
100.531 ha**



Three-Nation Biodiversity Corridor



Biodiversity Corridor

CORRIDOR IN SANTA MARIA

Itaipu's forest protection belt

Iguassu National Park



NATIONAL PATRIMONY PRIVATE RESERV - Sta. María Farm (240 ha)



Solar Energy



Biofuel



Eolic Energy



- ✓ Pigs breeding
- ✓ Birds breeding
- ✓ Agroindustry



Electric chariot



Hydroelectric



**Sanitary
Embankment Energy**



Electric vehicle



**Iguaçu Star Milk
Farm – Céu Azul**



Columbari Farm



**Wastewaters & Biomass
Treatment Station - "Shalon"**



AGROENERGY CONDOMINIUM FOR FAMILY AGRICULTURE



- ✓ Animals dejecta
- ✓ Bio-digestor
- ✓ Gas pipeline
- ✓ Bio gas electric power plant
- ✓ Bio fertilizer
- ✓ MDL (Clean Development Mechanism)





Centro Internacional
de Hidroinformática

INTERNATIONAL CENTER OF HIDROINFORMATIC (CIH)

COOPERATION

UNESCO / PHI - Programa Hidrológico Internacional

UNESCO / PHI – Oficina Regional América Latina y Caribe - LAC

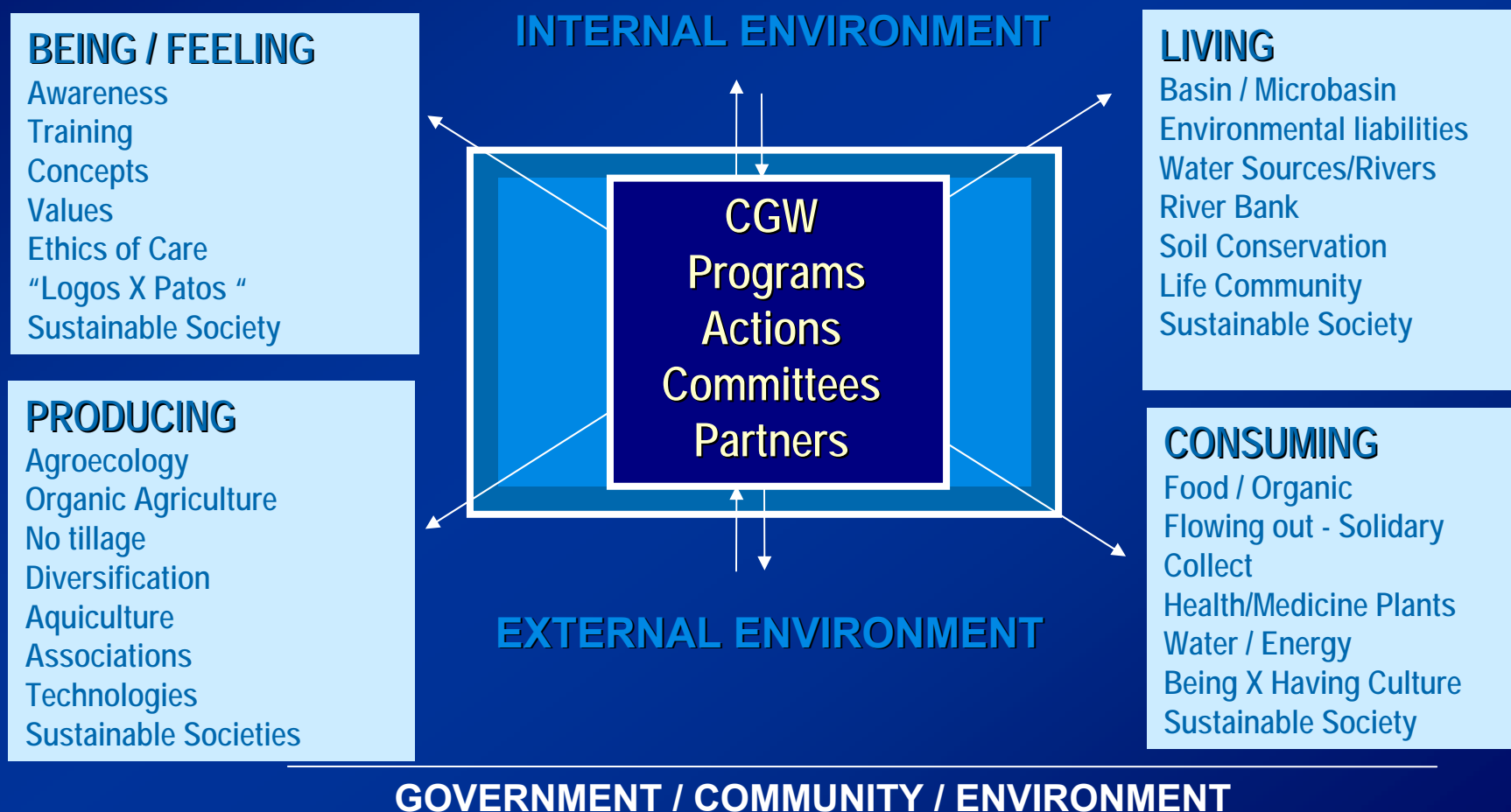
Gobierno del Brasil - COBRAPHI – Comisión Brasileña del PHI

Gobierno del Paraguay - CONAPY - Comisión Nacional del PHI del Paraguay

ITAIPU BINACIONAL PY / BR

CULTIVATING GOOD WATER

2006-2009 BASE ACTIONS FOR SUSTAINABILITY

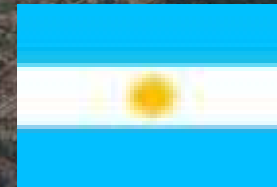




**“THAT OUR TIME BE REMINDED BY THE AROUSING OF
A NEW REVERENCE TOWARD LIFE, WITH A STRONG
COMMITMENT TO REACH SUSTAINABILITY, BY A FAST
FIGHT FOR JUSTICE AND FOR PEACE AND BY A HAPPY
CELEBRATION OF LIFE.”**



The Earth Charter





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