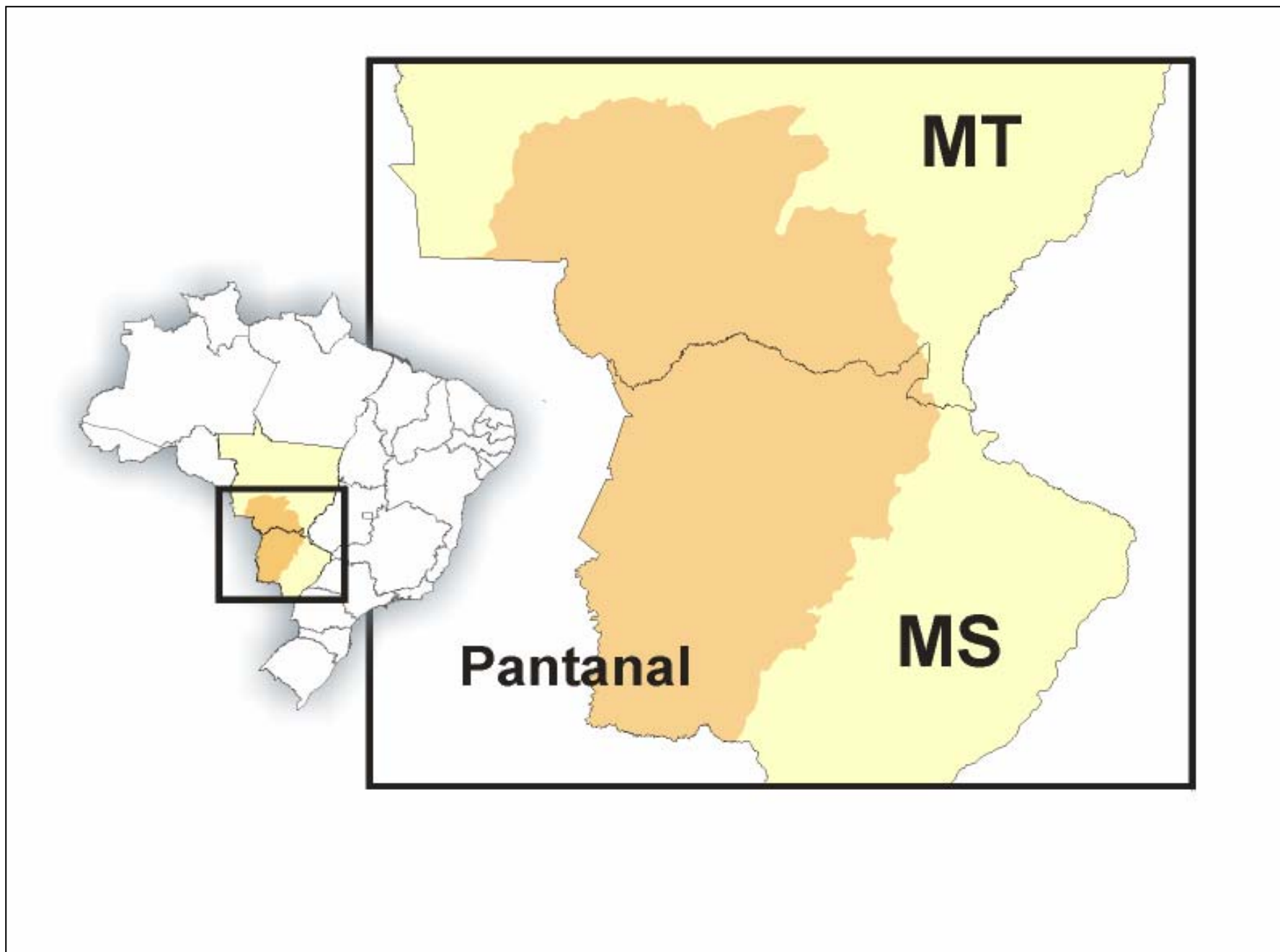




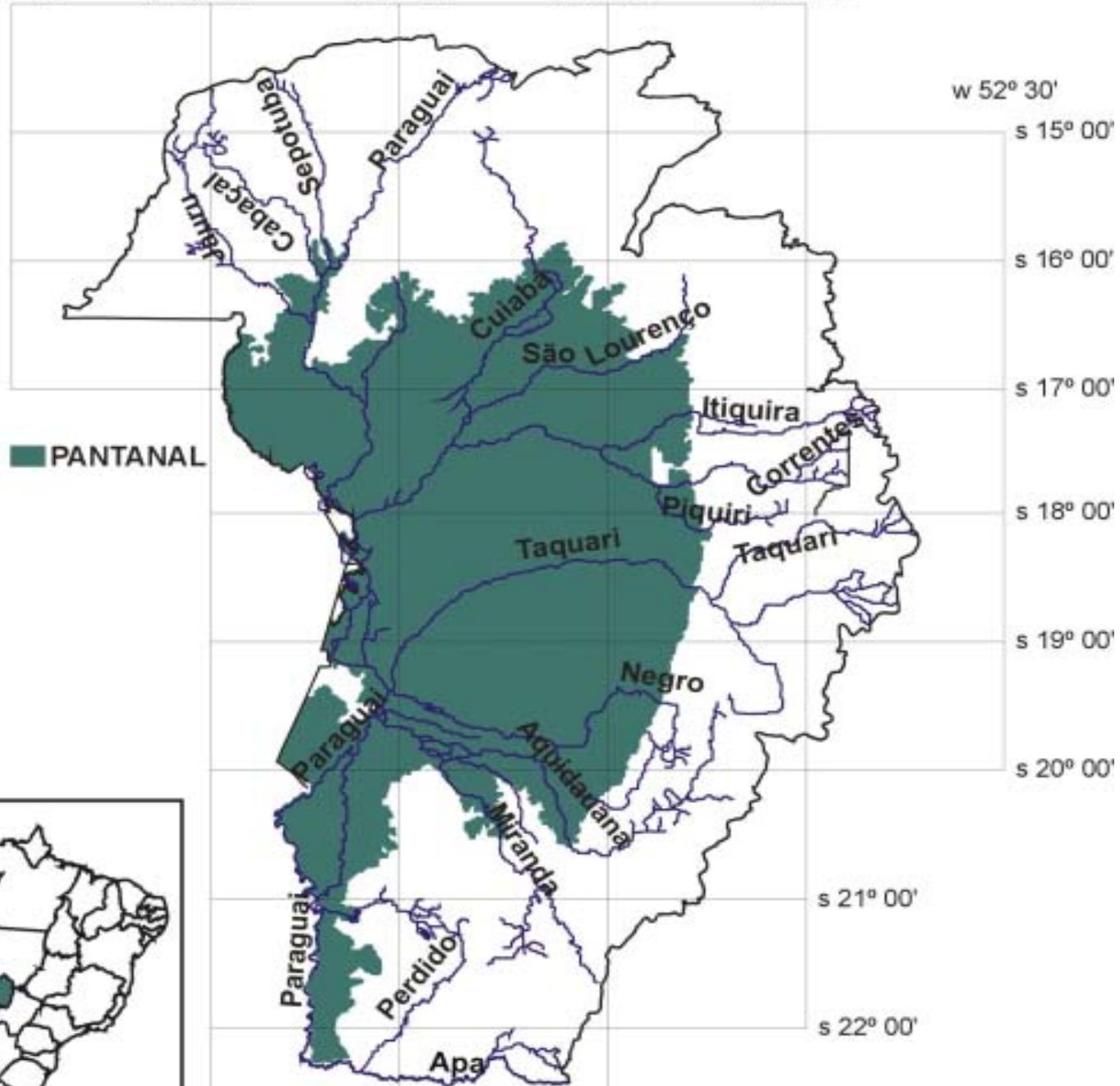
Programa
PANTANAL



The Pantanal

- Pantanal is the largest complex of wetlands in the world - it is part of the Upper Paraguay River Basin (UPRB)
- UPRB comprises an area of 496.000 Km², being 361.666 Km² within Brazilian borders and the remaining section in the republics of Bolivia and Paraguay
- It is made up of ten large rivers, deltas, lagoons, and salt pans
- The Brazilian section of UPRB can be divided into 2 main areas: floodplains and "plateaus"
- Major driving force: annual oscillation between ebb/flood seasons
- The water flow reaches very low speeds, due to a very gentle slope:
 - 10 - 20 cm/Km on the East-West direction
 - 01 - 05 cm/Km on the North - South direction

w 60° 00' w 58° 30' w 57° 00' w 55° 30' w 54° 00'



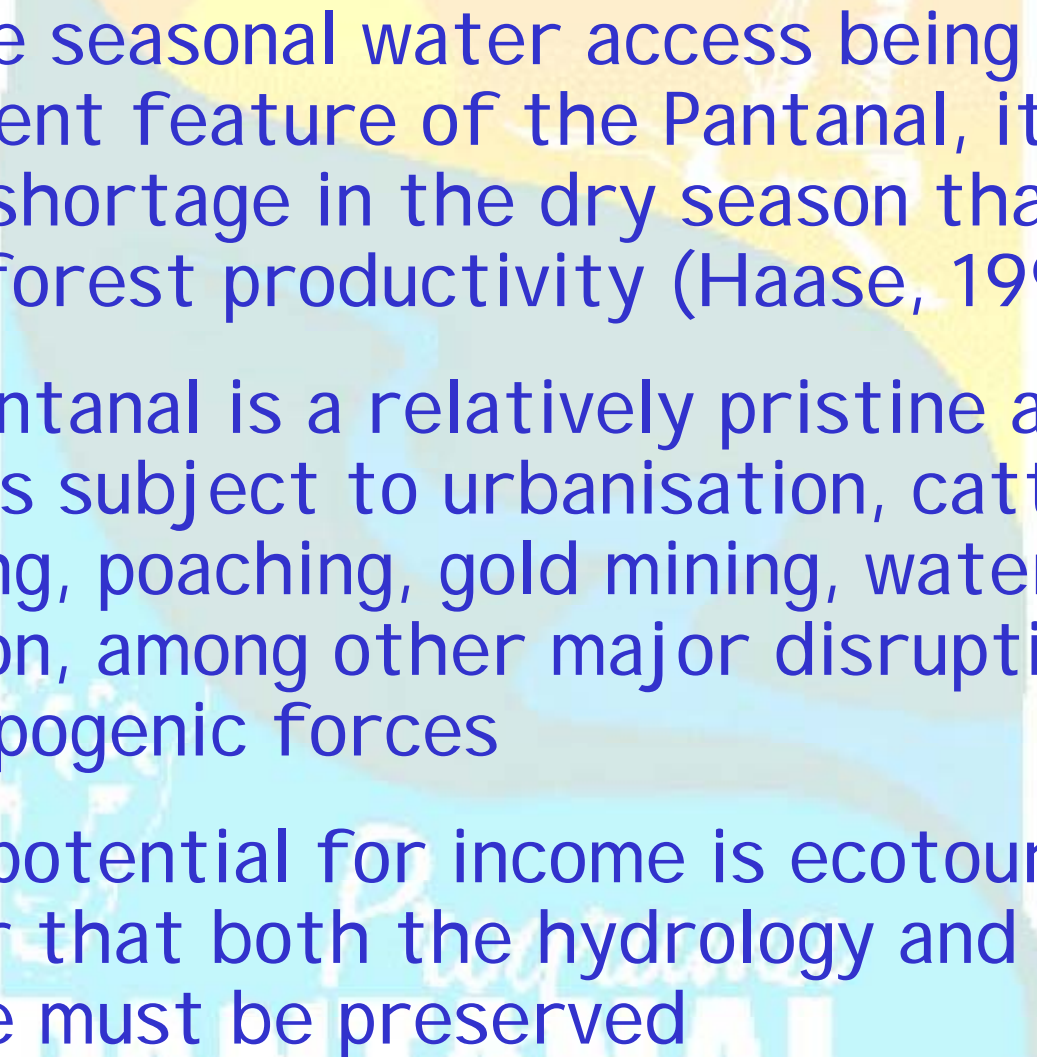
Remarks about the Pantanal Geography:

- The Pantanal was created 100 million years ago; it has been subsequently filled up by deposits of quartz sand and aluminium silicate clay sediments, with a depth of 100 m or more (Hylander et al., 2000)
- It is a wonderful centre of aquatic and bird diversity (Prance, 2000)

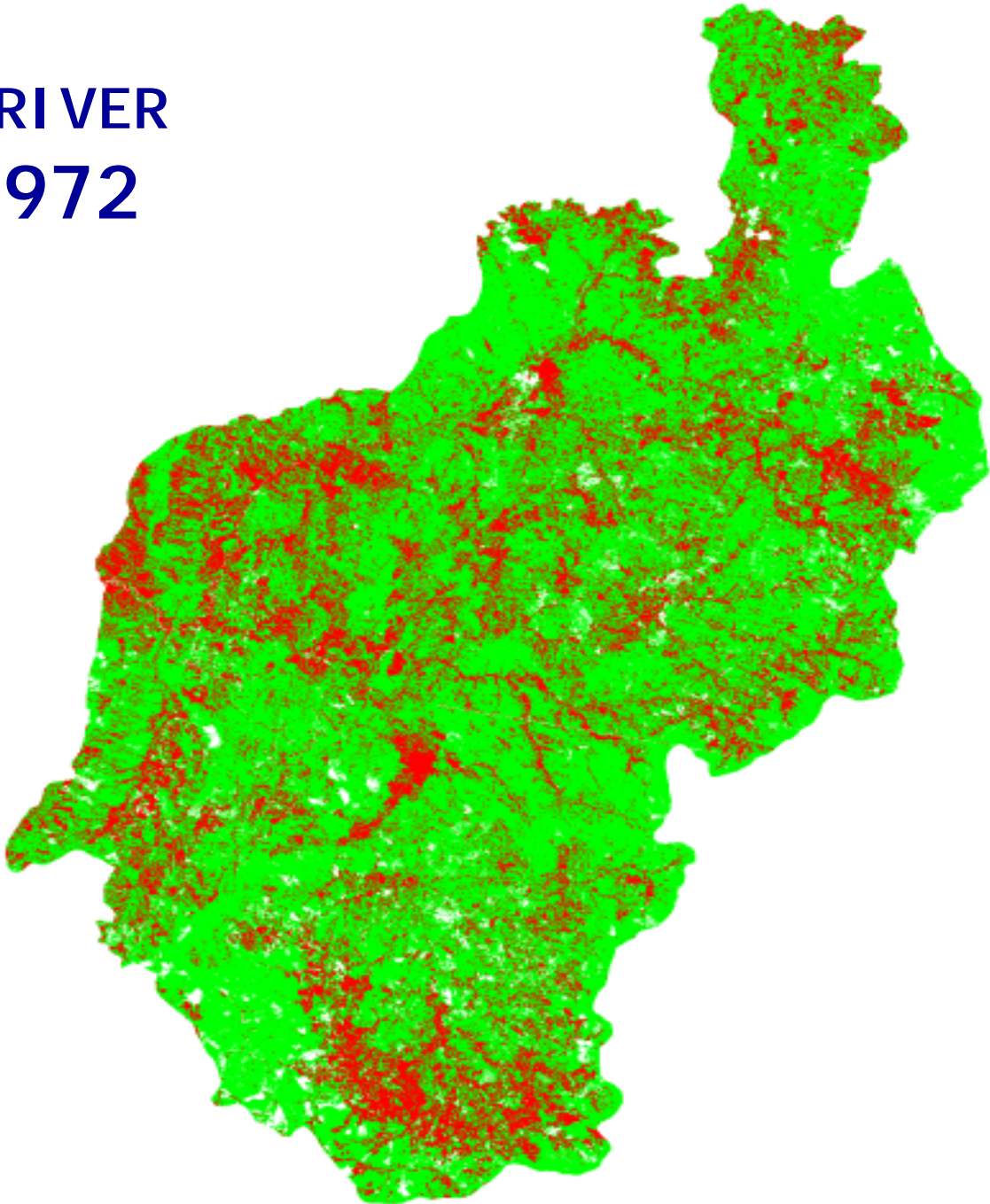
Pantanal Biodiversity

Birds (50% of Brazilian <i>spp.</i>)	660 species
Reptiles and Amphibians	290 species
Fishes	262 species
Cattle	3.900.000 heads
Capybaras	430.000 animals
Deer	23.000 animals
Caymans	3.700.000 animals
Ant-eaters (<i>tamanduás</i>)	5.000 animals

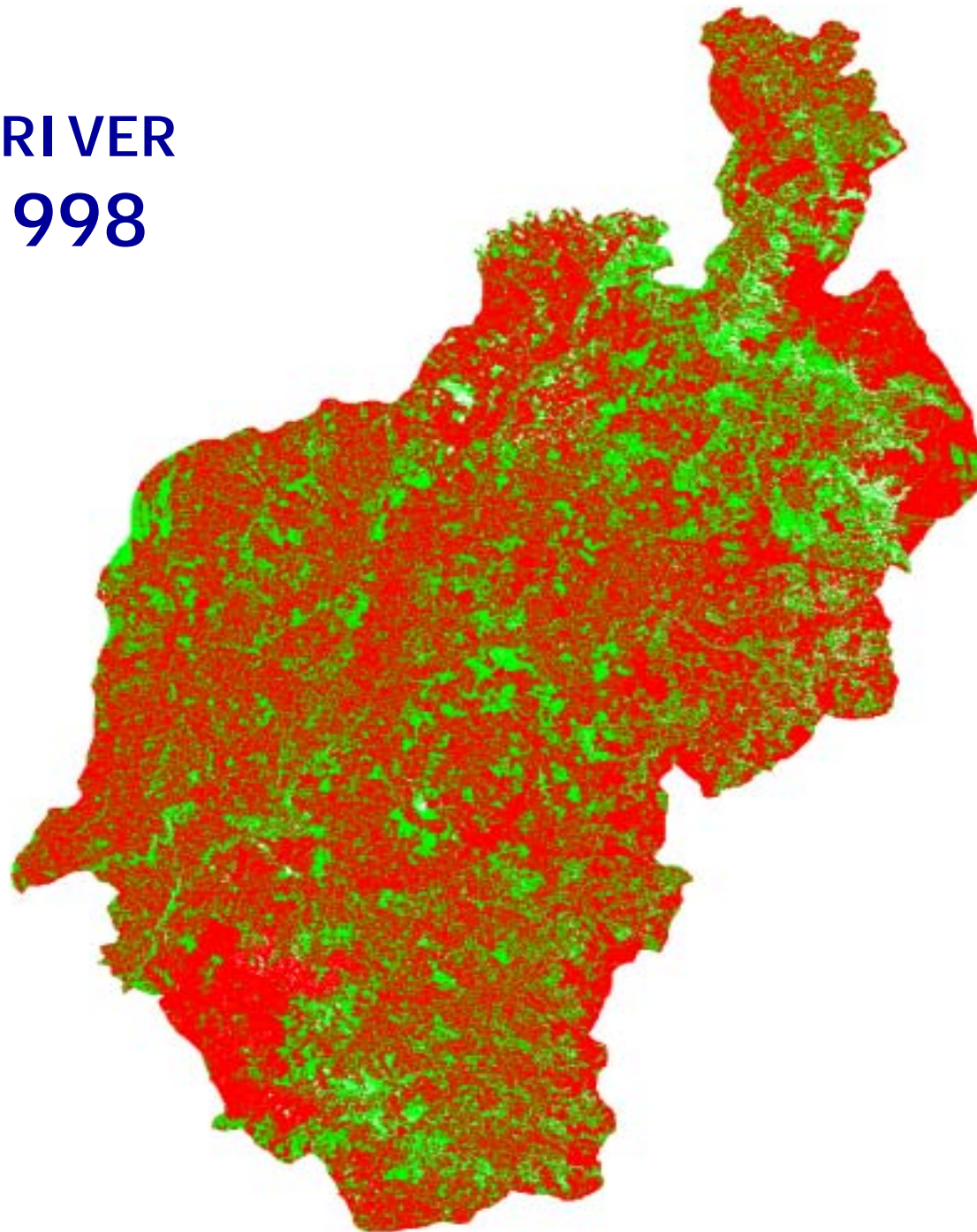
Source: CPAP-Embrapa (1999)

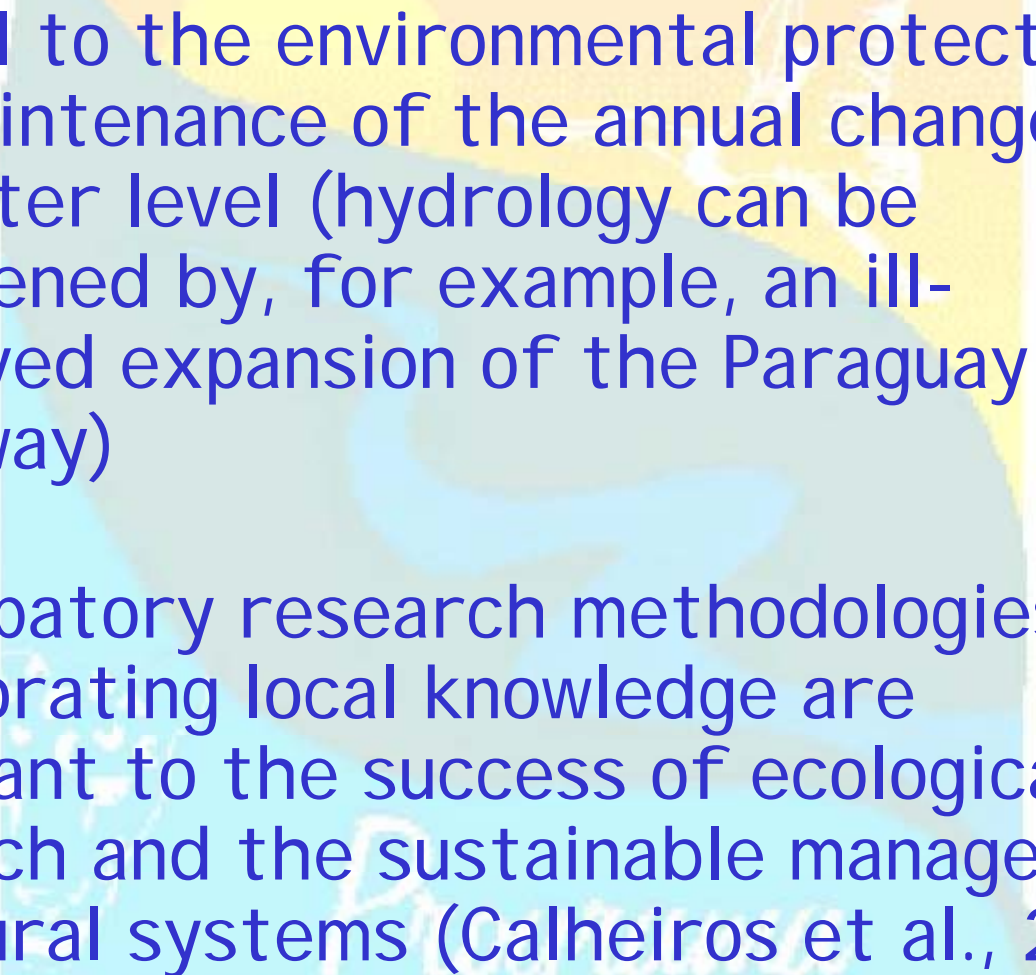
- 
- Despite seasonal water access being the prominent feature of the Pantanal, it is the water shortage in the dry season that limits forest productivity (Haase, 1999)
 - The Pantanal is a relatively pristine area, but it is subject to urbanisation, cattle ranching, poaching, gold mining, water pollution, among other major disruptive anthropogenic forces
 - Great potential for income is ecotourism, but for that both the hydrology and the wildlife must be preserved

**TAQUARI RIVER
BASIN, 1972**



**TAQUARI RIVER
BASIN, 1998**



- 
- Central to the environmental protection is the maintenance of the annual changes in the water level (hydrology can be threatened by, for example, an ill-conceived expansion of the Paraguay river waterway)
 - Participatory research methodologies incorporating local knowledge are important to the success of ecological research and the sustainable management of natural systems (Calheiros et al., 2000)

Monetary Values of the Pantanal Environmental Services:

Constanza et al. (1997) -

U\$ 10.000/hectare/year

Seidl and Moraes (2000) -

U\$ 5.840/hectare/year

(water supply represents 34%)

Land price = U\$ 100-200/hectare

→ *"Lauderdale Paradox" (1819)*



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PANTANAL

The Pantanal is a National Priority

- The Program was included in the Multi-Annual Plan of national priorities (the so-called *PPA 2000-2003 "Avança Brasil"*)
- In the beginning of 2001 it was selected as one of the 35 most strategic initiatives of the Federal Government

A Program for the Sustainable Development of the Pantanal

Mission Statement

Intermediate-term : the stabilisation of the environmental quality of the Pantanal ecosystems

Long-term : the use of natural capital for sustainable economic activities, considering the human, economic and ecological dimensions

Program Execution Responsibility

- Ministry of the Environment
 - Secretariat of Environmental Quality in Human Settlements (General Coordinator)
 - IBAMA (Inst. Env. & Nat. Res.)
- State governments of Mato Grosso and Mato Grosso do Sul

PANTANAL

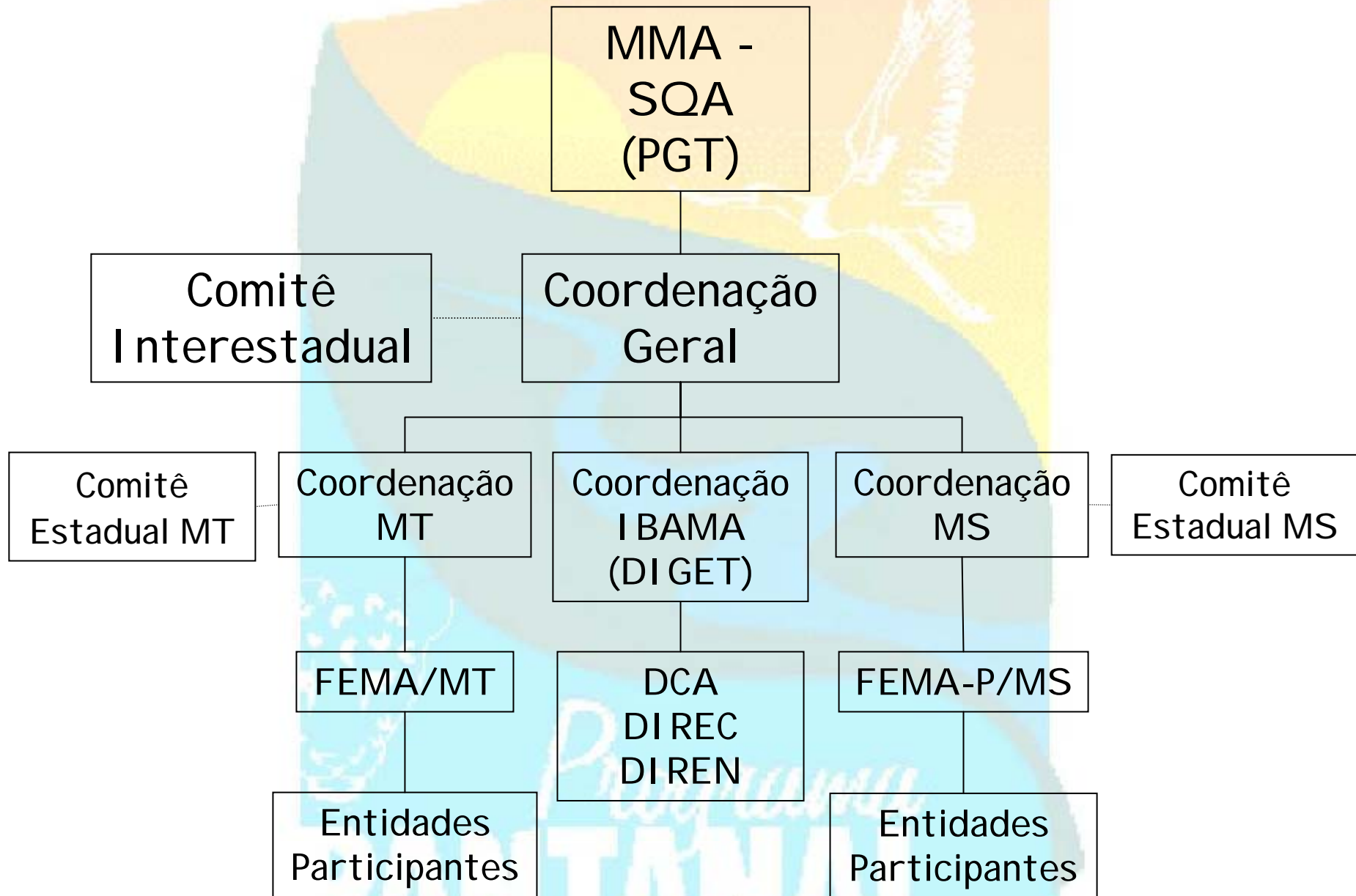
Financial Aspects

- International Financial Institutions: IDB and JBI C (under negotiation)
- National Financial Institutions: FEDERAL TREASURY and STATE GOVERNMENTS
- Period of Implementation: 2001 - 2009 (2 phases of 4 years each)
- Total Budget: Up to US\$ 400 MILLION
- PHASE I: US\$ 165 MILLION
- PHASE II: US\$ 235 MILLION
- The loans will be transferred to the states without future re-payment to the federal government

Other Involved Costs

- CENTRAL COORDINATION
(including the management firm)
- FINANCIAL CHARGES (interest and fees)
- INSPECTION AND SUPERVISION
- PARTICIPATION OF THE CIVIL SOCIETY

Programa
PANTANAL



COORDENADOR GERAL

COMITÊ INTERESTADUAL

ASSESSORIAS:

- INTERINSTITUCIONAL/Coordenador Geral Adjunto;
- ATENDIMENTO A COMUNIDADE INDÍGENA;
- ARTICULAÇÃO COM A SOCIEDADE CIVIL ORGANIZADA;
- EDUCAÇÃO AMBIENTAL/TREINAMENTO;
- FINANCEIRA/ADMINISTRATIVA;
- MONITORAMENTO/AVALIAÇÃO.

ADMINISTRAÇÃO

SECRETARIA E ARQUIVO

GERÊNCIA VERDE

ATIVIDADES:

UNIDADES DE CONSERVAÇÃO;
RESERVA DA BIOSFERA;
PESCA E FAUNA;
ECOTURISMO;
ESTRADAS PARQUE;
POLÍCIA AMBIENTAL;
CORPO DE BOMBEIROS;
PRODUTORES RURAIS.

GERÊNCIA AZUL

ATIVIDADES:

ADMINISTRAÇÃO DE BACIAS;
MANEJO DE BACIAS CRÍTICAS;
ATIVIDADES MINERADORAS;
PLANÍCIE DO TAQUARI.

GERÊNCIA MARROM

ATIVIDADES:

ÁGUA;
ESGOTO;
RESÍDUOS SÓLIDOS

Projects

- 1- WATER RESOURCES MANAGEMENT
- 2- SOIL AND PESTICIDE MANAGEMENT
- 3- PROTECTION OF HABITAT, FISH AND WILDLIFE
- 4- URBAN SANITATION
- 5- SUPPORT FOR SUSTAINABLE ACTIVITIES
- 6- PARKWAYS AND SCENIC ROADS
- 7- ENVIRONMENTALLY SUSTAINABLE INDIGENOUS AREAS (SPECIAL PROJECT)

PANTANAL

Project: Administration of Water Resources

1st Phase: US\$ 13,50 MILLION

Objective

The purpose of the first phase is to monitor water quality and availability in priority areas, and to regulate surface and ground water usage. Water management instruments included in the new federal and state legislation will be implemented. The second phase will extend monitoring and regulation to the rest of the river basins.

Project: Soil and Pesticide Management in Critical Sub-Watersheds

1st Phase: US\$ 20,50 MILLION

Objective

The reduction of silt and agrottoxics in four critical watersheds (Vermelho and São Lourenço rivers in MT; Miranda and Taquari rivers in MS). The project will finance the preparation and implementation of integrated micro-watershed management plans. It also includes the control of unlicensed mining activities and the recovery of areas degraded by past mining activities.

Project: Protection and Management of Habitat, Fish and Wildlife

1st Phase: US\$ 12,55 MILLION

Objective

The preservation and conservation of representative ecosystems and the protection against poaching and over-fishing. It comprises the consolidation of federal and state parks, the Man and Biosphere Reserve, fish reserves and spawning areas, equipment to forest police and fire-fighters, as well as ecological studies.

Project: Urban Sanitation

1st Phase : US\$ 27,45 MILLION

Objective

The improvement of the quality of tributary rivers and the adequate disposal of solid waste. The first phase will focus on 9 cities for water supply and sanitation in MS, and also the institutional strengthening of the autonomous sanitation company of Cuiabá (SANECAP). It includes the preparation of a strategic plan for the management of solid waste for the whole UPRB.

Project: Support for Sustainable Economic Activities

1st Phase: US\$ 11,10 MILLION

Objective

To stimulate economic activities that do not adversely affect the environmental quality of the Pantanal, including sustainable agriculture, cattle production and fish management. It will finance a master plan to develop ecotourism, as well as activities related to tourism enhancement.

Project: Parkways and Scenic Roads

1st Phase: US\$ 51,00 MILLION

Objective

To guarantee all-year access to parks and ecotourism attractions, provide evacuation routes for cattle during flood seasons and facilitate habitat protection by giving better access to fire-fighters and environmental enforcement agents. It includes 235,3 km of parkways, 86 bridges, 85,9 Km of scenic roads, and environmental assessment studies.

Special Project: Sustainable Activities in Indigenous Areas

1st Phase: US\$ 4,80 MILLION

Objective

The implementation of sustainable land use activities on indigenous lands. It will be financed: community organisation, restoration of gallery forests, reintroduction of traditional agricultural products, food production, water supply and sanitation, natural resources management, and appropriate tourism indigenous reserves.

Program Innovative Aspects

Effective Participation of the Civil Society

- One interstate committee and 2 state committees (the latter committees with a majority of participants coming from civil society institutions)
- In any training initiative along its implementation, it will be guaranteed **free participation** to a certain number of representatives from civil society institutions (to be nominated by each state committee)
- The program budget includes **US\$ 600,000** for **mobilization and institutional strengthening** of non-governmental organizations, always following deliberations of the state committees