

Case Study: Identify financial resources to support conservation activities after the completion of the Pantanal ecoregional assessment, Brazil¹

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Purpose and region of analysis

The Upper Paraguay River Basin of ca. 496,000 km² is shared by three nations—Brazil, Paraguay, and Bolivia. Three quarters of the planning area is in Brazilian territory. This case study illustrates the process followed by the Pantanal Ecoregional Planning team to determine the financial support necessary to implement conservation strategies developed during the ecological assessment.

Using one key strategy as an example, an action plan was first developed to identify the activities and resources needed for implementation to make ecoregional conservation a reality. The core funding to support the initiation of the action plan and the pursuit of external funding opportunities were supported by TNC and its partner, Mato Grosso State Environment Agency (FEMA-MT). TNC secured additional funds from the Caterpillar Foundation and optimized the investment through the Great Rivers Partnership in the hope of maximizing the investment potential and long-term sustainability of ecoregional conservation for the Upper Paraguay River Basin in Brazil.

Criteria / Methods

The ERA team conducted a 3-day workshop in June 2002, working with 102 participants on strategies and priorities for the conservation of the Upper Paraguay River Basin. Working groups were set up to develop strategies that can abate threats posed by human activities that cause unsustainable agriculture and cattle ranching practices, fishing and tourism industry, and hydrological alterations. At the workshop, participants were guided through the process of: determining threats; identifying the sources of those threats; developing strategies to mitigate those threats; determining how to implement the strategies; conducting a feasibility analysis; identifying who will implement each strategy; and, estimating the cost of each strategy.

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The workshop participants that contributed to the cost estimate of strategies included representatives from the following organizations:

- **Funding organizations:** IDB (International Development Bank), USAID
- **Environmental organizations:** Secretary of Municipality and State
- **Political organizations:** prefectures, consortium of municipalities, political leaders and representatives of communities, associations and committees.
- **Key stakeholders:** project coordinators

In November 2002, the ERA team further analyzed the results of the workshop of June 2002 in order to determine the most critical threats. Hydrological alterations caused by dams, dikes, roads, and inappropriate agriculture/ranching practices came out as the top two threats to biodiversity conservation in the region. Awareness of critical threats helped the team to identify priority strategies—sustainable water management, restoration of degraded areas in critical headwaters, sustainable agriculture, and invasive species control.

Products / Outcomes

An outcome of the June 2002 workshop was a clear set of strategies with associated cost estimates for implementation and maintenance. For example, the working group dealing with agriculture and cattle ranching practices estimated the costs of implementing and maintaining the proposed strategies. A sample of the results of this work are shown in the following table.

Key Threats	Strategies	Estimated costs for implementation (US\$)	Estimated costs for maintenance (US\$)
Erosion/pollution/ sedimentation by agrochemicals or excess of organic materials	1. Establish programs of monitoring and restoration technology for land owners in priority conservation areas	1,143,000	4,571,000
	2. Develop institutional alliances to monitor, research, and restore conservation areas	35,700	142,900
	3. Develop a “green protocol” to give incentives for sustainable use of natural resources	178,600	714,300
Habitat fragmentation	Implementation of basic sanitation plans by municipalities following the design of the IDB Pantanal Program	35,700	142,900
Altered hydrological regime	Implementing and strengthening two basin committees and environmental councils of municipalities	35,700	142,900
	Develop sustainable management practices including programs of technology transfer and communication	321,400	1,028,000

After the identification of critical threats and the associated strategies to mitigate these threats, TNC worked with FEMA-MT (Fundação Estadual do Meio Ambiente do Mato Grosso) to develop an action plan to implement the proposed key strategies. For each activity, financial resources and time needed were estimated. Selected activities, estimated costs, and timelines are summarized in the following table.

Action/Activity	Project duration	Budget (US\$)
Refine the portfolio map of priority conservation areas	8 months	15K
Ecologically sustainable water management	2 years	50K
Restoration of degraded areas in critical headwaters	2 years	180K
Implementation of best management practices	2 years	220K
Control of invasive species	4 years	600K
Develop a monitoring program for key conservation strategies	2 years	800K
Total		1,865K

Following the action plan, TNC and partners secured funding and initiated the following conservation projects. Although the funds have not reached the budgeted level, the obtained funding allowed us to jump start three key conservation activities (highlighted items in the table above).

- **Cuiabá River Basin ecologically sustainable water management project:** Working with TNC and its partner, Mato Grosso State Environment Agency (FEMA-MT), the project seeks to restore the natural flow regime of the Cuiabá River and tributaries, and develop water and energy policies that can influence adaptive management. A formal MOU was signed in 2003 and project activities began. Estimated costs were about US\$ 20,000 for the first two years. Additional funds are needed to complete the work, which would take two more years.
- **Restoration of degraded areas in critical headwaters:** The MOU between TNC and FEMA-MT includes the restoration of the Cuiabá River headwaters. The project goal is to create a restoration model in a pilot site at the Cuiabá headwaters to demonstrate that restored areas will be ecologically functional for long time. The model will be replicated in the entire watershed. TNC and FEMA plan to create a fund of ca. US\$100K to help small and medium-size farmers to restore degraded land within the Environment Protection Area (APA–Área de Proteção Ambiental) at the headwaters of the Cuiabá River. The rules to manage the fund will be discussed in a participatory manner according to local needs. US\$ 40,000 has been earmarked for the first 2-years of activities.
- **Best management practices (BMPs)** is another high-leverage strategy implemented in the Cerrado at the Araguaia watershed. The project intends to create incentives and bring additional economic benefits to farmers who adopt the BMPs, while reducing environmental impacts on soil and water. Activities such as multi-institutional alliances, training in soil management techniques or land use planning are included in this project.

If the project is successful, the same model will be replicated in the pilot area of the Taquari headwaters. Estimated costs in the first 2 years are US\$ 200,000.

Lessons learned (strengths and weaknesses)

The Pantanal Ecoregional Assessment was one of the 44 sub-projects of the GEF (Global Environment Facility) Upper Paraguay/Pantanal Project. The total GEF Project budget was US\$16 million to finance the 44 sub-projects in phase I. The GEF project phase I was concluded in 2004 and a project report was published. The report includes lists of recommendations for each sub-project. The Brazilian Government negotiated with financial institutions to begin a phase II project, which unfortunately never materialized.

Strengths: TNC was successful in raising funds to implement the activities proposed by the Pantanal ERA. Of the US\$12 million donated by the Caterpillar Foundation to TNC, the Great Rivers Partnership (GRP) appropriated US\$2.5 million to restoration and best management practices (BMPs) in the Upper Paraguay Basin.

Weaknesses: The Great Rivers Partnership has to match Caterpillar donation in a ten to one ratio (over five years). In Brazil, we are facing difficulties in fundraising and achieving such a goal.

Suggestions for Others

The Pantanal ERA gained significant political visibility because it was developed within the GEF Pantanal Project, but this did not necessarily lead to GEF funding of phase II. The ideal situation would be to engage potential donors in the beginning of the Ecoregional Assessment.

References

GRP web site: <http://www.nature.org/wherewework/greatrivers/>

GEF Pantanal/Upper Paraguay web site: <http://www.ana.gov.br/gefap/>
