



WWF

FRESHWATER

CASE STUDY

2017



## WWF-Brazil / WWF Freshwater Practice

# BRAZIL'S PANTANAL: FROM PILOT TO PACT

*How we scaled-up a pilot to bring about improved watershed management across the headwaters of the Pantanal wetland*

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Map of the Pantanal wetland floodplain (blue) and the Paraguay river basin (green)

### Introduction

This work is focused on the Pantanal, the world's largest wetland, right in the middle of South America. It is a unique ecosystem: seasonal rains create an annual flood pulse which inundates 80% of the Pantanal during the wet season. This natural flood pulse is fundamental to maintaining the habitats and species of the wetland ecosystem. The Pantanal and headwaters that feed it provide ecosystem services for around 8 million people who live in the wider Paraguay river basin.

Although vast, the Pantanal's hydrological regime is under threat from human activities, particularly those in the headwaters. These headwater springs and rivers run through urban and rural communities as well as large areas of farmland. The headwaters are pressured by: many small dams that interrupt the natural seasonal flood pulse; deforestation for expanding agriculture (particularly soy, sugar cane and cattle farming) which also lead to increased use of pesticides, soil erosion and sedimentation; and poor domestic sanitation facilities that cause direct river pollution. Climate change exacerbates all of these threats and pressures.

**Pantanal facts:**

The world's largest wetland: in the middle of the South American continent.

Estimated at 68,000 square miles – the size of Belgium, Switzerland, Portugal and Holland combined.

Home to 1.2 million people

Crosses the borders of Brazil, Bolivia & Paraguay - 80% lies in Brazil.

98% is privately owned – ranching and agriculture.

Less than 5% is fully protected.

The Pantanal floods with the rains every year - about 80% is underwater during the rainy season.

WWF has been working in the Pantanal headwaters since 2009. Our work started with a pilot project to demonstrate how restoration of natural springs through community replanting can revive a previously dried up water source (spring).

This case study describes how this pilot became a stepping stone to bigger thinking that initiated a brave, rather risky, scale-up strategy to ensure protection of a large area of the Paraguay River's headwaters.

**What did we want to achieve?**

Our overall ambition is to preserve the hydrological regime of three major tributaries in the upper Paraguay Basin; the Cabaçal, Sepotuba and Jauru rivers. They account for 30% of the water that feeds the Pantanal. We believe the only way this can be achieved is through securing **cross-sectoral commitment** to conservation measures.

Our theory of change rests on the assumption that a united commitment will result in the restoration of degraded riparian forest and conservation of springs and tributaries in the upper Paraguay river basin, improving water quality and quantity of the downstream Pantanal by 2025.

Central to this strategy was securing municipal and state government commitment via a **political pact**, to not only undertake conservation measures to preserve these tributaries, but also to take ownership and responsibility of the initiative.

**What did we do?****THE PILOT**

The restoration pilot site was on the Cabaçal tributary in the upper Paraguay river basin, a region affected by deforestation and ensuing agriculture and cattle practices. This has led to heavy erosion around the springs that feed the upper Paraguay River, changing the natural flow regime and causing many springs to dry up completely.

In Reserva do Cabaçal, WWF brought together the local mayor, community members, schools and universities to undertake the challenge of restoring the springs. This involved a lot of people and resources, commitment and manual work to terrace land, protect exposed banks with nets and plant trees and plants.

In four years (2010-2014) we saw the following results:

- 12 springs and a huge area of erosion restored
- A seedling nursery set up in Cabaçal city
- 6 rural assistants trained in advanced soil management
- 20 eco-friendly jobs created

### Reserva do Cabaçal restoration



The full impact of this work will take a number of years to come to fruition, but over a relatively short period of time we saw an amazing transformation of the landscape. It demonstrated that practical action can achieve tangible results, returning the springs to their former glory.

However, the pilot presented a number of challenges:

- **Resource heavy:** financial, people, expertise, time needed.
- **Small scale:** only possible in a very small area - one eroded crater restored and a handful of springs. There are thousands more areas like this that need to be restored if we are really to have impact.
- **Long term commitment required:** not just for planting but also to help the plants thrive – think about the effort required to maintain even a small garden!
- **Labour intensive** for all involved – WWF and the local partners.

On the plus side, the pilot was a truly collaborative approach between WWF and local communities. Expectations and objectives were shared and it clearly demonstrated that local communities in this region are willing and committed to work on conservation with WWF.

#### BEYOND THE PILOT: HOW DO WE HAVE BIGGER IMPACT WITH LESS MONEY?

2012 saw a transition to the next phase of the programme, with reduced funding. The pilot demonstrated that restoration work can bring back functioning springs, with the commitment of local partners and communities, but clearly it was not a viably replicable solution for WWF across the whole Paraguay river basin.

This dilemma raised the following questions:

- Where should we focus our efforts?
- What strategies should we employ for greater impact?
- What resources do we have to undertake work at scale?
- How do we get buy-in to implement conservation elsewhere in the region?

#### VULNERABILITY ASSESSMENT

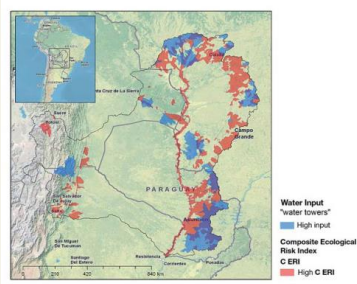
To begin to answer these questions WWF, TNC and other partners undertook an ecological risk assessment and a hydrological analysis for the Paraguay river basin to identify the areas facing the greatest ecological risk and the areas contributing the most significant flow to the Pantanal wetland – i.e. the most important areas of the basin to protect (see pull-out box on the next page).

## Ecological Risk Assessment

The aim of the ecological risk assessment and hydrological analysis for the Paraguay river basin was to identify the most vulnerable areas in the basin and therefore priority areas for protection.

The risk analysis highlighted areas where stress factors such as population, infrastructure, agriculture and livestock were high.

The hydrological analysis identified the upstream areas that contribute the most flow to the Pantanal wetland downstream.



Isolating the areas where high hydrological inputs (dark blues) overlap with areas of high ecological risk (dark browns) identifies the most vulnerable areas. These were shown to be in the southeast of the basin (Paraguay's territory) and the north (upper Paraguay river basin, in Brazil).

The analysis showed that the pilot in the Reserva do Cabaçal was in the right location; the Paraguay River and its tributaries, Cabaçal, Sepotuba and Jauru, provide 30% of the water that feeds the Pantanal wetlands, contributing significantly to the flood pulse and ecosystem function in the wetlands. However, these areas also face high ecological risk, due to deforestation, destructive farming practices and poor sanitation.

The vulnerability assessment demonstrated and reinforced the need to dramatically magnify our work across the headwaters of the Paraguay river basin, above and beyond just doing a handful of restoration projects. We needed to **think big**.

The analysis pointed towards a need for better water governance, specifically for enforcement of existing legal requirements such as the Forest Code, which addresses illegal deforestation. We were no longer just concerned about buy-in from one small group of partners; we had to involve everyone from local governments to private sector and civil society, across all municipalities where these critical springs originated and rivers flowed. All indicators pointed to the realms of **policy and advocacy** to reach across such a vast region.

### THE PANTANAL PACT IS BORN

We developed an ambitious and somewhat risky strategy centred on policy and advocacy. To be successful it required a significant shift in mind-set and perception across the region.

**The change we needed to make:** Construct a culture where public policies targeting Pantanal preservation are allied to social-economic development of the headwaters region.

**Programme vision:** Positive engagement and mobilisation of key political stakeholders and civil society results in municipal and state governments committing to undertake conservation measures to preserve the hydrological regime of three major tributaries: the Cabaçal, Sepotuba and Jauru.

The political pact, which became known as the *Pantanal Pact*, is a framework designed to create local ownership and lasting commitment to taking action to protect the freshwater resources in the region. It includes commitments like the restoration of degraded forest around springs and tributaries.

Making the pact a reality involved:

- **Raising awareness** about water issues and convincing political leaders, businesses and Civil Society Organisations (CSOs) that protection of their water resource is essential. The main challenge is that each group has their own priorities and agendas which are not necessarily aligned.
- **Securing buy-in and long term commitment** from these groups. This involves developing the

### Inspiration for the Pantanal Pact

Although a risky strategy, Brazil has two previous experiences which inspired the Pantanal Pact:

1. **Pacto das Águas (Water Deal)**; in 2009 the São Paulo Environment Secretariat launched a programme to encourage the state's 645 municipalities to make commitments and set goals for improved water management. There were 21 goals divided into three themes including sanitation, headwaters and springs protection.
2. **Pacto das Águas do Ceará**; Ceará is a semi-arid state in the north east of Brazil with unequal water distribution. In 2007, through participatory processes a pact was developed. It aimed to build a shared understanding of the water challenges in the state, identify solutions and secure commitments from all members of society to address the priorities and reverse the poor water resource scenario to guarantee freshwater in quality and quantity; cumulating in the involvement of the state government and public policy.

enabling conditions (raising awareness, demonstrating tangible benefits, advocacy, etc.) to support the eventual signing of the pact and beyond that ensuring delivery of conservation commitments.

- **Identifying and engaging local champions** as early as possible. During the initial stages two stakeholders were key local, influential organisations that helped take on the ownership of the pact and drive forward its agenda. These were the Inter-municipal Consortium for Economic, Social, Environmental and Tourism Development of the Pantanal Headwaters Complex (incorporating 14 municipalities), and the Sepotuba Water Basin Committee (incorporating 11 municipalities). Their buy-in helped foster credibility for the pact and encourage engagement from other local NGOs, CSOs and scientific institutions. The increased buy-in also supported outreach to national institutions such as the National Water Agency (ANA).

Establishing local ownership of conservation efforts is critical to ensure implementation of activities and ultimately guarantee that protection efforts are self-sustaining in the long term.

Large scale conservation successes were not expected in the timescale of this project (2012-2017). However, it was envisaged that some (greener) mayors would sign the pact earlier than others, enabling some restoration efforts to begin during the project timeframe. The disparity between the 25 municipalities was also acknowledged and therefore it was expected that those with more resources and capacity would assume more ambitious actions.

### Pantanal Pact Targets

A pact between 25 municipalities

747 km of rivers' water quality guaranteed

30 springs & 5km of riparian forest preserved

270,000 people engaged and mobilised through a communications campaign

At least 10 key institutions establish a coordination group

5 rural unions formally engaged in and supporting the pact

### CHALLENGES AND RISKS

As with many strategies based on advocacy, the pact approach was hugely ambitious and risky. The key challenges and risks were:

**Financial:** Limited funding, but striving for greater impact. The aim was to view the funds as seed money to leverage more resources.

Chapada dos Guimarães – part of the headwater landscape in Mato Grosso



© Chico Ferreira, WWF-BR

Paraguay River, Cáceres – one of the 25 municipalities we work with.



© Karina Berg, WWF-UK

**Scale:** Targeting 25 municipalities (out of a total of 142) in Mato Grosso state – Brazil's third largest, representing 10.6% of Brazil's territory. These 25 municipalities are home to the headwaters of the Paraguay River. Due to the sheer size of the region, urban areas and other communities here are remote and dispersed.

**Technical:** Information on the status of land degradation and water quality was sparse. Generating this information is important for strong advocacy but is also expensive.

**Social-cultural-political landscape:** Lack of conservation culture, development focused, resistant to change. The context of Mato Grosso state reinforces the challenge we were up against – getting people on side would be difficult.

**Stakeholder relationships:** Despite the positive experience with the Cabaçal pilot there were no strong relationships with the majority of stakeholders in the region, especially the local governments and agribusinesses - the most important sector, which not only holds significant political power, but can also be sceptical of environmental NGOs and resistant to change.

**Capacity:** There was just one person in the WWF-Brazil office dedicated to policy and advocacy work.

#### OPPORTUNITIES

**Local champions:** Within the 25 municipalities there were already two large consortiums whose leaders were locally credible and aligned to the vision. WWF's support was welcomed to support their own agendas as well as incorporating a wider outreach.

**Prioritisation:** Brazil's National Water Agency (ANA) is developing an integrated management plan for the whole of the Paraguay river basin and the upper Paraguay river basin is one of four regions to be prioritised within it. They are also focused on the Mato Grosso State Water Resources Plan.

**Seapotuba River Basin Committee:** The state of Mato Grosso has in total just six river basin committees. The Seapotuba Committee is one of these and spans 11 of the 25 municipalities we are working with. It was established in 2010.

#### What have we achieved so far?

The vulnerability assessment and the pilot springs restoration project launched the development of the Pantanal Pact. As this phase progressed, a number of milestones were reached:

**Diagnosis:** through technical studies (the ecological risk & hydrological analyses) and social and economic analyses of the municipalities, we were able to build a robust understanding of the region. These analyses allowed us to identify where the most vulnerable areas of the Paraguay River headwaters are

located and where best to direct conservation efforts, as well as building a picture of the water related issues from a more social and economic context. These details have been fundamental in presenting the reality to the different sectors in the region and fostering understanding of the direct impacts on their lives and livelihoods. Specific studies included:

- Social economic assessment of the 25 municipalities
- Sanitation assessment
- Deforestation and vegetation cover of the 25 municipalities
- Water quality assessment
- Public perceptions survey of the Pantanal

With all the analyses we were able to develop three possible scenarios for solutions in the region:

1. No collaboration
2. Collaboration
3. Command and control

After many workshops and discussions with the stakeholders there was consensus agreement that scenario 2 was preferable to address the challenges they faced.

**Mobilisation of politicians and institutions:** we initiated a motion calling for the construction of the pact. This was approved at the National River Basin Committees meeting in November 2012, with the presence of over 1,700 people and representatives of 130 river basins from all over Brazil. This was followed by a series of seminars in the headwaters region to discuss how to develop the pact. Altogether 260 people, 72 institutions and 25 municipal authorities were mobilised.

**Empowerment of local actors:** throughout the region we convened over 35 stakeholder meetings, workshops and other fora involving basin committees, local consortiums, local government and business representatives, and CSOs with the purpose of increasing awareness, generating momentum, fostering cross-sector dialogue and ultimately empowering stakeholders to engage in decision making.

**Public communications campaign:** we have been innovative and opportunistic with our communications. We utilised many different vehicles to disseminate our messages around the Pantanal Pact, simultaneously maximising the backdrop of Brazil's water crisis to strengthen our messaging about the importance of water resources. Through local, national and international communications we successfully raised awareness about the significance of the Pantanal.

## Communications



*“Chico Bento is the new ambassador of the Pantanal springs protection.”*



Partnerships for outreach are equally as important as partnerships with stakeholders.



Nico & Lau sporting Pantanal Pact logo t-shirts and sharing the pact website.

**State government buy-in:** following the October 2014 elections, it took four months to secure a meeting with the new State Secretary of the Environment. We presented the Pantanal Pact and she immediately understood its value and worth, from an economic, environmental and social perspective. She instigated its dissemination throughout the rest of the state secretariats, along with the State Governor which led to their endorsement of the Pantanal Pact initiative.

## RESULTS

**72 organisations** signed an initial expression of interest to the Pantanal Pact initiative within the first nine months.

Through WWF’s facilitation, a coordination group of **49 institutions** including an even spread of representatives from local governments, civil society and local businesses was established. This group was central to driving forward the development of the pact, including defining its written commitments from the shared regional priorities.

**34 shared priorities** were consensually identified and agreed on by the participating organisations. They are categorised under seven different themes:

1. Sustainable development
2. Environmental compliance and recovery of degraded areas
3. Rural and state roads
4. Sanitation & waste management
5. Water resources management
6. Strengthening environmental licensing and management
7. Strengthening the pact

Public campaign and outreach targets were exceeded by over **50% within 18 months** and in five years we reached **over twelve million people** through the communications campaign, using numerous different vehicles locally, nationally and internationally. We engaged Brazil’s most famous cartoon character, Chico Bento, and local Mato Grosso celebrities Nico & Lau which contributed significantly to the public outreach and dissemination of communications around the Pantanal Pact.

**Three digital channels were established** dedicated to the Pantanal Pact and its communications; [Pact website](#), [Pact Facebook page](#); and [Pact instagram](#)

**Leveraged funding** allowed the implementation of some **practical actions** to demonstrate the benefits the pact would bring to local actors:



**ANA's national Water Producer Programme:** Two municipalities, Tangará da Serra & Mirassol D'Oeste, were formally accepted by ANA to establish their own payment for ecosystem services (PES) programmes under the national framework. These programmes contribute to the restoration of springs and 150 small local agri-businesses engaged in improved farming practices. Crucially, these programmes demonstrate a tangible example of how the pact benefits the rural sector (financially) and decision makers (politically), thereby strengthening the argument for the pact.

**PES law:** Their acceptance in ANA's Water Producer programme led Tangará da Serra municipality to approve a municipal law for PES on 17 April 2014.

**Eco-friendly sanitation:** extra funds through HSBC Brasil provided the opportunity to implement 40 biofossas (eco-friendly sanitation facilities) in the Paraguay River headwaters. The low rate of sewerage treatment and poor sanitation in the region is a big issue for mayors and constituents alike. Offering these sorts of solutions not only contributes to improved water quality and health, but also facilitates the engagement and mobilisation of mayors under the pact.

After three years of cross-sectoral, participatory dialogue and demonstrative, tangible projects we were able to consolidate trust across the different stakeholders in the region and secure buy-in from Mato Grosso's state government. By September 2015, this resulted in **25 mayors signing the Pantanal Pact**. Twenty of these led the way, committing at a public event organised by the state government, launching Mato Grosso's Environment Week on the 8<sup>th</sup> June. By the end of the five years, despite local elections in October 2016 that brought about a change in 17 of the 25 local mayors we secured signatures from all 25 mayors and 23 other organisations from local CSOs, state government to local businesses, totally 48 signatories to date.

**82 springs under active restoration** across 16 of the 25 municipalities. We exceeded our original target of 30 by over 170%.

Cuiabá River in the Pantanal



© Karina Berg, WWF-UK

## Where next?

The signing of the pact was a significant milestone and although it brought us closer to achieving our programmatic objectives, it really only marked the start of the work: practical action. From this point forward WWF, together with the Mato Grosso State Government and the Pantanal Pact Coordination Group must maintain the momentum that the initiative has gained. We must ensure that the pact is delivered, turning the priorities that were committed to by the signatories into implemented conservation activities and action.

Understanding exactly which of the 34 priorities have been ‘adopted’ by the signatories and which have yet to be taken up is vital. With this knowledge we can analyse what resources are needed, both human and financial, to ensure the delivery of all the commitments as well as develop a plan to address those priorities that have yet to be ‘adopted’. We must ensure that rural unions sign the pact, as their buy-in is essential for its success in the region. The continuing communications outreach is fundamental to maintain the strength of the dissemination and build the local commitment throughout a wider audience.

Equally important is the full implementation of the two PES schemes and ensuring they are well established in their respective municipalities, with sustainable mechanisms in place. Once fully functional they offer another means to demonstrate the tangible benefits the pact brings to the rural producers. Critically we need to help consolidate the partnerships, clarify the mechanism of the payment scheme, and agree which organisations will offer what resources, to then secure interest and participation from the producers.

Understanding potential opportunities and maximising them in the region continues to be fundamental in the process. We have to keep thinking big to ensure we reach the desired large scale transformational outcomes, which include the restoration of deforested and degraded areas. A study by the Centre for Environmental Research in the north east highlights the most degraded and priority areas to tackle, as well as the opportunities that exist, for example operational plant nurseries, that can contribute to the restoration needs in the region.

Working closely with ANA and the National Transport Infrastructure Department we are exploring the possibility of securing an offsetting commitment in the 25 municipalities under the Pantanal Pact. The national road building organisation is obligated to make restoration offsets so the hope is that we can influence and steer the delivery of that obligation throughout the 25 municipalities we have been working in.

## Resources

[Risk Analysis of Upper Paraguay river basin](#)

[Pacto das Aguas, São Paulo](#)

[Good Water Governance Indicators](#)

The [Telegraph](#) article: The activists fighting to preserve Brazil's pristine wetlands

[Five video stories from the region](#)

[Nico & Lau](#) video

[Chico Bento](#) video



## What helped ensure our success?

**Thinking outside the box:** From the outset the enormity of the region combined with a decrease in available funding forced us to change our approach. The work in Reserva do Cabaçal was never intended as a pilot for a bigger programme of work, but that's what it turned out to be; a demonstration of what can be done through collaborative effort.

**Being prepared to embrace riskier strategies and solutions** in order to really achieve transformational change.

**Seeking out different vehicles and solutions to enable a pilot to 'fly'.** The pilot in Cabaçal and the scaled up Pantanal Pact took distinct approaches. These divergent strategies demonstrate that scaling up does not always have to be an exact replica of the original pilot many times over. Sometimes a total re-think of how best to approach the challenges being faced might present a completely different solution.

**Understanding that within an advocacy approach practical, tangible, demonstrative actions are still fundamental to win the trust of local/regional institutions.** They need help understanding what sort of benefits to expect under an abstract concept like a pact. Even though our focus was on securing commitment to the Pantanal Pact across 25 municipalities, it has been critical to clarify what this actually means to the different groups and demonstrate how it might work in practice, for example, through the establishment of PES schemes, or the implementation of bio-friendly septic tanks to improve sanitation.

## The hard lesson

Evidence about issues alone is not sufficient to make change; what matters is whether we can see the world from other points of view and influence them to change. Gaining buy-in from a wide range of local actors has been central to the positive progress of the Pantanal Pact, captured nicely by this quote:

*“Conservation professionals engage with policy makers, business people, local communities, government agencies and religious leaders. All these parties present interpersonal challenges that could potentially undermine conservation success. It is not just enough to have empirical evidence... Neither is it enough to have published extensively on [a] subject. What matters is how the conservation leader can transcend [their] own worldview and see from the worldview of the other party.”*

(Cambridge Conservation Forum, 18 July 2014): *The End of Knowledge Accumulation: Why Conservation Leadership Needs Wisdom Education*, by Stephen Awoyemi, Conservation Leadership Programme (MPhil)

## Pantanal Pact Timeline

WWF has been working since 2012 to establish a pact as a means to secure formal commitment from 25 mayors in Mato Grosso to protect their springs and rivers.

### January 2010

Work began on the restoration of the Voçoroca da Parede in the Reserva do Cabaçal; a collaboration between WWF-Brazil, the mayor, local government, communities and institutions.

### 2012

Ecological Risk Assessment is undertaken by WWF, TNC and local partners.

### November 2012

A motion to protect the Pantanal headwaters was approved by a unanimous decision of 166 river basin committees at the National Basin Committees Forum in Cuiabá, Mato Grosso.

### April 2013

A workshop to kick-start the Pantanal Pact initiative took place in Cáceres, bringing together 90 participants from 34 institutions. This was enabled by 17 meetings with different groups over the previous two months.

### October - December 2013

72 organisations formalised their support for the Pantanal Pact by signing an initial interest statement to the pact. This was a result of many workshops, seminars and meetings throughout the region.

### March & April 2014

Chico Bento cartoon supports the Pantanal Pact development.

The Water Crisis in SE Brazil becomes critical.

### April - June 2014

The diagnostic for the pact was concluded, disseminated and discussed throughout the 25 municipalities.

34 key priorities were identified and agreed.

### November 2014

Mirassol D'Oeste & Tangará da Serra are accepted to participate in the Brazil National Water Agency's (ANA) Water Producers Programme (PES scheme); securing approx. USD \$170,000 (R\$700,000) contribution from ANA to each municipality.

### February 2015

First meeting with Mato Grosso's Secretary of the Environment to present the Pantanal Pact initiative.

### April 2015

Mayor of Barra do Bugres is the first signatory to the pact

### June 2015

19 mayors, MT state governor & six other organisations sign the pact!

### June 2015

Brazil, Bolivia and Paraguay government officials sign a commitment to the conservation and sustainable development of the Pantanal

## FOR MORE INFORMATION

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