

Site Consolidation Case Study: Guaraqueçaba Environmental Protection Area, Brazil

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Background

Guaraqueçaba Environmental Protection Area is a 313,234-hectare tract of the best-preserved continuous Atlantic Forest in Brazil. Guaraqueçaba contains a diverse range of habitats, including: mangroves, coastal Restinga woodlands, moist lowland forests and marshes, and moist submontane, montane and upper montane forests. The diverse habitats in Guaraqueçaba harbor and promote immense biodiversity. Inside Guaraqueçaba, there is a national park (Superagui), a federal ecological station, and several private nature reserves (e.g., Salto Morato Nature Reserve, Serra do Itaqui Nature Reserve, and reserves more recently acquired by Sociedade de Pesquisa em Vida Selvagem e Educação Ambiental (SPVS)). Conservation efforts are directed at endangered flora and fauna. Endangered fauna species include the red-tailed parrot, yellow-throated caiman, tapir, jaguar, and the black-faced lion tamarin. Endangered plant species include the palm *Euterpe edulis*, a keystone forest species whose populations are decreasing due to over-harvesting.

There are five primary threats to the biodiversity of Guaraqueçaba. The threats are buffalo ranching (causing deforestation, soil compaction, erosion, and the introduction of alien invasive grasses), the use of the protected area for agricultural purposes (resulting in deforestation, the introduction of pesticides and the introduction of alien invasive species), tourism (encouraging urban expansion and illegal second homes), subsistence estuarine fishing (resulting in the reduction of the native fish and crab species), and commercial fishing (reducing the native fish species critical for maintaining biodiversity).

The Guaraqueçaba Environmental Protection Area is a conservation unit that regulates the direct use of the natural resources for economic gain, in an attempt to guarantee low impacts to the environment. The extraction of natural resources, fishing, grazing, and developing agriculture are the principal income source for the local communities. Deforestation and animal trafficking continue to have an impact. Specific legislation restricting land use in the environmental protection area is still being implemented, thus the existing threats are not curtailed. Approximately fifty-five communities (5,776 people) live in the core zone of the Guaraqueçaba. Approximately 28,415 people live in nearby communities and 146,351 people in nearby cities. The communities use Guaraqueçaba's land and natural resources to engage in permitted activities, such as fishing, collecting crabs, expanding ecotourism, making preserves, and developing organic agriculture.

SPVS' strategic engagement of government agencies, made possible by the Parks in Peril Program (PiP) and other complementary projects, has resulted in state and federal representatives consulting SPVS for technical support and input on decisions affecting Guaraqueçaba. At the

request of the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), SPVS has worked on defining land-use regulations for economic activities in the environmental protection area. SPVS has also provided assistance to government agencies on options for countering the illegal construction of second homes on the islands around Superagui National Park, as well as forest invasion and conversion by ranchers on the mainland.

The PiP Program, together with other SPVS projects in the area, has enabled SPVS to train guards and establish a solid partnership with governmental institutions responsible for overseeing the site. In 1998, SPVS was the catalyst for the formation of an interagency coordination body called Integrated Group for Environmental Management (GIGA), which the IBAMA adopted as a permanent forum for environmental matters.

The PiP Program provided funding that helped launch the first climate-action project in the Atlantic Forest. The project enabled SPVS to create a 7,000-hectare private reserve in the middle of Guaraqueçaba and to hire guards and project staff. A second private reserve, that will total approximately 12,000 hectares, is underway. A total of \$1,184,918 in complementary funding has also been invested in Guaraqueçaba.

Overview of Parks in Peril (PiP) Program

Guaraqueçaba received PiP Program funding from 1998 to 2002. The PiP Program established goals for Guaraqueçaba involving protection, long-term management, long-term financing, and site constituency.

First, with regard to protection of Guaraqueçaba, the program's goals were threefold. The PiP Program sought to create a comprehensive information system to improve management of the protection program, to develop and implement strategies for improving enforcement of regulations and protection of natural resources, and to eventually eliminate illegal hunting and smuggling of the critically endangered red-tailed parrot.

Second, the PiP Program established two initial goals for long-term management of Guaraqueçaba. The program desired to establish a learning and demonstration research center at SPVS's Morro da Mina Reserve (ultimately this goal was postponed, given the government's construction of a forestry police station just down the road from Morro da Mina) and to work with SPVS staff to expand their participation in the public policy arena.

Third, the PiP Program endeavored to ensure the long-term financial security of SPVS and the successful implementation of the Guaraqueçaba Protection Program by providing technical, administrative, and financial assistance. Finally, the PiP Program attempted to strengthen the relationship with the site constituency by implementing a strategy for environmental education that builds support for protecting Guaraqueçaba and implementing sustainable development initiatives to promote alternative means of income generation.

As an Environmental Protection Area, Guaraqueçaba primarily consists of private lands. One external factor affecting the implementation of the PiP Program at Guaraqueçaba involved the land negotiations with the federal land agency (Departamento de Patrimônio da União, DPU) and

the installation of infrastructure such as visitors centers and guard posts. Although by September 2002, an initial agreement regarding land use was established, negotiations and implementation continue.

Site Consolidation Scorecard Application

A technical team in SPVS allocated the site scores based on their practical experiences at Guaraqueçaba over the years. The PiP Program was a continuation of the team's work at Guaraqueçaba, which has been ongoing since 1991. SPVS established parameters based on the team's experience in the region. The scores were based on team perceptions, with a consensus being required. The SPVS team included: the SPVS director, the PiP coordinator, and the SPVS technical coordinators of each component. Scores were calculated annually.

SPVS' integrated annual work plan (*plan operativo*) for the entire institution encouraged the coordination between SPVS' technical and administrative staff across programs.

Significant Results of the PiP Program

Protection

With regard to the first goal of protecting Guaraqueçaba and its natural resources, the PiP Program achieved several direct results. In Guaraqueçaba, SPVS worked with the Pro-Atlantic Program to plan the placement of eight new guard posts, negotiated an initial agreement with the federal land agency (DPU) for the cession of land to IBAMA for park facilities at Superagüi National Park, and held training workshops for the guards and inspectors of the Forestry Police. At the workshops, the training addressed use of global positioning systems (GPS), use of geographic information systems (GIS), endangered wildlife species, animal trafficking, and broader conservation issues.

From the perspective of SPVS, PiP funding, over a relatively short period of time, allowed for the achievement of significant results across the large Guaraqueçaba Environmental Protection Area. One important result is that the PiP Program helped to strengthen SPVS' work in the region. Nonetheless, biodiversity conservation in Guaraqueçaba, a large and complex area, is a slow evolution that requires a change of thinking amongst the communities and the research institutions that work in the region. Projects need to last from ten to thirty years to create lasting change and produce results.

One sustainable impact from the PiP Program was the newly developed cooperation between IBAMA and SPVS toward the common goal of protecting Guaraqueçaba. The director of the Guaraqueçaba Environmental Protection Area frequently consulted with SPVS and asked SPVS for assistance. Cooperative work, over the course of a long period of time, is a sustainable impact that could lead to positive results.

Long-term Management

With regard to the second goal of establishing long-term management of Guaraqueçaba , the PiP Program made progress with zoning and regulating illegal use of the land. The most notable direct result began with the state agency for social and economic development (IPARDES) making a formal landscape zoning proposal. The state agency's formal proposal enabled SPVS and IBAMA to use the state zoning proposal as a basic reference and work toward zoning regulations for Guaraqueçaba . A second direct result of the PiP Program was the prosecution of an illegal second-home owner. The court ordered the demolition of the illegal house at Ilha das Peças. Although a limited result, the prosecution resulting in demolition of the illegal house was an unprecedented event that creates jurisprudence for dealing with the issue in the future. A third direct result of the PiP Program was formal training for employees of the government agency managing Guaraqueçaba . The official government agency responsible for Guaraqueçaba's administration, IBAMA, received training resulting in the agency having better technical orientation and better technical management skills. The agency's improved skills will continue to enhance the long-term management of Guaraqueçaba .

Training and institutional support are key at Guaraqueçaba because both will produce long-term results. One factor which may limit sustainable results has to do with the lack of a sustainable development plan for Guaraqueçaba. SPVS drafted a sustainable development plan in 1991; however, the initiative was not adopted by government officials.

Long-term Financing

With regard to the third goal of establishing long-term financial security for SPVS and the successful protection of Guaraqueçaba , the PiP Program made extraordinary progress. First, the project entitled "Conservation and Protection of Biodiversity in the State of Parana" was approved for funding by the state government and the Global Environmental Facility (GEF). Funds for the first phase will cover areas on the Parana plains and shall be made available by the beginning of 2003 (8 million U.S. dollars). Although Guaraqueçaba may not receive funds in the first phase, the project represents progress. This is the first large project at the state level focused on biodiversity. Second, PiP instituted a SPVS self-sufficiency plan which helps to gather funds and ensure SPVS' financial security. The Avina Foundation provided institutional support and funding for the three-year project. Likewise, the project allowed SPVS to sign partnerships with five different enterprises who contributed services, advertising and materials to strengthen the institutional image of SPVS. Materials such as an atlas for Guaraqueçaba and a portfolio for SPVS have been produced and distributed at local schools and businesses in a fundraising effort. Finally, the PiP project led to the establishment of three carbon-sequestration projects in and bordering the Environmental Protection Area; in addition to creating 20,000 hectares of new private reserves, the three projects established permanent management endowments that will pay for the presence of SPVS park guards and community outreach staff inside Guaraqueçaba in perpetuity. All told the three projects brought \$18.4 million in investment to the PiP project area.

Site Constituency

With regard to the fourth goal of strengthening the relationship with the site constituency, the PiP Program achieved moderate success. First, PiP funding was crucial for the development of biological sewage treatment models that were built on Ilha Rasa. The sewage treatment system at Ilha Rasa is now operating and can now be replicated throughout the Guaraqueçaba

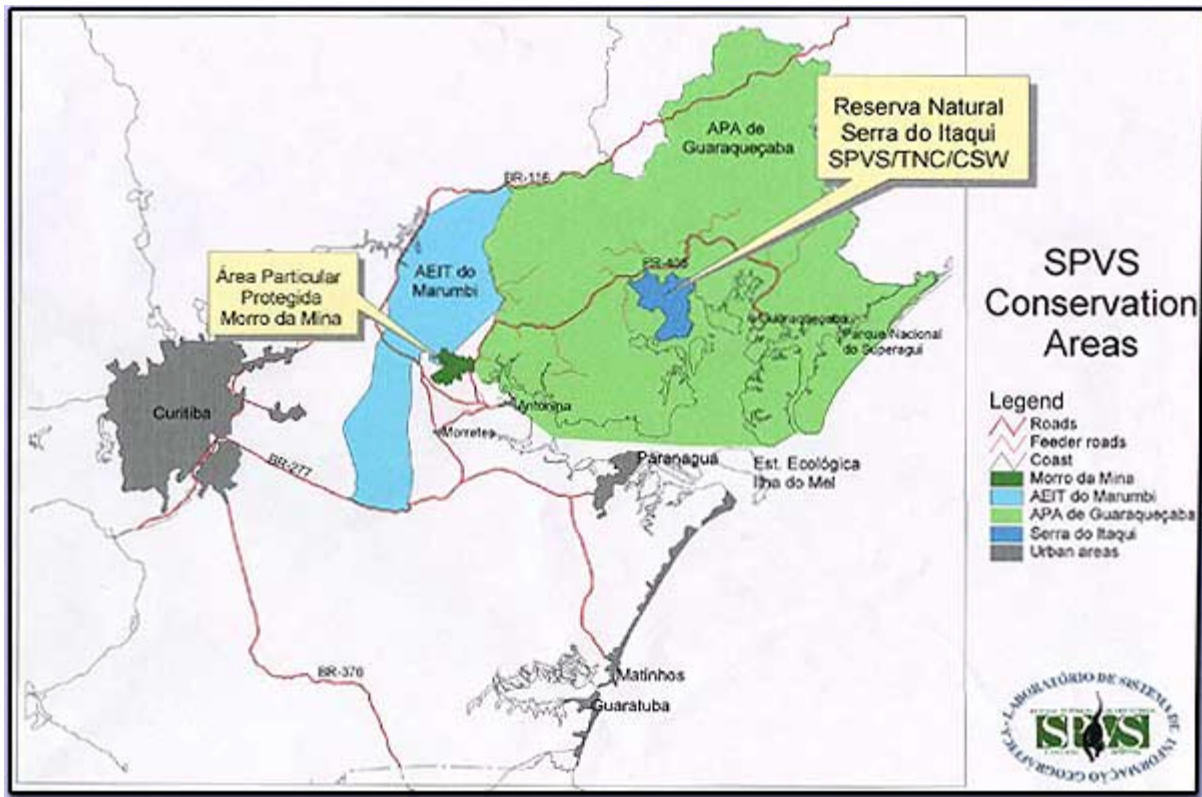
Environmental Protection Area. Fifteen new sewage treatment systems are planned to be installed during the new fiscal year. Second, the environmental education program designed for Guaraqueçaba allowed 70 percent of the teachers in the Environmental Protection Area to receive training. The program was so successful that funds were donated to SPVS to replicate the program in Paranaguá (where 100 teachers have already been trained and another 645 will be trained) and Antonina (where 50 teachers will be trained). In addition to training teachers, educational programs reached more than 500 children and taught the children about the red-tailed parrot. A private reserve designed for ecotourism and environmental education was also established in 2000 by a local fisherman from Guaraqueçaba in partnership with an Italian technician in agriculture.

Another direct result from the PiP program was the creation of GIGA to work with organizations within the State government. GIGA is now an official entity within the National System of Conservation Areas. Furthermore, a new law was created three years ago to create management councils that participate in the conservation of the Environmental Protection Areas. (Interview Clóvis Borges).

Lessons Learned and Recommendations

Several lessons were learned through the use of the scorecard at the Guaraqueçaba Environmental Protection Area. The scorecard was a tool for the PiP project and was used to present the work plan. The Scorecard in itself was useful. However, Guaraqueçaba is an area for environmental protection (APA), not a single park. It is composed of a series of protection areas with different protection categories and includes areas where people live and work. Thus, many times the Scorecard was difficult to use at Guaraqueçaba because it was designed for one specific conservation site, such as a park. In Brazil, it would be better to have a Scorecard for each of the parks and another for the entire region. The regional Scorecard could be modified to address the broader goals of the area.

There are several results and impacts achieved at Guaraqueçaba that could be leveraged to other sites and systems. One initial observation by the participants at Guaraqueçaba was that after three years as part of the PiP Program it was difficult to quantify results. While the three years in the PiP Program were beneficial to the Environmental Protection Area, a ten year period would allow more time to develop and measure long-term, sustainable impacts. Second, the PiP Program facilitates the development of additional conservation projects. At Guaraqueçaba, the PiP Program complemented the efforts of the ProBio initiative. A coordinated effort between PiP and existing technical and financial resources allows for more substantial results. Finally, PiP is a relatively high-profile program that draws attention to the participating sites. The increased level of publicity has the potential to raise awareness of environmental concerns at the sites and attract additional financial resources to the sites. At Guaraqueçaba, the participation in the PiP Program allowed the site to attract additional long-term funding for conservation projects.



The Parks in Peril (PiP) Program began in 1990 as an emergency effort to safeguard the most imperiled natural ecosystems, ecological communities and species in the Latin American and Caribbean region. With U.S. Agency for International Development (USAID) funding administered by The Nature Conservancy (TNC), PiP has worked through 30 non-governmental partner organizations to shepherd a collaborative effort with government agencies and stakeholders to consolidate the technical, human and financial resources necessary to sustain conservation of these sites into the future. By 2002, PiP had fostered protection, management, financing, and local support of 37 protected areas in 15 countries, covering 11.4 million hectares.

To substantiate and illustrate lessons learned and recommendations about the progress made towards consolidation of PiP sites from 1990 to 2002, ten case studies were developed by TNC staff and partners. This document presents one of these case studies.

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