



▲ Aerial view of the Cristalino River. Credit: FFI

Striking a balance between conservation and development in Cristalino, Gateway to the Amazon

This case study is one of a series developed by Fauna & Flora International (FFI) during the course of an Anglo American funded partnership designed to explore ways to integrate livelihoods and governance issues into conservation initiatives.

The studies profile FFI's and partners' experience and the lessons learnt at three project sites.

All studies are available on www.fauna-flora.org, alongside a summary lessons learnt document.

The state and private protected areas along the Cristalino River in the northern part of Brazil's Mato Grosso state are strategically placed to halt the deforestation threatening the southern Amazon. The area is incredibly rich in biodiversity, falling as it does in the transition zone between the Brazilian cerrado, a tropical woodland-savannah ecosystem, and the Amazon rainforest. But conservation in this region faces many challenges including increasing pressure from the expansion of large scale cattle ranching and soya cultivation. A national government policy commencing in the 1970s led to the expulsion of indigenous peoples and the establishment of farming communities made up of in-migrants from the South of the country. These smallholder farmers were left to try and eke out a livelihood with no knowledge of the Amazonian ecosystem.

In the last 40 years, the natural capital of the area has been rapidly diminished while exploitation by middle men and lack of support from government has constrained smallholder farmers' access to financial or physical assets. Poor accessibility and conflicts over resource exploitation has also depleted human and social capital. Forest soils are quickly exhausted and natural springs degraded once forest cover is removed. As a result, as production costs increase and yields decline, farmers are periodically forced to abandon their landholdings, often selling them at low prices to large-scale cattle farmers. In a cycle of land degradation and poverty, farmers move northwards and new areas of forest are opened up, pushing the so-called 'arc of deforestation' ever further north and closer to established protected areas.



▲ Forest cleared for agriculture in Cristalino State Park buffer zone. Credit: Rob Bensted-Smith/FFI

Integrating conservation, livelihoods and governance

FFI, together with key partners, Fundação Ecológica Cristalino (FEC) and Instituto Ouro Verde (IOV), have chosen to tackle these challenges through a multi-stranded approach. The project aims to help smallholder farmers to manage their land in an ecologically and economically sustainable way; increase the awareness of local stakeholders of the links between biodiversity, ecosystem goods and services, and sustainable livelihoods; and build community capacity to engage in local economic development planning and to have more of a voice in decisions over protected area management. At the activity level, agro-forestry, restoration of springs and better access to local markets are activities designed to enable the first outcome, environmental education the second, and community mobilisation and representation on the protected area consultative council the third.

Project activities were initially concentrated in Carlinda municipality which, while not directly adjacent to the protected areas, is reasonably accessible and politically stable. It was therefore considered the best area in which to trial a model that could be adapted and replicated as appropriate in the less accessible and more politically charged municipality of Novo Mundo in the buffer zone of Cristalino State Park. In the early days of project implementation the approach was to work with a relatively small number of farmers to help develop

on-farm demonstration plots for rehabilitation of water springs and agro-forestry, including the identification of native seed trees, seed storage and propagation.

Key to the model of developing more sustainable agricultural practices was to facilitate access to markets for the resulting produce. Local NGO partner, IOV, took the lead in identifying and mobilising consumers from the nearest sizeable town of Alta Floresta. They identified potential consumers who expressed an interest in buying organic products, originally from the agroforestry on-farm demonstration plots and later on from other households who adopted the organic production methods. IOV also provide technical, logistical and financial support to collect and sell the produce. This included the creation of an online purchase system to help match seasonal availability of fresh produce with demand from consumers. Regular meetings were held with both consumers and producers to agree on prices and monitor quality and satisfaction. Creating a brand and marketing strategy that highlighted the 'green' credentials of the produce was a core element of the approach, although for a local market compliance with strict international organic standards was considered unnecessary.

Support to the development of sustainable agriculture was complemented by environmental education activities with members of both Carlinda and Novo Mundo communities, including immersion trips into the forest to help develop

a stronger connection between these in-migrants and the local natural environment. The endangered white-whiskered spider monkey (*Ateles marginatus*) was chosen as a flagship species for awareness-raising activities. In the buffer zone of Cristalino State Park, efforts were also made to facilitate and strengthen community representation on the protected area consultative council.

As the project progressed a more intensive programme of activities was undertaken in order to engage local community members and other relevant stakeholders in a participatory process of joint analysis, planning, monitoring and evaluation of livelihoods and conservation issues. This approach was based on the UNDP integrated, sustainable local development model which is grounded in the importance of social capital and good governance as the basis for empowerment and equitable development. The comprehensive methodology included analysis of the socio-cultural, economic, environmental, political and institutional context using tools such as SWOT analysis, ranking matrices, focus group discussions, semi-structured interviews and questionnaire surveys. Monitoring and evaluation methods combined community perceptions of change with measurement of on-farm biodiversity and rehabilitation of natural springs. As an integral part of the capacity-building process, community mobilisers, both male and female, were recruited, trained and mentored to help facilitate this exercise and to build leadership, representation and communication skills.

As a result of this participatory diagnosis and planning process, each community developed plans based on their self-identified needs and opportunities. Relevant expertise and technical skills were then mobilised from a number of research and local government agencies to deliver practical training and support the realisation of these plans. As the local political context in the protected area buffer zone improved, this approach was replicated with the more isolated communities

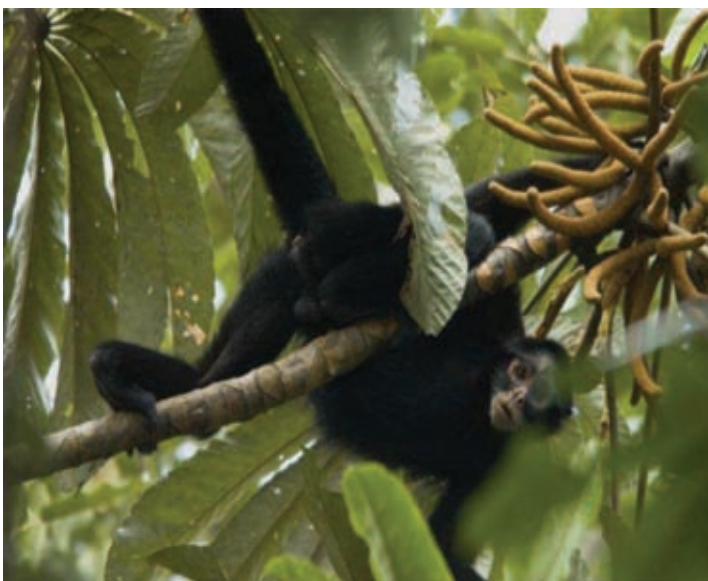
in the Novo Mundo municipality. Peer learning involving cross-visits with farmers from Carlinda was a core strategy for engaging local communities. An emphasis on integrating conservation into local development plans and processes was also a key element, including increasing the understanding of all stakeholders of the importance of biodiversity in the maintenance of ecosystem goods and services.

Outcomes for biodiversity and livelihoods

Perhaps the greatest outcome of this project so far has been the increased capacity of a range of stakeholders to understand the links between biodiversity conservation and sustainable local development. Through a community mobilisation process, local people have both become more engaged with their own development and with the local government actors who can influence the wider issues that affect their lives and livelihoods.

At a very concrete level, a number of priority issues identified through the participatory community self-diagnosis process have started to be addressed. These include biological control of pasture leafhoppers on 76 properties; water spring vegetation restoration on the 19 properties rated by the communities as key for providing water for the whole settlement; native seed collection, storage and propagation; and agro-forestry system development on 1.5ha of land over 12 properties. Pasture rotation management systems were initially developed on 21 demonstration plots with project support. The total area under rotation management has since expanded as farmers have taken up this system of their own accord having seen the positive results from the plots.

In addition, farmers now have access to agriculture extension support due to the deployment of an extension officer from



▲ White-whiskered spider monkey (*Ateles marginatus*). Credit: Evan Bowen-Jones/FFI



▲ Learning about the forest. Credit: FFI/FEC

the local municipality. Diversification and improvement in livelihoods strategies has been made possible through a range of activities including soil analyses for 40 small farms; practical training in cocoa production (56 participants); artificial insemination of livestock on 10 farms; and identification, collection, storage and propagation of native species. A niche market with a price premium for the eco-friendly nature of production has been secured for the resulting produce.

Increased awareness of the importance of conservation and sustainable use has been evidenced in discussions with community members and local government officials and in the voluntary uptake of sustainable agricultural practices beyond the original demonstration farms. In the participatory community action planning processes, people are starting to prioritise issues such as maintenance of standing forest, rehabilitation of water springs and habitat restoration. Previously such activities were considered to be low priority; indeed conservation was seen as a hindrance to local economic development. In a recent survey, 45% of smallholder farmers expressed their interest in restoration of their land to comply with the currently largely ignored law which requires a high percentage tree cover on agricultural land in the Amazon.

Key to the sustainability of the project has been the training and mentoring support provided to partner staff and to local community mobilisers who have demonstrated increased knowledge, confidence, leadership, communication and facilitation skills in their engagement with farmers, communities, local government staff and technical advisers.

At the start of the project, the Cristalino State Park was a 'paper park' with a management entity struggling to manage both the area and relationships with local stakeholders. FFI has played a crucial role in facilitating community engagement with the park management plan development process. Through a consultative council, local communities and other key stakeholders now have a greater voice in the management of the park. With FFI support, the park management body has become more proactive, resulting in the official adoption of a management plan that relates better to the reality of the context in which the park is located.

Climate change foresight planning

Application of FFI's climate foresight planning tool for the Cristalino region identified both the complexity of climate change issues and major knowledge gaps, making decisions over planning for addressing climate risk very difficult. The project therefore commissioned more in-depth research to identify current sources of information and knowledge, together with mapping of key stakeholders relevant to climate change at local, regional and national level. In addition a review was undertaken of current policy - at national and state levels

- on climate change adaptation and mitigation, including Payment for Environmental Services (PES) mechanisms, such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation). The resulting report concluded that while some work has been done in Brazil on assessing the vulnerability of major urban areas to climate change, there is a lack of specific vulnerability assessments for biodiversity and rural livelihoods. The need to develop methodologies and strategies for ecosystem-based adaptation linked with sustainable development was identified, together with the necessity to pay more attention to the links between adaptation and mitigation.

Lessons learnt

A number of important lessons have been learnt from the multi-stranded approach taken to integrating biodiversity conservation, sustainable livelihoods and local governance at the southern Gateway to the Amazon. Firstly, the use of a multi-stakeholder participatory process, in this case based on the UNDP model for integrated, sustainable local development, has been key to developing social capital in a difficult socio-political context. A core element of this process has been FFI's role in bringing different actors together to better understand each others' perspectives, needs and challenges and to engage in dialogue and joint planning.

The project has found that small scale examples of successful change, such as the on-farm demonstration plots for agro-forestry and spring rehabilitation plots, have had a positive effect on the perception and willingness of people to participate in this process. Use of cross-visits between the two main project sites of Carlinda and Novo Mundo has been instrumental in gaining the trust of the latter community through peer-to-peer learning and concrete evidence of the benefits of sustainable agriculture. Equally important has been the linking of farmers to markets for their produce through successful branding and marketing strategies, based on the eco-friendly nature of production, as well as facilitation of direct engagement between producers and local consumers. Efforts to supply local supermarkets however have, to date, been less successful due to issues with quality control of produce and reliability of supply.

Helping both communities and local government actors understand the links between biodiversity conservation, ecosystem goods and services and local economic development has also been fundamental to securing stakeholder buy-in. This experience of intensive engagement with and between multiple stakeholders has highlighted the importance of moving towards a landscape approach, rather than a purely site-based protected area approach, to ensure conservation is integrated with improvements in sustainable livelihoods and governance.

While project staff consider participatory processes to be essential for changing people's attitudes towards conservation,

it is recognised that communities' behaviour is also affected by external factors and the opportunity or constraints these impose. Therefore, monitoring changes in the social, economic and political context is important for understanding, and planning for, impacts on project activities; such changes can significantly influence the project's chances of success or failure. Early attempts to manage the project from a distance, albeit with regular visits to provide technical training and facilitation, proved insufficient to enable in-depth understanding, and to provide appropriate motivation and capacity-building support. Effectively monitoring the dynamic local context, and building trusting and fruitful relationships with local communities and government actors, required the constant presence of project staff in the field.

The importance of building capacity for good governance has been illustrated by the project's experience with trying to engage buffer zone communities in the development and implementation of the Cristalino State Park. Initially a series of awareness-raising and discussion workshops were held with community representatives and relevant local government actors through a protected area 'consultative council'. In this way it was hoped to give local people more of a voice in decisions over how the park was managed. However, it became apparent that the community members involved in this process were not able to fulfil their roles as representatives of the diverse range of perceptions, needs and aspirations of different people within their community. This representation role has only really become fully effective as a result of intensive engagement, training, mentoring and support to community members to build their leadership and communication skills. A key lesson learnt is that

just having some people from a local area attending meetings with protected area authorities is insufficient for meaningful participation in decision-making on protected area management.

This project has highlighted the range of ways that FFI can facilitate access to a wide range of relevant technical skills and knowledge. This has included direct recruitment of project staff with experience of participatory local development processes, as well as long-term partnerships with local NGOs bringing in skills in environmental education (FEC) and community empowerment and access to markets (IOV). But mobilising specific expertise related to different aspects of sustainable agriculture has also been successful through more informal relationships with research organisations and local government agricultural extension staff. In addition to improving such technical skills and knowledge, of equal importance to the success of the project has been building the capacity of local communities to engage effectively in decision-making processes. This has necessitated facilitating access to information on wider environmental and sustainable development issues, including the role of government and the rights and responsibilities of different stakeholders.

The project team recognise that halting the northerly progression of agricultural expansion into the Amazon is not a task that can be achieved in a few short years. But they believe that a process such as that described here which has provided sound local examples of community empowerment for conservation and sustainable development can be a seed for wider change.



▲ Community workshop in Carlinda. Credit: FFI/FEC



▲ Cattle on cleared land around Cristalino State Park. Credit: Evan Bowen-Jones/FFI



▲ Farmers develop a demonstration plot on a farm in Carlinda. Credit: Evan Bowen-Jones/FFI

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About Fauna & Flora International

Fauna & Flora International (FFI) is a biodiversity conservation organisation working in more than 40 countries around the globe, mostly in the developing world. Our vision is a sustainable future for the planet, where biodiversity is effectively conserved by the people who live closest to it, supported by the global community. Founded in 1903, FFI is the world's longest established international conservation body and a registered charity.



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