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The CI- Givaudan agreement is a business-to-business operator that does not face the same consumer pressures, and consequently regards its engagement less as a CSR activity but more as an investment in ensuring quality supply of an important natural ingredient.

Conserving Biodiversity and Commercializing Non-timber Forest Products in Venezuela's Caura Basin

Overview

This case study examines a Payment for Ecosystem Services (PES) initiative that seeks to conserve biodiversity in the Caura Basin, a highly diverse forest ecosystem in southeastern Venezuela's Bolivar State. In this project, members of the community of Aripao undertake resource management actions, and in return fragrance and flavour company Givaudan commits to purchasing the community's harvest of tonka beans. Extract from tonka beans collected from wild trees is a high value ingredient in luxury perfumes. The relationship between Aripao and Givaudan is governed by a Conservation Agreement, an incentive-based approach to community conservation as developed by Conservation International (CI). Feasibility assessments and initial community engagement activities by CI in 2007-2008 were followed by the first signed agreement in 2009, which has been renewed every year since.

Under the agreement, Aripao community members are responsible for conservation commitments including patrols and desisting from forest clearing and hunting. Venezuelan non-governmental organization Phynatura maintains the on-the-ground relationship with Aripao, provides training for community resource management processes, and organizes socioeconomic and biological monitoring exercises. Local tonka purchase and export is handled by intermediary firm Cerbatana, while CI facilitates links between Phynatura and Givaudan and provides technical support to Phynatura. With a budget to date of just under $500,000, these partners together have revived a traditional income-generating activity for the people of Aripao while achieving a resurgence of key species such as American tapir, jaguar, and yellow-spotted Amazon River turtle.

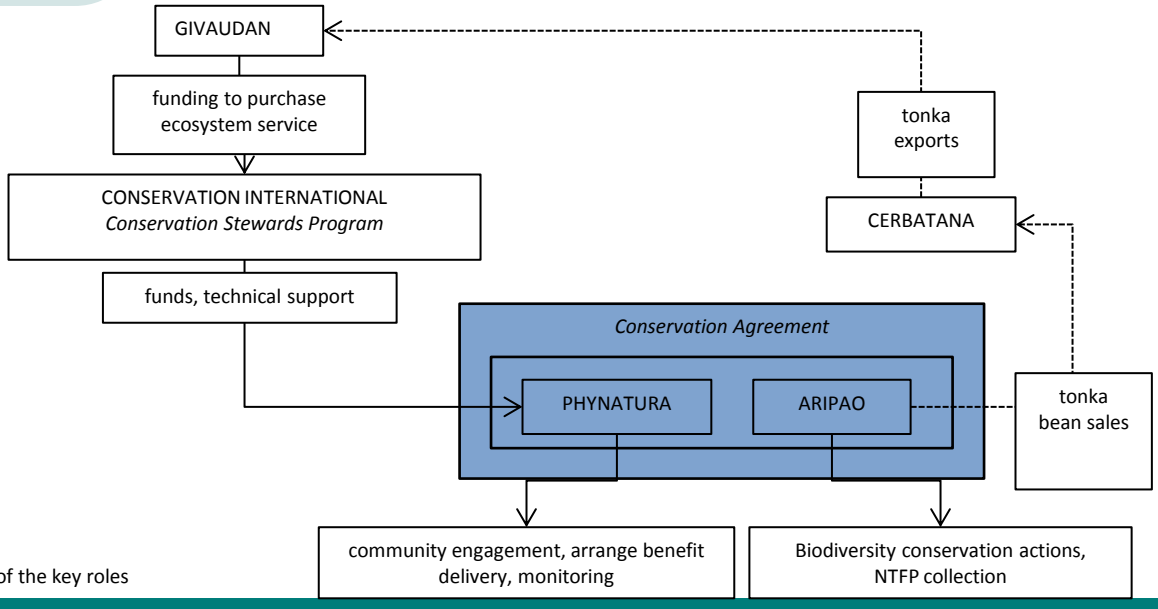

Figure 1: Schematic diagram of the key roles

Background

Venezuela's Caura Basin is widely recognized as a priority for biodiversity conservation in the Guyana Shield region. Threats to forests, rivers and biodiversity of the area include agricultural expansion, illegal mining and poaching. As of the late 1990s, Conservation International (CI) expended considerable effort to document ecosystem values and biodiversity, as well as threats. Communities in the area see few economic alternatives to unsustainable resource use, leading Conservation International (CI) to conclude that economic incentives would be essential to change behaviour. Discussions with the community of Aripao in 2007-8 indicated that community members were willing to help achieve conservation outcomes in return for a negotiated benefit package, thus setting the stage for a PES-style intervention.

In designing the benefit package, CI and its local partner Phynatura noted that the collection and sale of tonka beans (sarrapia) had long been an important economic activity in Aripao. Although tonka is also produced from domesticated stands, beans from wild trees in intact forest ecosystems yield the highest quality of an extract which is a prized ingredient in the perfume industry. This ingredient was synthesized in the 1970s, reducing the demand for wild tonka and the involvement of the Aripao community in its collection. However, the industry is now again interested in using wild tonka to develop more nature-based products. Therefore combining forest patrols with the maintenance of tonka collection routes through the forest offered a strategy to achieve conservation through enhanced vigilance while sustaining environmentally benign non-timber forest product (NTFP) income generation. Over time, the project implementers intend to explore the potential for other NTFPs, as well as possibilities for local processing to enhance value-added captured by the community; however, to date technical requirements for producing tonka extract of adequate quality preclude local processing.

Givaudan – a global flavour and fragrance industry leader and prominent perfume manufacturer –acts as a buyer for the ecosystem service as well as the tonka bean compound. The compound is produced by French firm BIOLANDES for Givaudan. The company has a direct interest in supporting the protection of the Caura ecosystem to maintain a supply of high quality tonka; indeed, at present Givaudan is forced to source from other locations as well, including tonka plantations, as the volume from Aripao annually meets only about 10-25% of the company's need. In many PES schemes, private sector participation is motivated by Corporate Social Responsibility (CSR) commitments in response to customer demand. However, Givaudan is a business-to-business operator that does not face the same consumer pressures, and consequently regards its engagement less as a CSR activity but more as an investment in ensuring quality supply of an important natural ingredient.

The project largely evolved in a regulatory vacuum, as the government of Venezuela dedicates virtually no resources to protecting the Caura Basin. Although the government recognized the importance of the area by designating the Caura Forest Reserve in 1968, the Venezuelan Ministry of People's Power for the Environment is largely absent on the ground, with only two officers in the field to protect 5 million hectares. Thus, while the project supports the conservation management objectives of the Reserve, it is not concretely embedded in a particular regulatory context. The PES transaction reflected in the negotiated agreement between Phynatura and the community of Aripao is therefore a stand-alone initiative that can inform development of regulatory frameworks in the future. Phynatura nevertheless strives to engage government institutions, particularly at the local level, to embed the initiative in the political and institutional context.

The PES agreement

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The tool used for the PES transaction is a *Conservation Agreement (CA)*, an approach developed by CI's Conservation Stewards Program (CSP). CAs offer direct economic benefits to resource users in exchange for commitments to changes in resource-use. Thus, CAs provide direct incentives that link conservation funders (governments, bilateral agencies, private sector companies, foundations, individuals, etc.) to resource owners whose practices influence conservation outcomes. In short, a CA looks much like a contract, specifying what a community must do in terms of conservation measures to be eligible for the benefit package offered by CI and its partners. Community commitments are designed as responses to sources of pressure on biodiversity and ecosystems. The size of the benefit package depends on the magnitude of the community commitments, and its contents are defined through a participatory community-based process to identify needs and priorities; the proportion of the benefit package that is delivered in a given year is a function of performance on the commitments.

Finally, provisions for monitoring as well as the penalty system for non-compliance need to be negotiated as well, to ensure that all parties to a CA share the same understanding and expectations. For example, a penalty related to illegal hunting was applied early in the project and the individual concerned was barred temporarily from participating in the community patrols. Monitoring and penalties for non-compliance are essential, as the benefits provided under CAs must be conditional on conservation performance. Effective monitoring frameworks typically track both process/activity indicators (*e.g.*, number of patrols) and outcome indicators (*e.g.*, forest cover).

The Caura project is a CA between Phynatura and the community of Aripao, with funding from Givaudan and technical support from CI. Thus, Phynatura acts as a broker between Givaudan as buyer and Aripao as seller of the ecosystem service. Payments provided by Givaudan are further reinforced by purchases of tonka beans, mediated by Cerbatana which is the sole purchaser of tonka beans in Venezuela. Cerbatana's monopsony position (as the only buyer) leads to complicated and sometimes problematic dynamics with respect to price setting, but their exclusive license precludes direct purchase from the community by Givaudan. Also, direct export by the community is not possible, as they are unable to collect the large quantities required to make doing so profitable.

Table 1. Actors involved and their tasks and responsibilities

• Givaudan: Swiss-based purchaser of tonka extract derived from Aripao supply, and beneficiary/buyer of environmental service.
•Aripao: community responsible for conservation actions, including maintenance of tonka collection routes, patrols and commitments to desist from forest clearing and hunting, thus providing the environmental service *(no logo available)*
•Phynatura: Venezuelan non-governmental organization responsible for maintaining relationship with Aripao, providing training and technical support, facilitating community resource management processes, and organizing socioeconomic and biological monitoring exercises.
•Cerbatana: in-country purchaser of NTFPs, including tonka beans sourced from Aripao, for export and ultimate purchase by Givaudan
•Conservation International (Conservation Stewards Program – CSP): facilitate link between Phynatura and Givaudan, provide technical support and oversight to Phynatura, assist Phynatura with fundraising
•Other donors: European Union, United Nations Development Program, Mulago Foundation (through support to CSP)

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The environmental service and how it is measured

Conservation commitments undertaken by Aripao are to desist from illegal activities within the Caura Forest Reserve (especially clearing, hunting, and mining), maintain the tonka collection routes, conduct regular community patrols and report illegal activities to authorities. The benefit package provided by Phynatura in return includes facilitating access to a secure tonka bean purchaser (Givaudan), investment in improved tonka collection and storage, capacity building for community governance and resource management, funding and technical support for exploring potential for additional NTFPs, a rotating microcredit fund, and training, equipment and wages for the community patrolling efforts. Regular patrolling activities have helped control commercial hunting and forest clearing by members of Aripao as well as outsiders.

The principal environmental service being provided is biodiversity conservation sustained by a healthy forest ecosystem. For Givaudan, this helps maintain the quality of NTFPs, particularly tonka beans. In addition, conservation actions by Aripao community members (e.g. vigilance efforts against illegal deforestation, hunting and mining) help maintain an 88,000-hectare section of the Caura Basin as a pristine watershed. However, the environmental service is not measured in terms of value. Instead, the appropriate size of the incentive (benefit package) is determined on the basis of opportunity cost, meaning an analysis of what the community is being asked to give up as a result of its conservation commitments. In this project, opportunity cost reflects the time invested in patrolling activities and in opening and maintaining the wild tonka extraction routes, as these were overgrown by vegetation at the beginning of the project. Thus, without the project the community would not have been able to open theses routes. An analysis of opportunity cost provided the basis for negotiations between the community and Phynatura, resulting in a mutually agreeable benefit package. The community and Phynatura agreed that the economic incentive should correspond to a daily wage for time spent in the field (S/.142.5 Bolívares, about US$23 under the official exchange rate). This corresponds to about 10% of household income – the remainder mainly comprises cash transfers from the government or income from government jobs. Families use the incentive to purchase food, medicines and school materials for their children.

Figure 2. Tonka Fruit in Aripao

The effectiveness of the conservation agreement is measured through biodiversity monitoring. Data to measure the population status of key indicator species including American tapir (*Tapirus terrestris*), jaguar (*Panthera onca*), yellow-spotted Amazon River turtle (*Podocnemis unifilis*) and spectacled caiman (*Caiman crocodiles*) are collected monthly by patrolling teams. These data are analyzed twice a year by a biologist from Fundación La Salle, who is also in charge of training the patrolling teams in monitoring techniques. Every three years in-depth biodiversity surveys are conducted by a specialist from La Salle to verify that the data gathered by the patrolling teams reflect the reality of the area. To collect the data the patrolling teams and biologists have defined data gathering protocols and use previously determined transects. The cost of involving the patrolling teams in data collection is covered by the patrolling incentive. Engaging trained biologists to carry out more detailed analyses costs approximately US$10,000. An analysis of vegetation cover change is also planned for 2013 to assess the efficacy of conservation agreements in controlling deforestation in the area.

Givaudan provides funds to CI, which are governed by a grant agreement. The bulk of these funds is passed on to Phynatura, governed by a grant agreement between CI and Phynatura; Givaudan finds this structure appealing as CI provides technical support and oversight of Phynatura's performance. Phynatura has entered into a CA with the community of Aripao, which is reviewed and renegotiated each year, and Cerbatana is included as a supporting party as the tonka purchaser. Givaudan maintains a separate relationship with Cerbatana.

Lessons learned

The principal lesson with respect to incentives is that the benefits provided under the Conservation Agreement between Phynatura and Aripao have proven to be an effective means to secure behavior change that helps conserve biodiversity. Patrolling to help ensure maintenance of ecosystem service has become a prized and respected form of conservation employment, while also generating information that indicates increased presence of key indicator species in the area. Moreover, strengthening a traditional income generating activity (tonka bean collection) is a benefit that is environmentally compatible and has great cultural resonance. The process of negotiation that led to the benefit package was transparent and broadly participatory, thereby enhancing community buy-in and perceived legitimacy of the agreement. Before the CA initiative the community had experience with organizations coming to the area and making promises that often were not kept. For this reason when the agreement was first signed, the community was skeptical. Now they know that Phynatura delivers the agreed-upon benefits as long as they comply with their commitments, which has also reduced the time needed to renegotiate and renew the agreement, thereby reducing the project's transaction costs. Importantly, the conservation agreement is seen as an apolitical community-based initiative without links to government or party politics, which has helped secure institutional ownership at the community level.

Financial sustainability remains a challenge. Givaudan is prepared to continue its commitment to purchase a minimum amount of tonka from Aripao each year, and eventually to offer a premium price as an extra incentive for continued biodiversity maintenance (this price premium is not yet in place). However, given estimated average annual harvests, there is no reasonable premium that would yield sufficient income to maintain the community patrolling program. Additional NTFP options are being explored, but the likely scale will not be sufficient either. Thus, the overall arrangement remains dependent on additional funding in the form of grants, from either Givaudan or other sources. There is an argument for building CA costs into the Forest Reserve management budget, but this budget is trivial. The possibility of a dedicated trust fund has been mooted, but work on a long-term financing mechanism of this type faces considerable difficulties given the Venezuelan context. Therefore the overall strategy includes ongoing efforts by Phynatura to work with other organizations in Venezuela to press for changes in national environmental policies that would expand financing and regulatory options to support community-based conservation; though the political context in Venezuela makes this challenging.

A related challenge relates to the role of Cerbatana. Cerbatana maintains a monopsony as sole purchaser of tonka and other NTFPs in Venezuela. Therefore they are a key participant in the overall project, but at times their participation is somewhat reluctant, because they fear a future in which the Aripao community possibly sells directly to Givaudan. Although there is no intention to undermine Cerbatana's position, this dynamic points to the challenge of maintaining trust and mutual understanding.

Lessons learned

A particularly positive development in this project is that the community decided to establish a legally registered Association to manage the conservation agreement. This Association initially was motivated as a mechanism for organizing patrols, tonka collection and sales, and administering CA benefits such as the microcredit fund. Now the Association is also yielding additional positive impacts with respect to community governance, as its leaders benefit from training and Phynatura facilitation efforts, and decision-making within the community is becoming increasingly transparent and participatory.

Thus, while noting the challenge of sustainable financing, the outlook for the overall project looks positive thanks to demonstrable beneficial impacts on both social and ecological fronts. This has helped the project attract substantial funding from the EU, which will sustain activities for three years and expand the approach to neighboring indigenous communities.

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