



EVALUATING THE RESULTS OF OUR WORK

**Creating Economic Opportunities
from Sustainable Forest Management
in a Protected Area**

A Case Study of the ULAKUAS
Agroforestry Cooperative (CAIFUL),
(Río Plátano Biosphere Reserve, Honduras)

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The Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank (IDB) Group, is the largest provider of technical assistance for private-sector development in Latin America and the Caribbean. Its core beneficiaries include micro and small businesses, small farms, and poor and vulnerable households. It designs and finances pilot projects to test pioneering approaches to building economic opportunity and decreasing poverty. www.fomin.org

The Rainforest Alliance works to conserve biodiversity and ensure sustainable livelihoods by transforming land-use practices, business practices and consumer behavior. www.rainforest-alliance.org

Acronyms

ACC	Annual Allowable Cut
BF	Board foot/feet
CAIFUL	ULAKUAS Agroforestry Cooperative
CoC	FSC® Chain of Custody certification
FSC®	Forest Stewardship Council®
GIZ	German Society for International Cooperation
ICF	National Institute for Conservation and Forest Development
MIF	Multilateral Investment Fund (member of Inter-American Development Bank Group)
NTFP	Non-timber forest products
RPBR	Río Plátano Biosphere Reserve
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICAF	Union of Agroforestry Cooperatives of the Río Plátano Biosphere Reserve

PREFACE

Over the last two decades, countries across the tropics have devolved increasing authority over natural forests to local actors. The ability of those actors to manage forests sustainably and make forestry a competitive land-use choice has therefore taken on a growing importance. In response to this changing landscape, a range of efforts around the globe are supporting community-based forest management by working to improve the capacity of local people to manage their natural resources and develop local enterprise. In spite of the abundance of manuals, methodologies and other tools to guide technical assistance, there is a relative paucity of systematic analyses of the results of such efforts: experiences, lessons learned and recommendations for improving assistance to local forestry development.

This case study is one of 10 produced under “Forest Conservation through Certification, Markets and Strengthening of Small and Medium-sized Forest Enterprise,” a five-year project supported by the Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank (IDB) Group. Led by the Rainforest Alliance, the project involves approximately 100 community operations and small and medium-sized enterprises (SMEs) in Guatemala, Honduras, Mexico, Nicaragua and Peru. The project’s central aim is to improve local livelihoods through sustainable forestry and enterprise development. Although the support needs, contexts and development levels of partner communities vary tremendously, the project’s unifying strategy is to improve business capacities, market access and financial support for enterprise development in order to secure sustainable forest management and livelihood development.

The case studies in this series were carefully selected to cover all five countries where the project is active, and to reflect the full range of participants—from highly incipient community operations, to second-tier business alliances among multiple well-developed, certified enterprises. Special attention was also paid to ensuring representativeness with respect to forest ecosystems (temperate and tropical), tenure arrangement (permanent and concession) and production focus (timber and non-timber). In all of the studies, the impact of Rainforest Alliance technical assistance on enterprise development was analyzed, including a critical assessment of priorities for future assistance. Beyond enterprise-specific examples, two studies take a more thematic approach, analyzing experiences with markets for lesser-known species and financial mechanisms.

Taken together, the 10 studies support the growing body of research demonstrating that community-

based production forestry can be an effective approach to conserving forest resources while also generating significant social and economic benefits for marginalized communities. At the same time, however, these studies tell a more nuanced story. The diversity of contexts and enterprises represented sheds light on the development of community forestry in its many forms—towards multiple and sometimes contested goals—while chronicling both successes and failures. As such, each case stands on its own to inform similar cases around the world, while also forming a part of the broader story this series tells about the variable trajectories of community forestry development.

Although a guiding goal of many projects—including the present one—is to achieve financial sustainability for community forest enterprise, the importance of external technical assistance in building local capacities is also clearly fundamental. However, the effectiveness of such assistance is not always optimal, which is why each case includes an assessment of the results of the Rainforest Alliance technical assistance that was received. In several cases, insufficient data and/or a lack of indicator consistency—not to mention confounding external factors (storms, market fluctuations, political upheaval and social conflict) and the absence of truly scientific controls—make it impossible with full confidence to attribute change solely to Rainforest Alliance support, especially given the active presence of other actors at all project sites. This caveat notwithstanding, it is clear that, in each case, project interventions produced concrete results. The studies aim to extract lessons from these results and recommend ways forward.

Finally, while the bulk of these studies have been prepared and published by staff of the Rainforest Alliance, they would not have been possible without the collaboration and dedicated efforts of many others including a host of government agencies, civil society partners, academic institutions and private sector actors. Above all, the communities themselves must be recognized and congratulated for the time that they invested in assisting with the compilation and review of these studies. All contributors are specifically acknowledged in each separate case study. Although the contributions of all of these actors are fundamental, the content of these studies is the sole responsibility of the Rainforest Alliance, except where other institutions have taken a co-publishing role.

The table on the following page presents a breakdown of the 10 case studies that were produced as part of this project.

No.	Case Study	Location	Key Themes
1	Awas Tingni community	North Atlantic Autonomous Region, Nicaragua	<ul style="list-style-type: none"> • Indigenous community forestry • Incipient forest enterprise development • Social and institutional foundations for community forestry
2	Moskibatana non-timber forest product (NTFP) enterprise	Muskitia, Honduras	<ul style="list-style-type: none"> • Indigenous community forestry • NTFP management and Forest Stewardship Council® (FSC®) market development • Development of a new forest enterprise
3	Ejido El Largo	Chihuahua, Mexico	<ul style="list-style-type: none"> • Integrated forestry development planning • Community forest enterprise competitiveness
4	CAIFUL agroforestry cooperative	Río Plátano Biosphere Reserve, Honduras	<ul style="list-style-type: none"> • Local forest enterprise development • Benefits of forest enterprise at the community scale
5	Analysis of forest management in community concessions	Maya Biosphere Reserve, Guatemala	<ul style="list-style-type: none"> • Impacts of certified community forestry silvicultural and management systems • Investments by community enterprises in conservation and monitoring
6	Brazil nut production and enterprise	Madre de Dios, Peru	<ul style="list-style-type: none"> • NTFP enterprise development • Financial and administrative capacity building
7	TIP Muebles	Oaxaca, Mexico	<ul style="list-style-type: none"> • Commercial cooperation among community forest enterprises • Furniture value chain development
8	Tres Islas native community	Madre de Dios, Peru	<ul style="list-style-type: none"> • Indigenous community forestry • Landscape approach • Incipient forest enterprise development
9	Building markets for lesser-known species	Maya Biosphere Reserve, Guatemala	<ul style="list-style-type: none"> • Development of new markets for lesser-utilized commercial timber species • Diversification of a second-tier community forestry business model
10	Financial mechanisms for community forest enterprises	Regional	<ul style="list-style-type: none"> • Design, operation and impacts of mechanisms to increase forestry producer access to credit

Creating Economic Opportunities from Forest Management in a Protected Area



Rainforest Alliance staff delivering technical training on primary processing best practices in the forest.

Photo by Carlos Sandoval

This case study chronicles work undertaken with the CAIFUL forestry cooperative, situated near the indigenous Miskitu community of Brus Laguna, in the Río Plátano Biosphere Reserve, in north-eastern Honduras. Home to approximately 11,000 people, Brus Laguna is one of the country's poorest municipalities, with an annual per capita income of US\$1,090. The people who call this part of the Muskitia home are the ancestral stewards of ecosystems rich in cultural and biological heritage.

CAIFUL is a 40-member cooperative whose forestry practices are certified to Forest Stewardship Council (FSC) standards. The cooperative is dedicated principally to the sustainable production of timber for national and international markets. CAIFUL manages a 19,055 ha forest concession in the biosphere reserve's cultural zone, about 25 km south of the community of Brus Laguna. The concession is particularly rich in mahogany and other hardwoods, and holds a host of important non-timber forest products as well. Since 2005, Rainforest Alliance has been working with forestry cooperatives in Honduras. In 2010, with support from MIF, Rainforest Alliance began working more directly with

CAIFUL to improve enterprise operations. Support has also been received from USAID and, more recently, from the Avery Dennison Foundation.

The core finding of this case study is that local forest enterprise – even when highly incipient, undercapitalized and operating in a challenging context – can be profitable and significantly improve local incomes. Through forest harvesting and enterprise development, CAIFUL has become an important source of employment among both cooperative members and non-members. For the majority of the people who spend one or more months per year working for CAIFUL, their earnings from forestry makes up about quarter of all income; but for more than 15 percent of workers, forestry accounts for more than 50 percent of household income. Significantly, CAIFUL has sought to increase the contribution that forestry makes to local incomes over time, steadily increasing salaries paid to workers.

Based on the analysis undertaken for this case study, and the years of support from Rainforest Alliance to CAIFUL, the following main conclusions and lessons learned are advanced:

- During the period analyzed, CAIFUL moved from chronic unprofitability to enterprise solvency. In 2009, the year before project interventions began, CAIFUL posted losses of more than US \$13,000; in 2014, the cooperative had net profits of US \$28,500.
 - CAIFUL has managed to improve enterprise performance through increased forest production, improved efficiency and quality, and better management systems related to compliance with cumbersome bureaucratic procedures.
 - CAIFUL has steadily increased income from forest harvesting, chiefly through improved quality control and resulting penetration of premium markets. Over a four-year period, CAIFUL went from selling all of its wood into non-differentiated markets, to selling more than 80 percent of its harvest to an international buyer. This resulted in US\$7,800 in increased income.
 - CAIFUL creates a significant number of jobs for both its members and the wider Brus Laguna community. For many of those employed, forestry work constitutes an important percentage of their annual income. Such contributions are particularly notable given the remoteness of Brus Laguna, high local poverty indicators, and the relative paucity of (legal) economic opportunities.
 - In spite of a lack of scale necessary to maximize profits and benefits, CAIFUL has invested in steadily increasing salaries and incomes for workers, as well as promoting the uptake of new knowledge and skills among members and non-members to create new job opportunities.
 - CAIFUL has worked to improve community participation, particularly among women. Over the years, women have gained access to higher-salaried, specialized jobs, and have held leadership posts in the cooperative.
 - The cooperative has taken steps to increase transparency with the wider Brus Laguna community and the DIUNAT territorial council, although more remains to be done on this front.
 - Given the concession's size and considerable standing timber resource, there is tremendous scope to build on these gains through diversification, value-added production and new buyer alliances. Holding FSC certification can assist CAIFUL in this transformation.
- Additionally, this analysis offers several recommendations for CAIFUL and organizations working to support similar efforts:
- CAIFUL needs to urgently and proactively engage with Brus Laguna community authorities, the DIUNAT territorial council and other actors in the Muskitia to ensure a clear and smooth transition as Brus Laguna undergoes the indigenous land titling process.
 - Once the future of forest governance and enterprise has been secured, CAIFUL leadership should work to build consensus among stakeholders for the intensification of forest harvesting in the concession area. Only through diversification, increased productivity, value added and

Rainforest Alliance technical assistance has helped CAIFUL to produce more export-quality wood and thereby improve its revenues

Photo by Charlie Watson

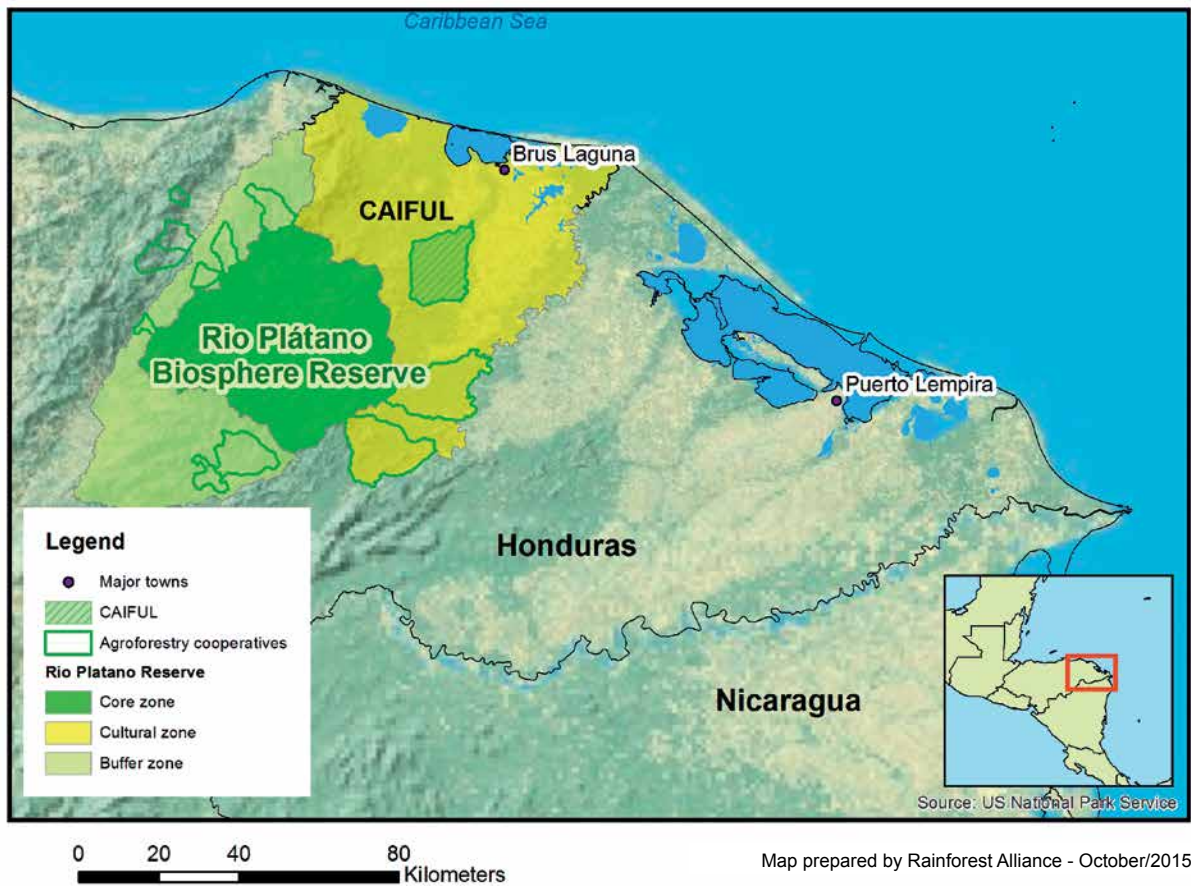




enterprise growth will the full potential for job creation be realized, and only through an economically attractive alternative with forestry will the mounting threats to Brus Laguna's forests be held back.

- If a consensus can be achieved with Brus Laguna leadership, CAIFUL should work with technical assistance partners, buyers, national subsidy programs and other stakeholders to articulate a plan for the intensification and diversification of forest harvesting in its concession. This business plan should then be used to mobilize investment from both public and private sources to finance the transformation of forest enterprise in Brus Laguna.
- Diversification should focus on other hardwoods with solid market demand, as well as key NTFP species such as tuno and swa.
- The technical improvements CAIFUL has achieved in wood extraction, logging, sawmilling and managing surpluses provide a good foundation for a new phase to increase the value added to its timber. Opportunities that should be seized upon include production of sawnwood, creation of finished products for the local and national market, and production of charcoal from waste for local use.

Map
Location of
CAIFUL and
other forestry
concessions in the
Biosphere Reserve



Introduction

The Río Plátano Biosphere Reserve (RPBR), located in northeastern Honduras, covers more than 830,000 hectares and is the country's largest protected area. The reserve is situated in an isolated region called the Mosquitia, which until recently has remained largely cut off from the rest of the country. Even today, there is no road connection between most of the Mosquitia and Tegucigalpa, the capital. The majority of the Mosquitia's estimated population of 125,000 is indigenous, primarily Miskitu, Pech and Tawakha. The Garifuna, an Afro-descendant group, also populates a portion of the region, along the north coast. The Río Plátano is a storehouse of cultural and biological wealth. The reserve is home to an estimated 200 archaeological sites and an array of iconic wildlife species including jaguar, giant anteater, Baird's tapir and macaw.

The RPBR was established in 1982 and is divided into three areas. A core zone, at the heart of the reserve, covers 210,733 ha. A 197,422 ha buffer zone runs along the western and southern edges of the reserve. And a 424,167 ha cultural zone, added in 1997, constitutes the eastern reaches of the biosphere. The core zone is for the preservation of biological and cultural diversity, and only scientific research and ecotourism are allowed there. In the buffer and cultural zones, sustainable use of natural resources by local communities is permitted.

Recent years have seen significant and rapid change in and around the RPBR. An influx of non-indigenous ("ladino") colonists from adjacent departments has led to increasing rates of forest conversion, above all for cattle ranching. The broader Mosquitia has also become a center for drug trafficking, which has resulted in violence, land grabs and increased forest conversion as a result of illegal land deals used to launder money (McSweeney et al. 2014). During 2005-2010, FAO found Honduras to have the highest deforestation rate in all of Latin America, and much of this deforestation took place on the western and southern edges of the reserve. This situation led UNESCO to add the Río Plátano Biosphere Reserve to its World Heritage List in Danger in 2011, at the request of the Honduran government.

Over the past twenty years, an increasing number of communities have formed cooperatives to manage natural forests for timber and other products, and to build up local enterprise to create economic opportunity. Presently, a total of 12 cooperatives are managing 40-year concessions granted by the Honduran state.

Since 2005, the Rainforest Alliance has worked closely with a majority of these cooperatives to help them implement sustainable forestry and achieve the greatest possible benefit from the timber they harvest. This support has included technical assistance to harvest timber in a low-impact manner, to improve the efficiency of their logging

and milling operations, and to connect them to the preferred markets for their wood products.

One of these cooperatives is located in the indigenous community of Brus Laguna, situated at the northern tip of the cultural zone on the Atlantic coast. The community and the wider municipality of Brus Laguna are home to approximately 11,000 people, most of who live in the town of Brus Laguna. It is one of the country's poorest municipalities, with an annual per capita income of US\$1,090. At the same time, however, the town of Brus Laguna has the highest adult literacy rate and the highest school enrollment in Gracias a Dios department, which comprises most of the Mosquitia. The present case study analyzes the ULAKUAS Agroforestry Cooperative – known as CAIFUL, by its Spanish acronym – which manages a 19,055 ha forest concession situated about 25 km (as the crow flies) from the community of Brus Laguna. Legally registered in 2003, CAIFUL currently has 40 members (29 men and 11 women), though it employs an average of 50 non-members annually during forest planning and operations. CAIFUL also counts assets worth almost 4 million lempiras (US\$180,000).

While the CAIFUL concession is legal following Honduran law, and on paper is valid through 2045, the developing process of indigenous land titling in the Mosquitia has created uncertainty around the future of the cooperative and the forest area it manages. More on this dynamic is considered below.

Forest Management in the CAIFUL Concession

The CAIFUL concession is one of the largest of the 12 forest management areas in the Río Plátano Biosphere Reserve. All but about 1,000 ha is covered with broadleaf forest that is highly biodiverse and rich in mixed-age tropical hardwoods. Due to its remoteness, it has to date been spared the kind of conversion pressure that is so pervasive in other parts of the reserve.

Following its management plan, CAIFUL's potential legal timber harvest of commercial species in the concession's broadleaf forests amounts to 7,489 m³ per year. This includes 1,667 m³ of mahogany (*Swietenia macrophylla*) and Spanish cedar (*Cedrela odorata*) – the two most important species for CAIFUL's forestry operation.

Since its founding, the cooperative has harvested only a fraction of the timber that it is legally entitled to harvest each year. According to CAIFUL's forest management plan, the cooperative can legally and sustainably extract a total 82 timber and non-timber species, including mahogany and Spanish cedar, as well as lesser-known hardwoods such as barba de jolote (*Cojoba arborea*), cumbillo (*Terminalia amazonia*), Rosita (*Hyeronima alchorneoides*), and Santa María (*Calophyllum brasiliense*). A host of non-timber species with market demand, such as swa – an essential oil extracted from the fruit of cedro macho (*Carapa guianensis*) – and tuno (*Castilla tunu*), which is used for handicraft production, also occur

Forest Cover and Land Use in the CAIFUL Concession

Description	Area (ha)
Subsistence agriculture	192
Subtotal	192
Forest production area	
Mature broadleaf forest, closed canopy	5,977.71
Mature broadleaf forest, with gaps	2,969.00
Mature broadleaf forest, on moderate slopes	1,550.00
Swampy broadleaf forest	440.55
Pine forest	743.45
Wetlands	219.84
Pine savannah	253.48
Subtotal	12,154.03
Protected broadleaf forest	6,899.32
Subtotal	6,899.32
Total	19,055.27

Source: UNICAF FSC evaluation 2005-2010

Table 1
Types of forest and other ecosystems in CAIFUL's forestry concession



in CAIFUL's forest concession. Nevertheless, CAIFUL has to date concentrated its efforts exclusively on mahogany, due to the strong, high-paying market for that scarce and precious wood, and due to the lack of capital and enterprise capacity to market a broader diversity of products.

Whereas most of the productive tropical forests in Latin America were stripped of their commercially viable mahogany years ago, CAIFUL's concession retains significant mahogany assets. In 10 years of operations, the cooperative has extracted just 1,293 m³ of mahogany, which represents less than 10 percent of the annual allowable cut (AAC) approved by the National Institute for Forest Conservation and Development (ICF, by its Spanish acronym).

While CAIFUL's low level of timber exploitation may be good for the forest, such an under-capacity operation generates low levels of income and profitability. This is of particular concern in a community like Brus Laguna, where local opportunities for legal economic development are highly limited.

The principal reason that harvest levels have remained low is the cost of production. Forest management and operations in CAIFUL are extremely costly, even compared to other areas of the reserve. From inventory to permitting to harvesting, CAIFUL is beset by high costs that the under-capitalized enterprise is unable to cover up front. A 2012 assessment of CAIFUL's timber extraction estimated its production cost to be HNL49.30 (US\$2.46)/board foot. This is high, even by the standards of community forest enterprise operations in the tropics.

The concession's remoteness makes the process of felling, bucking and extraction especially costly. These activities alone account for more than 50 percent of the cooperative's production costs. In addition to funding inventory and harvest operations, the cooperative must cover management costs and the payment of taxes and fees to the Municipality of Brus

Laguna – and now the territorial council – as well as ICF. In 2012, fees paid to ICF alone amounted to HNL 150,000 (approximately US \$7,500), representing 17 percent of its total production costs.

Added to these costs are the large number of bureaucratic requirements that CAIFUL must comply with in order to operate legally. From annual plan approval to harvest and transport permitting – not to mention the special authorizations needed to export mahogany, a CITES-listed species – there are a host of official approvals that must be obtained for CAIFUL to operate. Although such costs have never been quantified, cooperative leadership cites this as a significant cost (in cash and in kind) that consumes considerable time each year. Easing the regulatory burden on the cooperative would improve enterprise competitiveness.

CAIFUL and UNICAF

CAIFUL is a founding member of the Union of Agroforestry Cooperatives of the Río Plátano Biosphere (UNICAF), a second-tier organization that was formed to represent and assist the 12 cooperatives in the reserve. The goal of UNICAF is to support improved productivity among members, co-invest in value-added, aggregate supply, and access preferred markets. The history and development of UNICAF has been profiled in a previous Rainforest Alliance case study (Fortín et al. 2010). One of the key achievements of UNICAF over its 10-year life was the achievement of FSC group certification, in May 2010. CAIFUL's concession is the largest of all UNICAF's members – it is more than double the size of the other members in the FSC group certificate – and it also holds the greatest timber production potential. Thus the cooperative is fundamental to UNICAF's own enterprise development trajectory.

UNICAF currently has an agreement with CAIFUL that guarantees:

1. A minimum price of HNL 50 (US \$2.28)/Board Foot (bf)
2. Interest-free credit of HNL 800,000 (US \$37,905) for the harvest of each 100m³ of wood
3. A premium for export-quality wood of HNL 8 (US \$0.36)/bf since 2014 (premium was previously HNL 5/bf)
3. Social organization – decision making, transparency and participation;
4. Market development – forest certification, value added and client management.

In spite of positive benefits of membership in UNICAF, there are tensions between CAIFUL and the second-tier business that, while inherent in most such arrangements, must be addressed to maximize the benefits of forestry for both organizations. More on this is considered below.

Rainforest Alliance Technical Assistance

The Rainforest Alliance has been working with forestry cooperatives in the Río Plátano since 2005, most recently with support from MIF. Over its 10 years of working with community-based forestry in the region, Rainforest Alliance has focused technical assistance in the following core areas:

1. Forest productivity – timber harvesting and primary processing;
2. Enterprise development – business administration and financial management;

Specifically with CAIFUL, Rainforest Alliance began working with the cooperative in 2006, one year after the cooperative began operating. In line with the core areas of support given to other UNICAF members, Rainforest Alliance has focused on helping CAIFUL achieve improved productivity and operational efficiency in the forest, while increasing local capacities in business administration and enterprise. Work in the forest focuses on minimizing waste, adding greater value to raw material, and complying with the quality standards demanded by the market, while limiting the ecological impact of timber extraction on the forest and monitoring areas following intervention to ensure regeneration. Assistance at the enterprise scale has focused on achieving more efficient administration of business operations, while ensuring transparency in the cooperative's financial management, and achieving the greatest possible social benefits and profitability. A significant focus has been to promote the inclusion of women and marginalized households as well. More specifically, technical assistance to CAIFUL has concentrated on the following key activity areas:

- Training cooperative members and workers in



Mahogany awaits transport in Brus Laguna
 Photo by Charlie Watson

directional felling, bucking and primary processing in the forest to maximize quality and minimize waste;

- Training in quality control during wood extraction, transport to landing, preparation, packaging and transport to market;
- Assistance in the process of permitting and official approval for forest harvesting, sale and transport;
- Training in the assessment of enterprise performance, including the establishment of baselines, action plans and periodic monitoring;
- Facilitating the partnership between CAIFUL and North American Wood Products for the sale of high quality mahogany guitar necks through UNICAF;
- Training in organizational and business development strategy;
- Assistance in review of compliance with cooperative rules, decision-making processes, transparency, participation and inclusion.

Work in the latter two areas included training cooperative members in the application and analysis of the Rainforest Alliance's "autodiagnostic" tool (ADORE by its Spanish acronym). Applied in the

majority of the Latin American community operations supported by the Rainforest Alliance, the tool helps to track enterprise development in the following key areas:

- Legal compliance
- Participation
- Administrative capacities
- Tax issues
- Financial management and accounting
- Value-added production and marketing
- Credit
- Finance
- Solvency

By evaluating development according to a range of indicators and using a four-point scale to score performance against defined benchmarks, enterprises obtain a detailed qualitative and quantitative picture of their current operations. ADORE indicates areas where improvement is necessary, which helps with prioritizing internal efforts and external support. Once trained in the application of the tool, enterprises can use it to track progress over time. For the period of 2010 to 2014 – the period of support from MIF analyzed in this case study – Rainforest Alliance dedicated approximately 50 percent of its technical assistance to improving productive processes and adding value, 40 percent to improving the cooperative's organization and administration and 10 percent to the identification of needs and self-assessments.

Results of Technical Assistance

Four core areas are highlighted below, summarizing results related to the Rainforest Alliance's technical assistance, and significant change in CAIFUL's enterprise performance. These areas correspond to the main themes of technical support listed above:

- *Forest productivity*
- *Enterprise development*
- *Social organization*
- *Market development*

Forest productivity

Forest productivity includes timber harvesting, primary processing in the forest, extraction of blocks and delivery of a semi-finished product to the market. As presented in the following chart, CAIFUL has achieved an overall increase in lumber production and quality over the years of technical assistance. During 2009-2011, the cooperative only managed to harvest 100m³ of the AAC each year. As of the harvest year in this analysis (2014), CAIFUL harvested just over 300m³, i.e. 50 percent more than amount harvested during the previous year (yet still just 23 percent of AAC).

This increase was due to two factors, both of which were direct results of technical assistance. First was the (relative) speed with which harvest permitting was achieved with ICF, unlike most years. Rainforest

Worker sharpens his saw during a CAIFUL timber harvest

Photo by Carlos Sandoval



Alliance has invested heavily in assisting CAIFUL to manage the paperwork and processes necessary to comply with the complicated and cumbersome bureaucratic requirements for legal harvest. Second was the availability of working capital facilitated by UNICAF, which was made possible through a financial mechanism assisted by Rainforest Alliance.

Another key area along the production chain that has seen improvement is primary milling yields. Achieving better yields is critical to improved efficiency, higher quality and reduced waste in the forest. As the following table shows, the number of board feet (in blocks extracted from the forest) per cubic meter has increased significantly, from about 180 bf/m³ in 2011 to more than 202 bf/m³ in 2014. This improvement was due above all to technical assistance given in the forest, training sawyers in best practices to maximize yields and quality, and reduce waste.

Another indicator of forest productivity is the percentage of lumber that is rejected due to quality problems such as incorrect measurements (thickness, width and length), wood stained by sap, or boards with checks, knots, holes or other defects. Improvements in CAIFUL's milling operations are reflected by the steady decrease in the percentage of lumber rejected for such reasons from one year

to the next. In 2008 about 10 percent of the material sent to UNICAF for onward processing into value-added guitar necks was rejected. As of 2011, the percentage had dropped to 8.46 percent. Through dedicated technical assistance and strong uptake of capacity among CAIFUL technicians, the percentage of material rejected had dropped to just 0.69 percent by 2014.

Enterprise development

Changes and impacts related to CAIFUL's maturation as an enterprise are best seen through the lens of overall business performance, as well as benefits generated for both cooperative members and the wider community. In the former area, a clear improvement has been seen. As part of this case study, cooperative leadership undertook an analysis of profit and loss over the last 10 years. In 2009, the year before interventions with MIF support began, CAIFUL lost approximately HNL 250,000 (\$13,234); in 2012, that figure had dropped to HNL 29,593 (US \$1,475). By 2014, moreover, CAIFUL was turning a profit of US \$28,500.

This transformation is due to the following factors. First, CAIFUL has boosted forest productivity. Doing so has been made possible chiefly by the factors mentioned above: increased efficiency in the per-

CAIFUL volume harvest (m³), 2005 - 2014

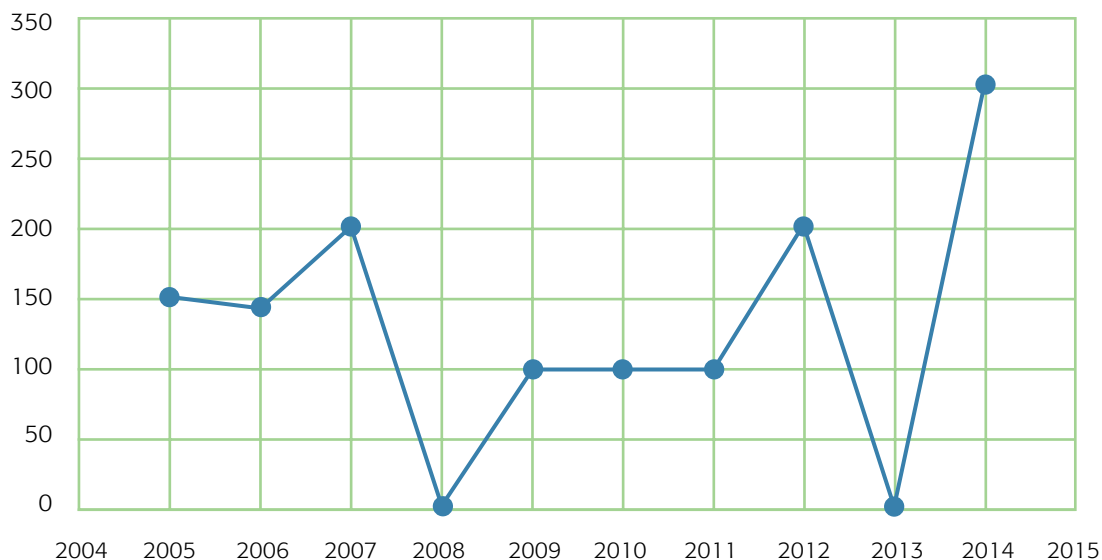


Figure 1
Volume of mahogany (m³) harvested each year from 2005 to 2014

Note: in 2008 and 2013, bureaucratic procedure delayed permitting; no harvest took place.

Table 2
Evolution of greater yield and quality control in forest operations

CAIFUL Primary Processing – Efficiencies and Quality Control			
Year	BF/ m³	BF rejected by UNICAF	Percent of wood rejected
2011	180.13	-	-
2012	180.00	1,522.08	8.46
2014 (1)	173.88	236.33	1.36
2014 (2)	202.40	140.00	0.69

Source: UNICAF report Feb. 28, 2014 & financial records 2011-2012

mitting process and availability of working capital. Second, they have improved production quality, penetrating better markets for a greater share of harvested volume. This has increased the unit price for a growing share of wood.

Even when CAIFUL struggled to turn a profit, it played an important role in the lives of many people in Brus Laguna. Since its founding, CAIFUL has become a reliable source of employment for at least 90 people, while providing opportunities for acquiring knowledge and skills. At the same time, for cooperative members, the concession represents an important legal instrument to exercise and defend ancestral forest ownership rights.

More than 50 percent of the cooperative's costs are for wages paid to local people for tasks such as cutting and transport. This amounts to more than US\$20,000 paid to workers during the extraction of each 100m³ of wood.

During 2011, 2012 and 2014, CAIFUL undertook timber harvests that employed an average of 90 people. This represents 2.5 percent of the total population of the community of Brus Laguna. Assuming that

those workers are the breadwinners for households with an average of four members, wages paid by the cooperative benefit 360 men, women, boys and girls. CAIFUL pays two types of wages: per day worked and per board foot (bf). Generally, cooks, drivers, checkers, day workers and technicians earn day wages, whereas timber fellers, sawyers and transporters are paid per board foot. Although the timber harvest lasts for just one to three months, according to the number of logging campaigns undertaken that year, wages that workers earn in it may represent a significant portion of their annual income. Additionally, wages are paid to cooperative members that undertake periodic inventories – both to update 5-year management plans, as well as to complete annual operations plans necessary for harvest permitting.

Wages earned from CAIFUL-generated employment represent about 10 percent-30 percent of annual income for most workers. However, there are some for whom working for CAIFUL is their sole source of income (see table below). Significantly, the vast majority of workers have seen their day wages rise by an average of 20 percent per year in recent years. For example, a boat operator working to transport

Table 3
The importance of wages paid by CAIFUL for workers' household economies

Forestry worker income as a percentage of total annual household income				
CAIFUL income as percent of annual income	2011	2012	2014	Total
From 1 percent to 10 percent	3	5	5	13
From 11 percent to 20 percent	11	8	13	32
From 21 percent to 30 percent	5	13	11	29
From 31 percent to 40 percent	5	0	0	5
From 41 percent to 50 percent	0	3	3	6
From 51 percent to 60 percent	3	0	0	3
From 61 percent to 70 percent	0	0	0	0
From 71 percent to 80 percent	0	3	0	3
From 81 percent to 90 percent	0	0	0	0
From 90 percent to 100 percent	0	5	5	10

Source: Focus group in Brus Laguna, 29/04/2014



Scarlet macaw (*Ara macao*), one of the Río Plátano Biosphere Reserve's 377 bird species

Photo by David Dudenhofer

wood downriver earned 250 lempira per day in 2011, 300 lempira per day in 2012, and 350 per day in 2014. Payment per bf has also risen with the growing volume of work, although market prices for the lumber produced haven't changed.

Workers earned more during 2014 compared to 2011. As shown in the table below, chainsaw operators earned the most, ranging from HNL 10,000 to HNL 12,000 in each logging operation, whereas wood transporters earned the least, from HNL

3,000 to HNL 5,000.

There has been a clear, positive correlation between increased volume of lumber produced and increased wages for workers. As noted, CAIFUL has significantly increased the volume of lumber harvested in recent years, extracting approximately 23 percent of its AAC in 2014. This has obviously benefited workers who are paid per board foot.

Such metrics – along with those cited above related

Salaries earned by CAIFUL workers according to job

Job performed	Wages Paid (HNL)		
	2011	2012	2014
Boat driver (worked average of 20 days)	5,000	6,000	7,000
Watchman (worked average of 20 days)	-	-	4,000
"Para-technician"/assistant (avg 20 days)	-	-	5,000
Chainsaw operator (paid by bf)	6,000	31,500	10,000
Chainsaw operator (paid by bf)	-	-	12,375
Wood transporter (paid by bf)	5,000	4,000	3,000
Wood transporter 2011-2012 "Technician" / assistant 2014	5,000	4,500	4,250
Wood transporter (HNL5/bf)	2,500	3,000	3,500
Chainsaw operator (HNL5/bf)	-	10,000	-
Cook (L250/day)	3,750	4,000	4,500

Source: Focus Group 28/04/2014

Table 4
Wages earned by CAIFUL workers

to forest productivity – speak to overall improvement of CAIFUL’s enterprise efficiency. Cooperative members interviewed during research for this case study attributed change above all to training and assistance delivered by Rainforest Alliance. Such training has not only resulted in improvements in productivity, lumber quality, and compliance with bureaucratic regulations. According to interviews, technical assistance and “accompaniment” has also been critical in fostering greater motivation and commitment among cooperative members, providing them with new opportunities and skills.

Social organization

CAIFUL is a cooperative that must comply with certain regulations following Honduran law in order to continue operating. National law requires that CAIFUL balance its need to achieve economic competitiveness with the obligation to provide both members and the wider community with goods and services to satisfy individual and collective needs. Recognizing that the social bases for community forestry are fundamental to long-term success, Rainforest Alliance has provided dedicated technical assistance to support CAIFUL in improving compliance with its own bylaws, as well as community and territorial obligations.

There are several areas that have seen improvement over the previous three years, and other areas that will require greater attention. First, the areas where improvement have been seen. According to the ADORE analysis, CAIFUL has improved its performance in three key areas above all: (1) legal compliance, (2) transparency, chiefly by holding regular meetings with the Brus Laguna general assembly to present CAIFUL enterprise metrics, and (3) expanding member participation, particularly among women.

In the latter area improvement has been particularly notable. When the cooperative was created, CAIFUL

had 32 members, only 3 of whom were women. Their role in decision making around cooperative activities was limited. The work they undertook, moreover, was limited to cooking in inventory and logging camps during fieldwork.

Over the intervening years, however, 22 additional women have participated as CAIFUL cooperative members, through active recruitment by CAIFUL leadership. Many women joined the cooperative as part of a project for the extraction of the tuno tree (Castilla tunu), an NTFP used for handicraft production. But women also began participating in wood extraction and have been trained by Rainforest Alliance and CAIFUL to work as technicians. As one interviewed cooperative member put it, over four years, she has progressed from having a limited role, to one where she worked as a field technician supporting harvesting operations, to a new role since 2014 in which she works as a delivered-lumber inspector as part of CAIFUL’s chain-of-custody control system.

Significantly, women have been elected to leadership positions, including CAIFUL vice-president, president of the oversight board, and treasurer and secretary of the cooperative’s board of directors. Currently, CAIFUL counts 11 women members, two of whom serve on its board of directors.

As important as such achievements are, CAIFUL still faces significant challenges if it is to consolidate the social bases for enterprise growth. The first key area for improvement is related to benefits generated to the wider community. While the cooperative creates annual jobs for non-members, this share could be significantly increased through improved productivity and investments in the value chain. Furthermore, as with most cooperatives worldwide, the cooperative is required to dedicate 10 percent of annual profits to social development projects defined by the community assembly. However, due to lack of financial solvency, CAIFUL has been unable to do

CAIFUL timber harvests are an important source of income for Brus Laguna residents

Photo by Carlos Sandoval





Training in reduced impact logging both increased productivity in harvesting and reduced damage to the forest

Photo by Carlos Sandoval

this more than once. In 2007, CAIFUL did invest; according to records, the 10 percent was distributed as follows: 5 percent to a social fund (support to elderly and infirm), 2 percent to an education fund, 2 percent to a community fund (infrastructure and renovation), and 1 percent to a federation fund (to support costs of the indigenous territorial council). That same year, dividends (totaling US \$7,900) were also paid out to members.

The key reason for the difference was a new and higher price per bf for mahogany, plus a higher volume cut (200 m³) than in previous years. While CAIFUL has increased volume harvests over the last few years, it is still in the process of repaying debts from years past (and the lost harvests in 2008 and 2013, due to lack of bureaucratic approval). This has hamstrung the cooperative's ability to pay dividends and make contributions to the wider community. Simply put, stagnating productivity affects the cooperative's capacity to contribute to community livelihoods.

The second key area for improvement on the social

front is related to relations with the Brus Laguna assembly, the indigenous territorial council (DIUNAT) and other community institutions. While CAIFUL has expanded membership over the years and improved its reporting to the community, it is still largely under the control of a single extended family, many members of which can be said to be the elites of Brus Laguna. It is highly important for CAIFUL to diversify its membership and alter its governance so that it includes a broader representation of Brus Laguna community stakeholders.

This need will become all the more important in the coming months and years as the indigenous land titling process comes to the cultural zone of the Río Plátano. Over the last few years, more than 1 million hectares in the Muskitia have been titled to indigenous federations of Miskitu. That process is coming to Brus Laguna, and will most certainly alter the future of CAIFUL. Indeed, the very legality of the cooperative and its concession has been and will be called into question by some stakeholders. Strong coordination with Brus Laguna and DIUNAT territorial council leadership by CAIFUL will be essential to

Earnings from Sales of Mahogany in National and International Markets

Year	National Market			International Market			TOTAL SALES	
	BF	BF price	Total value (HNL)	BF	BF price	Total value (HNL)	BF	Total value (HNL)
2011	18,012	50	900,600	0	0	0	18,012	900,600
2012	28,311	50	1,415,550	4,836	55	265,980	33,147	1,681,530
2013	Timber harvest not authorized in time							
2014	25,950	50	1,297,500	21,231	58	1,231,398	47,181	2,528,898
TOTAL	72,273	50	3,613,650	26,067		1,497,378	98,340	5,111,028
Sales in US\$		\$2.27	\$164,256.82		\$2.64	\$68,062.64		\$232,319.45

Table 5

CAIFUL's earnings from mahogany grew significantly from 2011 to 2014 thanks to an increase in the amount of wood harvested and increased sales in international markets

With Rainforest Alliance technical assistance, CAIFUL has increased its production that is of export quality

Photo by
Charlie Watson



ensuring that the cooperative can continue operating after the titling process transforms land use and governance structures in Brus Laguna.

Market development

Another core area of support has been in market development. Rainforest Alliance has worked with CAIFUL on this front since 2006, first by facilitating a strategic alliance with North American Wood Products (NAWPI), a US business that acts as an intermediary for the Gibson Musical Instruments company. Gibson uses value-added, FSC-certified mahogany produced by UNICAF in the production of guitar necks.

CAIFUL sells all of its wood to UNICAF, whose functions include marketing the wood of its member cooperatives in both national and international markets. Working with both UNICAF and CAIFUL, technical assistance by Rainforest Alliance has focused on increasing the quality of CAIFUL's offer, in order to ensure greater penetration into preferred markets. Significant results have been achieved in this regard.

During the 2011-2014 period, CAIFUL increased the amount of wood sold into the international market from zero to 21,231 bf. Given the price premium of HNL 8, or about US \$0.37 per bf, that amounts to increased profits of more than US \$7,850. Equally important is the share of the harvest being sold into

differentiated markets. In 2012, about 17 percent of CAIFUL's harvest went to the international market. By 2014, that number had increased to 82 percent. Beyond maintaining CAIFUL's relationship with NAWPI, via UNICAF, Rainforest Alliance assisted in the establishment of 3 new alliances with national buyers for CAIFUL. Although the sale price remained the same, these alliances are with long-term buyers, whose assured demand creates the reliability of market and finance critical for an operation like CAIFUL.

While these figures reflect solid improvement, there are several key areas for increased market development that CAIFUL has identified, and that Rainforest Alliance continues to support the cooperative in achieving. First is the need to diversify production beyond mahogany blocks. Even though harvesting is very low intensity, a more diversified approach to forest harvesting is better for maintenance of ecosystem values; there is a risk that, over time, the sole reliance on mahogany could lead to high grading of the best genetic stock, if not depleting commercial volumes. A stronger focus on a wider diversity of species – including NTFPs – would also of course improve productivity and boost profits and employment opportunities.

Another is related to the production of value-added products on site. CAIFUL has an installation – financed with support from a Honduran government program – that would allow for processing lower-grade wood in finished products for local sale, e.g. construction materials, boat components, furniture. This would allow for maximized usage of wood output, and could expand the diversity of products to be harvested. However, to make this facility operational, it will be necessary to address both infrastructural and technical challenges. These are part of the next phase of support from Rainforest Alliance.

Finally, there is considerable potential for CAIFUL to more actively market its FSC certificate. Increasingly, international hardwood buyers are demanding FSC. The number of operations like CAIFUL with precious tropical hardwoods and a forest management system that is already certified are highly limited. This is also an area for increased technical assistance in the future. To date, Rainforest Alliance facilitated one new contact with a US-based buyer of tropical hardwoods, and a first purchase order was made with CAIFUL.

Achieving Scale to Increase Benefits

For most of the new opportunities for growth to be feasible – and therefore improved profits, household incomes and investments in social development – there will ultimately have to be a fundamental shift in how CAIFUL undertakes forestry operations. Presently, the cooperative does nearly everything by hand. With the exception of hand-held chainsaws and the outboard motors that power canoes up- and downriver to and from the concession, nothing is mechanized. This pushes up operational costs significantly, and severely limits the volume that CAIFUL



Value added processes can create employment and increase CAIFUL's earnings

Photo by Charlie Watson

can reasonable target to harvest. It is not economically viable for it to harvest anything other than the small amount of mahogany it can remove during a 30-60 day window, which is the typical length of the harvest season that CAIFUL can manage to finance. Unlike most of the other cooperatives in the Río Plátano, CAIFUL's concession is located in an area that, while presently only accessible via river for most of the year, could be feasibly accessed with year-round roads. Nearly all the harvesting coupes in the concession itself could be accessed by either river or a relatively low-impact network of access tracks and skid trails. Terrain in the concession, furthermore, lends itself to a much more highly mechanized operation.

For any of this to happen, a number of critical items must be assembled. First is resolution of the impending land use and governance questions to be raised by the titling process. Second is the need to secure the future of the forest management area within the new land use plan, and ensure community consensus to intensify forestry in order to defend the forest and produce more economic opportunity. Third is mobilizing the finance – from buyers, from government subsidy, and from private sources and innovative financial mechanisms. And fourth is building the technical and administrative capacity of CAIFUL to transform its business model.

Conclusions and Lessons Learned

Based on the analysis undertaken for this case study, and the years of support that Rainforest Alliance has provided to CAIFUL, the following main conclusions and lessons learned are advanced:

- During the period analyzed, CAIFUL moved from chronic unprofitability to enterprise solvency. In 2009, the year before project interventions began, CAIFUL posted losses of more than US \$13,000; in 2014, the cooperative had net profits of US \$28,500.
- CAIFUL has managed to improve enterprise performance through increased forest production, improved efficiency and quality, and better management systems related to compliance with cumbersome bureaucratic procedures.
- CAIFUL has steadily increased income from forest harvesting, chiefly through improved quality control and resulting penetration of premium markets. Over a four-year period, CAIFUL went from selling wood all of its wood into non-differentiated markets, to selling more than 80 percent of its harvest to an international buyer. This resulted in US\$7,800 in increased income.
- CAIFUL creates a significant number of jobs for both its members and the wider Brus Laguna community. For many of those employed, forestry work constitutes an important percentage of their annual income. Such contributions are particularly notable given the remoteness of Brus Laguna, high local poverty indicators, and the relative paucity of (legal) economic opportunities.
- In spite of a lack of scale necessary to maximize profits and benefits, CAIFUL has invested in steadily increasing salaries and incomes for workers, as well as promoting the uptake of new knowledge and skills among members and non-members to create new job opportunities.
- CAIFUL has worked to improve community participation, particularly among women. Over the years, women have gained access to higher-salaried, specialized jobs, and have held leadership posts in the cooperative.
- The cooperative has taken steps to increase transparency with the wider Brus Laguna com-

Dedicated to the memory of Alexander González (L), ICF forester, friend of the Río Plátano and advocate for community enterprise (1981-2014)

Photo by Carlos Sandoval



munity and the DIUNAT territorial council, although more remains to be done on this front.

- Given the concession's size and considerable standing timber resource, there is tremendous scope to build on these gains through diversification, value-added production and new buyer alliances. Holding FSC certification can assist CAIFUL in this transformation.

Recommendations

Finally, based on the above, a series of recommendations can be advanced, including:

- CAIFUL needs to urgently and proactively engage with Brus Laguna community authorities, the DIUNAT territorial council and other actors in the Muskitia to ensure a clear and smooth transition as Brus Laguna undergoes the indigenous land titling process.
- Once the future of forest governance and enterprise has been secured, CAIFUL leadership should work to build consensus among stakeholders for the intensification of forest harvesting in the concession area. Only through diversification, increased productivity, value-added and enterprise growth will the full potential for job creation be realized, and only through an economically attractive alternative with forestry will the mounting threats to Brus Laguna's forests be held back.
- If a consensus can be achieved with Brus Laguna leadership, CAIFUL should work with technical assistance partners, buyers, national subsidy programs and other stakeholders to articulate a plan for the intensification and diversification of forest harvesting in its concessions. This business plan should then be used to mobilize investment from both public and private sources to finance the transformation of forest enterprise in Brus Laguna.
- Diversification should focus on other hardwoods with solid market demand, as well as key NTFP species such as tuno and swa.
- The technical improvements CAIFUL has achieved in wood extraction, logging, sawmilling and managing surpluses provide a good foundation for a new phase to increase the value added to its timber. Opportunities that should be seized upon include milling of boards, creation of finished products for the local and national market, and production of charcoal from waste for local use.

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Focus groups were also held in the community of Brus Laguna, including:

- 9 CAIFUL cooperative members (6 men, 3 women)
- 7 Brus Laguna community members (non-members of CAIFUL; 4 men, 3 women)
- 20 workers, both cooperative members and non-members (13 men, 7 women)



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