



A regular series of notes highlighting recent lessons emerging from the operational and analytical program of the World Bank's Latin America and Caribbean Region (LAC).

## Innovative Training in Cocoa Agroforestry: The Farmer Field Schools of Nicaragua

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### *Introduction*

The World Bank, with the financial support of the Japan Social Development Fund (JSDF), is implementing the Alternative Indigenous and Afro-Descendants and Agroforestry Project (COCOA – RAAN) in the indigenous and Afro-descended (Miskito) regions of Nicaragua. The implementing agency, the Agro-forestry Coordinating Association of Indigenous Peoples and Farmers (*Asociación Coordinadora Indígena y Campesina de Agroforestería Comunitaria Centroamericana, ACICAFOC*), is a regional NGO “focused on seeking local socio-productive integration, promoting eco-development and community empowerment.” The Project’s objective is to strengthen the capacity of indigenous, Miskito, and mestizo organizations to produce and market quality cocoa in an economically and environmentally sustainable manner. The Project is designed to transform the environmentally damaging practices of cocoa agriculture to conserve the biodiversity, regenerate and sustainably manage forest resources, and improve farmers’ livelihoods. Activities include interventions to: (i) develop integrated management systems for agro-forestry on at least 1,000 cocoa small farmers; (ii) improve marketing to international fair trade and sustainable chocolate companies; and (iii) strengthen the social, commercial and environmental management capacity of beneficiaries. To reach the beneficiary community-based organizations and cooperatives, a Project-sponsored fund finances subprojects of up to US\$25,000.



### *Nicaragua’s Northern Atlantic Autonomous Region*

The implementation area is known as the “Mining Region” in the Northern Atlantic Autonomous Region (RAAN), one of the two Caribbean Autonomous regions created in 1987 and recognized for their multi-ethnic nature. The RAAN’s social, environmental, and political realities present some challenges for successful project implementation.

The region is home to about 80 percent of the indigenous peoples. The Mayangna (also known as Sumu or Sumo) communities served by the Project are divided into the Panamahka, Twahka and Ulwa ethno-linguistic subgroups, living primarily in remote settlements along the Coco, Waspuk, Pispis and Bocay Patuca rivers and the Río Grande de Matagalpa. The five municipalities are Siuna, Rosita, Mulukuku, Prinzapolka, and Bonanza.

The BOSAWAS Biosphere Reserve, some 728,434 hectares of La Mosquitia forest, is the largest rainforest north of the Amazon. Most of the remaining compact forest is in the Mayangna Indigenous Territories located in

BOSAWAS. Rapid forest clearing for livestock and crops in the agricultural frontier regions is resulting in sustained deforestation and undermining the country's best source of natural resources. It also threatens the only potential for indigenous peoples' most basic source of economic growth.

Long after the end of the war of earlier decades, the RAAN continues to suffer from frequent political disruptions, making it occasionally unstable and insecure for the farmers and project promoters. Monolingualism still prevails, especially among women.

### *The Farmer Field School Approach*

The Project is applying the Farmer Field School (FFS) approach to work with communities and small farmers to adopt land use planning and management practices that incorporate agroforestry, natural resource management, and biodiversity conservation. The FFS approach provides participatory training that is both an agriculture extension tool and a form of adult education. The FFS encourages participation of subproject participants and other farmers from the same or nearby communities. Between 20 and 30 farmers meet regularly during the course of a cropping cycle, guided by a trained promoter.

Most communities are in remote areas. Commutes are difficult and expensive. Most community members are also monolingual and have low levels of literacy. The FFS approach mitigates these disadvantages through visual and pragmatic techniques and a friendly environment, ideal for teaching people with low literacy levels and farmers with small and medium-size land holdings.

The first and most challenging task was to identify qualified trainers, or to train new trainers. At the *Universidad Nacional Agraria* (UNA), *Centro Agronómico Tropical de Enseñanza* (CATIE-Nicaragua), COCOA-RAAN trained promoters in methods to increase productivity. The promoters also received separate training in the preparation of indicators, monitoring and evaluation, and in the use of software and computers.

To create a comfortable learning environment, the Project hires indigenous and women promoters. Two promoters



attend to the communities; one fluent in Mayangna and another well versed in FFS. With this approach, the Project ensures the participation of indigenous peoples. The Project is also working to encourage the participation of women farmers in subprojects and in capacity building activities.

FFS's interactive learning method permits farmers to participate and conduct their own farm assessment and receive training program in response to identified problems. As a result, the farmers become "experts" on the specific topics that concern them. This experience is resulting in a community of cocoa farmers who share the same interests and can solve their own problems. The basic features of cocoa-based FFS are as follows:

- The FFS groups meet twice a month.
- The cocoa farm is the primary learning material and the meeting place.
- The educational approach is experimental and participatory.
- The sessions include a quiz or test.
- The session ends with questions, recommendations and a plan for the next meeting.

### *Costs and Benefits*

During the first seven months of implementation, 42 FFS sessions were organized in the five municipalities. During the training sessions, farmers learned about (i) plant varieties and their environmental and soil requirements, (ii) local varieties and new genetic material, (iii) agroforestry and diversification strategies, (iv) shading, (v) supplying nutrients and organic fertilization management, (vi) crop cultivation and maintenance, (vii) organic pest and disease management, (viii) harvesting, and (ix) post harvest treatment and processing. Farmers learned to apply this new knowledge in their efforts to rehabilitate or maintain crops, bring existing trees into better production, graft new plant material onto an old root system, or replant trees.

Costs and benefits vary. Costs are higher in remote communities because they lack appropriate infrastructure

Developed in the late 1980s by the United Nations Food and Agriculture Organization (FAO), the Farmer Field School approach was first applied in Indonesia to reach large numbers of farmers with basic scientific knowledge in pest management. The FFS approach now brings together concepts, methods, and techniques from a variety of fields to help farmers around the world learn new techniques, make informed decisions, and solve local problems.

and transportation. These communities need more technical assistance because of the low literacy levels, language background and a lack of previous training in cocoa-based agroforestry. In response, the Project hired an indigenous and a non-indigenous promoter to work with these communities.

Benefits also vary. Communities with previous experience in cacao-based agroforestry learn new techniques faster than communities with no experience. Although it is difficult to measure the lasting development impacts, there is evidence that FSS is stimulating group-cohesion. Crop managers are also experimenting with new production options, genetic material and techniques, and increasing their understanding of agroforestry; the farm is their own innovation laboratory. The expected result is an improved mix of inputs and better practices, leading to higher yields, reduced pesticide use and, higher farm profits.

### *Gender in Cocoa-based Agroforestry*

Economic opportunities are extremely limited for rural women. Moreover, fewer than 22 percent of the Project's beneficiaries are women. To address this issue, the COCOA-RAAN is piloting the creation of women-only groups. For example, a study tour for women members of the network was organized to visit cocoa farms and chocolate factories in Honduras, Belize and El Salvador. The expectation is that women working by themselves are more likely to participate—and the learning group will be able to grow faster. However, the working question is to what extent single-gender groups will become empowered in their community or organization even as they grow as a group.

So far, results vary. In the case of the Mayangna group, women were faced with the double burden of responsibilities at home and the subproject. Husbands often accompany wives to the single gender groups. Additionally, the groups had reputational responsibilities within their community.

The Project also trained a single gender-based group to produce chocolate. The women were members of a cooperative, which is also a beneficiary of the Project. However, a supervision visit discovered that the cooperative's board of directors had replaced the women and were using the funds to produce chocolate without the women's participation. The implementing agency and the Bank advised the cooperative to rectify these actions or it would be ineligible for more funds. This situation has been resolved.

The Project also created mixed-gender groups. The working question is to what extent men allow equal participation and to what extent women are ready to take such roles. Although results vary, tentative findings suggest that men

and women are better prepared to take on responsibilities if they have previous experience working in mixed groups. Promoters concluded that, because the cocoa farm is a family business, mixed-groups offer better opportunities for both genders to grow and become empowered. Including both genders allows for the implementation of a true gender approach.

### *Measuring Impact*

To measure impact, the Project is building a baseline database and an online monitoring and evaluation system ([www.monitoreo.acicafocnic.org](http://www.monitoreo.acicafocnic.org)). Using both formal and informal survey methods, baseline surveys collect information on (i) characteristics of the group or community based-organization, governance, composition by gender, education, technical assistance received, and geographical location, (ii) income sources, (iii) land (farm size, tenure, planning), (iv) crops and other production means, (v) agricultural risks and coping strategies, and (vi) farming field techniques (fertilizing, pest management, crop management, and genetic material used).

Supervision reports use farmers' knowledge and practices to measure the learning and capacity building impact of the FFS. With further training, small farmers are adopting land use planning and management practices that incorporate natural resource management and biodiversity conservation objectives.

As Project implementation progresses, production increases, and farmers' access to markets will improve. Early results indicate that the production of the farms has increased by about 30 percent. At least five of the largest community-based organizations are using improved genetic material. The genetic material used is from "elite trees" which produce large quantities of first-class cocoa. These plants are stronger, less vulnerable to disease, and yield twice or more than average trees. They can reach full productivity in around four or five years after planting.

### *A Successful Capacity Building Approach*

The COCOA-RAAN experience shows that, by applying a relatively small number of strategies, the Farmer Field School approach to capacity building can succeed in a variety of settings. These strategies should include, first, training a local promoter in the FFS approach to deliver the training. Local promoters can develop appropriate material and ensure that the regularly scheduled programs address the needs and capacities of local farmers. Second, to facilitate learning, training should take place in the indigenous language (oral and written materials). Farmers can easily share knowledge and express concerns in their native language. In the RAAN, training materials and manuals are in Spanish, Mayangna Matumbara, Mayangna Sirta, and Miskito. Finally, the participation of women small

farmers should be encouraged in single-gender and mixed groups. The project has been piloting:

- Adaptation of the organic compost and fertilizer to soil type and cocoa trees. The Organic Compost Manual (in preparation) will gather lessons learned with the goal of continuing to build the farmers' capacity.
- Comparative analysis between growing plants in nurseries and growing directly on the farm. Preliminary results suggest that plants grow faster on the farm if the soil is properly prepared with organic compost. This system reduces costs and time for the farmers.
- Combination of technical assistance and the FFS approach to improve the farmers' capacity. Technical assistance is the support provided to individual farmers to resolve a specific issue. FFS is a training program provided to groups of farmers, devoted to specific topics.
- FFS programs designed to meet the farmers' specific needs. Promoters assess soil quality and the condition of the farms. Some farms already producing cocoa are either old or were recently established. Other farms are moving from livestock or another type of production to cacao-based agroforestry. A second assessment determines the farmers' knowledge of cocoa production, agroforestry, and organic production.
- Recovery of land used for livestock in the BOSAWAS reserve buffer zone and conversion to cocoa-based agroforestry.
- Support of the Central American Cocoa Farmers, established in March 2012.

### Assessing Progress

COCOA-RAAN supports participatory approaches in all activities. The Project provides technical assistance to communities, cooperatives and community-based organizations to prepare subprojects. In this initial process, wider community and member participation is encouraged. To assess progress, the Project applies two complementary participatory monitoring and evaluation (M&E) tools, (i) organizing focus groups with members of a single subproject and (ii) organizing focus groups with members of all or several subprojects. These participatory exercises identify bottlenecks, needs, weaknesses, strengthens, and new ideas to improve Project supervision. The first modality allows for a deeper understanding of the needs



of the specific group and addresses the needs in more detail. The second modality creates interesting information sharing dynamics and allows mutual learning among all stakeholders (the subprojects, the implementing agency, and the Bank). The participation of all stakeholders, beneficiaries, the implementing agency, and the Bank has contributed to building trust in the farmer community.

The FFS approach builds the capacity to evaluate subproject performance. Farmers benefit from the training whether or not they participate in a subproject. FFS schools are also contributing to the consolidation of farmer groups and fostering the participation of women and indigenous peoples in the learning process. Going forward, the Project will continue disseminating impacts and experiences to improve the work of practitioners and to indicate ways this experience could be improved, scaled up and replicated.

### Web Sites

- <http://www.fao.org/nr/land/sustainable-land-management/farmer-field-school/en/>
- <http://www.acicafoc.org/en/>
- [www.catie.ac.cr/nicaragua](http://www.catie.ac.cr/nicaragua)

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