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MEXICO RURAL PROSPERITY AND CONSERVATION INITIATIVE

Final Report

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RPCI /FELIX RAMON BRAOJOS

Stefano Calabro of Latitud 16, one of SendaSur's tour operator partners, participates with other SendaSur members in an RPCI-sponsored activity to map out members' offerings. The activity allowed SendaSur to promote more effective collective marketing for its members.

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

RPCI / ENRIQUE ALATORRE GUZMAN

As part of RPCI's forestry program, Luis Alfonso Arguelles of Trópica Rural Latinoamerica works with a community member of Santa María de Chimalapas to define the community's permanent forest area as part of the extraction management planning process.

CONTENTS

ACRONYMS IV

EXECUTIVE SUMMARY I

INTRODUCTION 5

FORESTRY 9

COFFEE 17

TOURISM 23

CACAO 29

GREENHOUSE PRODUCTION 35

POLICY 43

FRONT COVER: Domingo Santiago of the Chichicapam community proudly displays his greenhouse tomato crop. The Chichicapam community has received consistent support from RPCI in the form of technical assistance and training.

RPCI / JASON HAGEN

BACK COVER: The beautiful region of Cinco Lagos is in a remote area of Chiapas, making communications for reservations difficult. SendaSur, a coalition of mainly indigenous-owned tourism operators organized by RPCI, has bridged this gap by collecting and coordinating reservations in San Cristobal de las Casas for tourists desiring to visit these special destinations.

RPCI / ENRIQUE ALATORRE GUZMÁN

ACRONYMS

AMSA	Agroindustrias Unidas De México (United Agroindustries of Mexico)
CEA	Centro de Estadística Agropecuaria (Center for Agricultural Statistics)
CECADESU	Centro de Capacitación para el Desarrollo Sustentable (Center for Training for Sustainable Development)
CNA	Comisión Nacional de Agua (National Water Commission)
CONAFOR	Comisión Nacional Forestal (National Forestry Commission)
CONANP	Comisión Nacional de Áreas Naturales Protegidas (National Commission of Natural Protected Areas)
COTAS	Comité Técnico de Aguas Subterráneas (Technical Committee of Subterranean Water)
ECOSUR	El Colegio de la Frontera Sur
FSC	Forest Stewardship Council
GET	Grupos Étnicos Tenejapanecos SSS
GOM	Government of Mexico
ITESM	Instituto Tecnológico de Estudios Superiores de Monterrey
MOU	memorandum of understanding
NGO	non-governmental organization
OEC	Organización Económica Campesina (Campesino Economic Organization)
PROFEPA	Procuraduría Federal del Medio Ambiente (Attorney General for Environmental Protection)
RPCI	Rural Prosperity and Conservation Initiative
SECTUR	Secretaría de Turismo (Secretary of Tourism)
SEDER	Secretaría de Desarrollo Rural (Secretary of Rural Development)
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Secretary of the Environment and Natural Resources)
SPOSEL	Sociedad de Productores Orgánicos de la Selva Lacandona SSS
TRL	Trópica Rural Latinoamericana A.C.
USAID	United States Agency for International Development
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

Between September 2004 and May 2008, USAID's Mexico Rural Prosperity and Conservation Initiative (RPCI) enhanced the capacity of rural associations to engage in market-driven economic opportunities that raise productivity while conserving natural resources.

By working with sector specialists and local organizations, RPCI identified best practices for conservation and economic development, strengthened community-based management of watersheds and natural resources, and expanded cooperation with the government of Mexico to improve sustainable rural development in: Lacondona and the Highlands regions of Chiapas; the Sierra Norte, Sierra Sur, and Chimalapas regions of Oaxaca; and in Tabasco State.

Oaxaca and Chiapas are among Mexico's poorest states. To create opportunities in these areas, RPCI selected activities driven both by national and international market demand.

Project staff and consultants performed diagnoses of conservation-oriented value chains in cacao, coffee, ecotourism, greenhouse vegetables, and forest management for wood products to determine how best to orient successful interventions within these value chains.

Its work with greenhouse tomato farmers has increased the production area, productivity, and selling prices while cutting water usage by 30 percent by project beneficiaries in the arid Central Valley of Oaxaca. The project worked with producer organizations to improve harvest quality and yields of coffee and cacao, benefiting nearly 4,500 producers.

LOCATION OF RPCI PROJECT ACTIVITIES

RPCI's interventions at the national and state levels provided a platform for replication and sustainability of the more localized project activities. RPCI supported the National Protected Areas Commission's development of an ecotourism policy for 8.6 million hectares, encompassing the national protected areas system. The project also supported a regional water conservation services cooperative to improve services in the Central Valley of Oaxaca.

RPCI / SALVADOR GONZALEZ HERNANDEZ

Thanks to the reservation system developed and installed through an RPCI subcontract, SendaSur is now able to make reservations on behalf of their members. As a result, tourists can confirm tours and lodging at destinations such as Laguna Nahá in La Selva Lacandona.

RPCI / FELIX RAMON BRAOJOS

As members of the Yetzucum community have learned through their work with RPCI and AMSA, the sale of high-quality coffee is only possible when quality coffee cherries are selected for physical attributes such as color before processing.

RPCI /FELIX RAMÓN BRAOJOS

Julia Ruíz Gutiérrez and Enedina Cruz Navarro, trained cuppers from the municipality of Oxshuk, demonstrate cupping techniques to international and local authorities during the inauguration of the Yoshib cupping laboratory.

CHAPTER ONE

INTRODUCTION

FORTALECEMOS EMPRESAS RURALES QUE CUSTODIAN LA NATURALEZA

The RPCI project team abided by the following mission statement:

We foster the conservation and sustainable use of natural resources to improve the quality of life of rural residents by promoting sound land use management and developing and strengthening economic enterprises.

In parts of Mexico, acute poverty often leads to inefficient use of resources, which amplifies environmental pressures in regions of high biological diversity and fragile ecological stability. Through the Mexico Rural Prosperity and Conservation Initiative (RPCI), USAID addressed both issues by boosting local organizations' capacity to raise productivity and incomes without misusing natural resources.

RPCI worked with coffee and cacao producers, greenhouse farmers, tour operators, and communities engaged in forestry and ecotourism to increase the efficiency and profitability of their operations while at the same time addressing any underlying threats to biodiversity. The underlying principle of RPCI's approach was that by increasing the profitability and efficiency of natural resource-based economic enterprises, pressure on biodiversity can be effectively reduced.

RPCI was part of a larger U.S. strategic objective to reduce poverty and increase rural enterprise activity in Mexico, and, at the same time, contribute to ongoing conservation efforts and provide a great opportunity to improve the underdeveloped coffee and cacao sectors and the marketing of FSC-certified timber in Mexico.

Mexico has among the highest levels of biodiversity and endemism in the world. It holds 10 percent of the world's species in just one percent of the planet's surface. Southern Mexico, where the project was located, has particularly high levels of poverty due in part to environmental degradation and unsustainable resource use. RPCI proposed that economic development based on conservation-oriented

RPCI'S PRIMARY TASKS

Support Intermediate Result 2.4, Improved management and conservation of critical watersheds, under USAID's Central America Mexico Regional Strategic Objective No. 2 Economic Freedom: Open, Diversified Economies through the following tasks:

Task 1: Enhance the enabling environment to foster conservation of natural resources and promote economic development. Work at the national and sectoral policy levels to address key bottlenecks and take advantage of opportunities to generate macro-level benefits for project beneficiaries.

Task 2: Identify best conservation practices that focus on green economic initiatives. Deliver interventions at the site-specific level to individual business units and producer assocations to disseminate best practices and strengthen rural producers.

Task 3: Improve watershed and natural resources at the community level. Scale up successful site-level interventions to increase regional adoption of best practices.

Task 4: Expand rural prosperity primarily through new markets. Expand impact and strengthen the capacity of collaborating institutions through co-financing of initiatives through the Rural Prosperity Fund.

value chains in key areas could stall some of those trends. RPCI added value to other components of USAID's environmental program in Mexico by strengthening community capacity to manage natural resources, instill best conservation practices, develop market linkages and local entrepreneurial capacity, and foster an enabling policy environment.

The stakeholders in that program include the World Wildlife Fund (WWF), U.S. Forest Service, Rainforest Alliance, Conservation International, The Nature Conservancy, PA Consulting, Fondo Mexicano para la Conservación de la Naturaleza, and Chemonics International.

RPCI included a Rural Prosperity Fund, a flexible and simple mechanism to respond to new opportunities by dispersing grants of $5,000 to $45,000, particularly to promote local economic growth by improving processing plants and capital equipment. This gave RPCI access to community groups, cooperatives, producer associations, and other well-organized rural groups. As part of the grant-making process, an environmental screening checklist and mitigation tool was developed to ensure that infrastructure investments incorporate environmentally sound production techniques to reduce environmental externalities.

RPCI was ambitious and multifaceted. With a limited budget, it worked in several areas simultaneously: cacao, coffee, ecotourism greenhouse production, forestry, and policy change. The project implemented activities by means of subcontracts with local and international organizations, short-term contracts with sector specialists and consultants, training to strengthen community actions within value chains,

and acquisition of leveraged funds from private and public institutions. RPCI's cost-sharing strategy leveraged more than $555,000 in external funding.

Working with indigenous community enterprises posed a unique set of challenges. RPCI technical staff had to be patient and willing to adjust to their rhythm and style of decision-making. Language was also an impediment, as lengthy conversations among beneficiaries took place without the technical staff understanding the contours of their discussion or how the community was making decisions.

Additionally, local election cycles impacted some interventions deeply when they resulted in the wholesale replacement of community enterprises' management bodies.

TABLE 1
RPCI at a Glance

Sector	New Hectares Under Improved Management (ha)	Direct Beneficiaries	Individuals Trained	
			Males	Females
Coffee	1,011	841	150	37
Cacao	5,480	2,407	165	68
Greenhouse Vegetables	18	49	177	48
Forestry	58,007	1,610	30	2
Tourism	11,153	2,567	402	193
Policy	56,259	N/D	17	6
Total	**131,928**	**7,474**	**781**	**354**

RPCI / ENRIQUE ALATORRE GUZMAN

RPCI has been working with community workers to improve milling efficiencies in Ixtlán de Juárez. Results from milling trainings have seen production of class 1 and 2 lumber rise from 17 percent to 54 percent, which allows the community to receive a higher market price for its board wood.

CHAPTER TWO

FORESTRY

In several RPCI communities, sales from forestry products and remittances from family members working in the United States are the sole sources of income. There is little opportunity for agriculture in those areas, as the mountainous landscape is dominated by pines and oak. To help stem the outflow of immigrants and increase the communities' stake in the forest, RPCI relied on the region's natural advantages for wood production. RPCI's activities were focused on six forest communities in the state of Oaxaca: Ixtlán, Xiacui, Comaltepec, Textitlán, San Pedro el Alto, and Santa María de Chimalapas.

Under RPCI, producers took their lead from markets to increase their competitiveness in value chains that were compatible with conservation goals. This was true of forestry as well as other sectors. In the Sierra Norte and Sierra Sur of Oaxaca, RPCI worked with five communities to improve their sustainable extraction of lumber, and just as important, to help them produce wood products that have reliable markets. All of these communities (Ixtlán, Xiacui, Comaltepec, Textitlán, and San Pedro el Alto) had existing SmartWood certifications under the Rainforest Alliance scheme and forest management and chain of custody certification under the Forest Stewardship Council (FSC).

Wood from Oaxaca is very expensive due to high extraction costs and processing inefficiencies, so it is often not competitive in national or international markets. Fortunately, through fairly simple measures, these inefficiencies could be minimized. RPCI staff emphasized the high quality of the wood (mostly pine and oak) and targeted specialized buyers who wanted high-quality products. Similarly, the United

TABLE 2
Forestry Results

Indicator	Community	Unit of Measure	Baseline	Results	
				2007	Anticipated 2008[1]
Sales of finished and certified products	Comaltepec	USD	0	$153,375[2]	$425,323[3]
	Xiacui	USD	$144,761	$409,480	$595,451[4]
	Ixtlán	USD	$952,380	$1,276,480	$1,962,194[5]
	Chimalapas	USD	0	0	$259,440[6]
Totals		**USD**	**$1,097,141**	**$1,839,335**	**$3,242,408**
Volume of board wood produced	Comaltepec	mbf[7]	374	0[8]	424[9]
	Xiacui	mbf	190	446	606
	Ixtlán	mbf	625	0	702
	Textitlán	mbf	249	0	278
	Chimalapas	mbf	0	0	272
Reduction in extraction costs	San Pedro el Alto	USD/m^3	10.5	8.47	8.47
Area under forestry management plan	Chimalapas	Hectares	0	27,500	27,500
Leverage of third-party support	Comaltepec	USD	0	$15,110[10]	$0
	Chimalapas	USD	0	$74,609[11]	$16,619[12]
Totals		**USD**	**0**	**$89,719**	**$16,619**

1 As extraction was only starting as RPCI activities were closing in 2008, actual data was not yet available. RPCI, with the help of information gathered by our forestry consultants, was able to estimate 2008 results based on information known to date.

2 An exchange rate of 10.5 Mexican pesos to the dollar was used for all calculations.

3 This calculation is based on the volume of wood currently available in Comaltepec for wood moldings and the current market price of moldings.

4 Estimate based on volume of wood and current market prices for different quality grades. Xiacui went from producing only 25% first grade boards to 60%.

5 This includes sales of furniture produced in the RPCI-supported varnishing room and increased income from sale of higher quality boards.

6 This is based on the sale of 644 m3 of unprocessed lumber that will be cut and sold in 2008 pending the approval of the community's forest management plan.

7 Thousand board feet (mbf).

8 RPCI did not begin work with the communities of Comaltepec, Xiacui, Ixtlan, and Textitlan until 2007 when baselines were established.

9 All expected results for 2008 are based on calculations from known volumes of wood and established milling coefficients.

10 Funds from CONAFOR to cover 50% of the purchase costs of the molding machine for Comaltepec.

11 Funds provided by CONAFOR and SEDER to design the Forest Management Plan in Santa Maria de Chimalpas.

12 Funds from Fondo Oaxaqueño para la Conservación de la Naturaleza to complete environmental impact assessment in Santa Maria de Chimalapas.

States Forest Service and other consultants provided technical assistance to improve drying, milling, and sawing efficiencies. The project removed bottlenecks by identifying constraints within the value chain and finding ways to address them. Finally, operational production, business, and marketing plans were developed under RPCI for all five forestry communities in the Sierra Norte and Sierra Sur of Oaxaca.

Not all communities had sufficiently sophisticated facilities. They required work from the ground up for interventions in milling, sawing, or drying. The success of these community enterprises hinges on management and organization: specifically, getting community members to designate a full-time manager who is responsible and accountable for the facility's success.

One complicating factor was the regular rotation of community leadership, and the different players involved, such as the *mesa directiva*, the *consejo de vigilancia*, and the *comisariado de bienes comunales*. Navigating those relationships required a great deal of patience, time, and respect for local customs, and the project team adjusted timeframes accordingly.

As an example of how RPCI helped to remove bottlenecks, the community of Ixtlán solicited grant funding from RPCI to add a varnishing module to an existing furniture factory. Before RPCI, this community had been varnishing the furniture by hand, which produces a lower quality product at a slower rate. With the varnishing module in place, the operation doubled its productivity and saw a 34 percent increase in its revenue from sales of school furniture to the local board of education.

Ixtlán is an excellent example of the potential that exists in the Oaxacan forestry sector: with a small and quiet investment, RPCI helped the community develop finished products that have a reliable and lucrative market. As a result, the community has more jobs to offer young people to stay and settle down in the community. In the Sierra Norte, productive forestry chains are better developed, and RPCI staff have helped beneficiaries understand where the links can be improved. This understanding is integral as time beyond the life of the project will be needed to implement all the required changes.

The observed increase in productivity realized with RPCI's support reduced a tendency to harvest substandard trees to make up with volume what could not be achieved by efficiency, and reduced the impact on biodiversity by reducing the area under active extraction.

In Santiago Comaltepec, RPCI grants funds helped to acquire a five-bit molding machine for the community, design the layout and installation of the new work area surface, and upgrade the electrical capacity to accommodate new equipment. Before this intervention, the community was mostly extracting and selling raw logs, complemented by the sale

of air-dried boards. RPCI also facilitated an agreement between the community and a private sector buyer and processor, La Asunción, to provide training and a market for molding products. These products have market potential throughout Mexico, and possibly in the United States.

The community of Xiacui benefited greatly from RPCI's support at the "Mexico, Inland" Expo Forestal held in Boca del Río, Veracruz, in September 2006. RPCI helped Xiacui create marketing materials for this event and subsequent business workshops organized by RPCI, which resulted in $27,185 in additional sales of certified wood products produced by the Xiacui community. Before RPCI, Xiacui was struggling to show its product.

The Chimalapas region, in contrast to the Sierra Norte, is a complicated territory, with serious problems of illegal logging and undefined boundaries with other communities and even between states (Oaxaca and Chiapas). This situation reflects the tragedy of the commons, which neither the government nor the community members have been able to control successfully. This has led to serious internal fights and divisions within the community. The Procuraduría Federal de Protección al Ambiente (PROFEPA), in fact, characterized the region as one of five "ungovernable" areas in Mexico.

The community of Santa María de Chimalapas has legal authority to extract 15,000 cubic meters of wood per year but has primary resources available to sustainably extract ten times that amount. However, without a cohesive community vision for a forestry enterprise, Santa Maria de Chimalapas would not be able to establish a management plan for the approval of increased extraction.

RPCI joined other organizations already working in the region, WWF and CONANP, and after two years of dialogue with the Santa Maria de Chimalapas community, defined mutual interests and established a common direction for the management of their forests.

Part of the project's approach was to focus on the sustainability of the community's economic needs. Improving extraction of existing approved areas before helping the community examine the larger social and economic issues at play would have hampered chances for sustainable change within the community. Sound and sustainable management of forest resources is the way for this community to achieve its economic development objectives and protect the biodiversity of its land.

Working closely with the *comuneros*, and after several participative workshops held with all the different actors in the forestry value chain, the community assembly decided by consensus to establish 55,000 hectares as Permanent Forested Area. Ten percent of this surface will be dedicated to conservation and the rest to forest harvest under authorized management plans.

CABLE EXTRACTION: IMPROVING EFFICIENCY AND PROTECTING THE FOREST

In San Pedro el Alto, RPCI helped the community establish a new means of extracting felled wood. The system uses a suspended cable system that decreases extraction costs by 20 percent and significantly decreases negative environmental impact on standing forests and the forest floor by eliminating the need to drag logs out on the forest floor. This system greatly minimizes the impact to ground vegetation and also standing trees that are not being felled. The community of Ixtlán is now seeking the means to replicate this extraction system in their community.

The outcome of this approach was successful. RPCI, through a subcontract with Trópica Rural Latinoamericana (TRL) and US$32,300 leveraged in public funds from CONAFOR, assisted in the development of the Santa María Chimalapa Forestry Management Unit, a forestry management program for 5,000 hectares of community lands, and an annual forestry operating program for 50 hectares.

RPCI also helped to leverage $34,650 from SEDER, CONAFOR, CONANP, and the Fondo Oaxaqueño para la Conservación de la Naturaleza to develop strategic training, purchase needed equipment, and develop the environmental impact assessment needed to have extraction approved by SEMARNAT within the community lands.

ENVIRONMENTAL CONSIDERATIONS

As previously described, the primary aims of the RPCI project were two-fold: increase rural incomes and help these same communities to better conserve their natural resources. Timber extraction in natural forests when not properly managed can obviously do much more harm than good to the natural environment. In the case of the Sierra Norte and Sierra Sur of Oaxaca, the project was careful to select communities that had already established a commitment to properly managed timber extraction through SmartWood and FSC certifications. The management plans required to maintain these certifications protect and conserve the natural environment in these communities while allowing them to benefit from these resources.

RPCI's interventions in these areas were not focused on extracting more wood from these forests but to make more out of the wood already being extracted and, in the case of San Pedro el Alto, to minimize the impact of the extraction process through technical innovation (see text box at left). The driver behind this strategy was the idea that if greater profits could be made without extracting more timber, these communities would not need to increase their areas under extraction to meet their economic needs. Thus, a properly managed and efficient community forestry enterprise creates a win-win situation for the community in which their incomes increase without damaging their natural resource base.

Due to the significant amount of forested land and biodiversity within the Chimalapas region, it was imperative for RPCI to work to stabilize the amount of standing forest via proper forest management plans and a strong community group to enforce these plans and protect against illegal logging. Without these measures, illegal logging surely would continue with extreme detriment to the community's forests. Thus RPCI's efforts again were not to fell more trees, but to help the community create a sustainable way to advance their forestry efforts and help bring this community into the legal timber market. At the time of this report, the official approval

SUCCESS STORY
Indigenous Groups Protect Rainforest

RPCI / ENRIQUE NATORE GUZMAN

A trained forestry technician in Santa María de Chimalapas records a GPS point as part of the community's work to establish a forest management plan for its community lands. The technicians worked closely with other area residents to introduce them to the work being done in their community.

The 400,000 hectares of rainforest surrounding Santa María de Chimalapas, Oaxaca, is one of the most diverse ecosystems in Mexico, harboring many endemic species of fauna and flora. Unfortunately, the expansion of livestock and illegal cutting of trees in recent years have jeopardized the forest.

The Zoque indigenous group has long inhabited Santa María de Chimalapas, and while the community has owned the land for many years, it had never previously agreed to implement a plan to protect and use the land in a sustainable way.

The people of Santa María de Chimalapas, the government of Mexico, and RPCI knew it was important to both protect the rainforest and generate income for the community while abiding by its legal land management plan. Through technical assistance, RPCI helped the assembly of *comuneros* reach a consensus to formalize a plan for the protection and sustainable harvest of the forest.

After nearly two years of meetings and assistance, the assembly entered into an historic legal agreement, formalizing a protection and management plan that established 55,000 hectares as a permanent forested area, in which up to 60 timber species can be legally harvested. Nearly 10 percent of that area is protected, and is hence excluded from harvesting.

With RPCI's assistance, the community not only formalized a plan, but created a forestry protection and management model that is applicable to any tropical forest in the world. Part of the model involves continued technical assistance, which USAID currently finances. More than 40 community members have been trained and educated in forestry inventory and management by two permanent forestry field technicians placed in the community.

With the sustainable forestry plan in place, the communities are reaping the benefits of increased market access and higher revenues. The profits generated from legal timber sales finance new projects in the community and help maintain current infrastructure. More importantly, with assistance from RPCI, the community has also addressed its most pressing need: protection of the rainforest.

from SEMARNAT for the community forest management plan was pending the submission of the environmental impact assessment that was being developed partially with RPCI funds.

LESSONS LEARNED

Lesson One: It is important to develop autonomous community forestry companies with a firm management structure so they can accumulate experience and professionalize their ranks while also being accountable to the community assembly. For example, the way authority is exercised in most communities within the Sierra Norte and Sierra Sur means that when office-holders change, the processes begun by their predecessors are lost and new accords have to be built, and reconstructing past efforts is not always possible.

This lesson helped orient RPCI's strategy in Santa María de Chimalapas, but it was not possible to address them fully in other communities. As a result, when elections were held in October 2007, great advances in the community of Comaltepec were stalled completely by a change in the governing body of the community forestry enterprise.

Lesson Two: A local group that is engaged in forestry issues can keep events moving forward with appropriate direction and leadership. In Santa María de Chimalapas, an active group of young people interested in forestry activities are keeping these issues alive, and their opinions have been heard in the municipal assemblies. That these issues are being discussed (occasionally in heated conversations) makes it possible to reach agreements in pursuit of the common good.

Much remains to be done, but within the community and among governmental and nongovernmental actors, the results to date are favorable when there is an energized body in the community to keep efforts moving.

Lesson Three: Domestic demand for Mexican wood products is increasing. To take advantage of this opportunity, more business development training is needed. However, given the complexities of working with the forest communities, it is advisable to bring private-sector interests into enterprise development, such as in the case of Comaltepec, where La Asunción, a wood product buyer, is working with the community to ensure that buyer standards are understood and met.

RPCI / JASON HAGEN

Roberto Hernández Liévano demonstrates the efficacy of the de-pulping and washing modules at the inauguration of the wet mill in the municipality of Yetsukum.

CHAPTER THREE

COFFEE

RPCI's efforts in the coffee sector were oriented in three coffee-producing organizations in Chiapas: SPOSEL (Sociedad de Productores Orgánicos de la Selva Lacandona or Society of Organic Producers of the Lacandona Jungle), GET (Grupos Étnicos Tenejapanecos Sociedad de Solidaridad Social or Tenejapaneco Ethnic Groups Social Solidarity Society), and La Comon (Comon Yaj Nop Tic Sociedad de Solidaridad Social or Comon Yaj Nop Tic Social Solidarity Society). They were selected because of their interest in improving production and post-harvest techniques, proximity to natural protected areas, and established alliances with important non-governmental actors in the Chiapas coffee sector.

These groups represent approximately 600 coffee producers cultivating some 1000 hectares. Via the small grants program, RPCI co-financed the purchase of eight wet mills, solar drying systems, wastewater management systems, and cupping labs for these community organizations in order to overcome important limitations on coffee processing, value-added interventions and environmental management. Three of these grants were formally presented during a visit of U.S. Ambassador to Mexico, Antonio Garza — accompanied by Juan Sabines Guerrero, Governor of the State of Chiapas, and Karen Hughes, Undersecretary of State for Public Diplomacy, on February 13, 2007.

The grants made it possible for these communities to acquire coffee milling modules, laboratories to check coffee quality, and wastewater treatment systems to treat effluent from coffee processing. This infrastructure combined with training programs and ongoing consultancies

created an integrated strategy to guarantee quality control programs within the communities, and to subsequently improve negotiating positions and command a better price. The project provided training and technical assistance to the three beneficiary organizations in the operation of the milling modules, prepared a post-harvest operations manual, and created technical posters promoting proper post-harvest practices to ensure that the coffee harvested is in optimal condition for processing.

The participating communities had been cultivating coffee for years, but their technology and knowledge of the value chain was limited. For example, prior to RPCI's involvement, they often sold unprocessed green coffee and did not understand that quality beans command a higher price. Thanks to RPCI's technical assistance and funding, participating farmers now have conveniently located collection centers with simple laboratories. There, a trained member of the community helps determine the quality of the beans, weighs them, and provides a receipt, which the farmer takes next door to be paid. During harvest, a truck visits the collection centers every day, guaranteeing that the beans are taken swiftly to the roasting facilities. While this appears a seemingly simple process,

TABLE 3
Coffee Results

Indicator	Unit of Measure	Baseline	Results	
			2007	2008
Value of total sales	USD	$419,307	$495,527	$610,000
Price received by the producer per unit of coffee produced	USD/100 kg cherry	30.05	34.61	57.14
Organic fertilizer applied (vermicompost)	Tons	20	20	20[1]
Volume of coffee sold as specialty	qq green / cycle	2,491	3,405	4,500
Leverage of third-party support	USD	0	$63,700[2]	$142,000[3]

1 As the vermicompost projects that were developed through a RPCI consultancy will take at least three years to provide results, no additional organic compost was applied as a result of RPCI's activities.

2 Funds provided by CONCAFE ($40,000), AMSA ($20,000), and community beneficiary groups ($3,700).

3 Funds provided by CONCAFE ($40,000), AMSA ($45,000), Secretariat of Agrarian Reform ($50,000) and community beneficiary groups ($7,000).

prior to RPCI's effort there was little to no quality control or documentation being kept at the collection centers. This situation made quality control and traceability almost impossible, complicating further the opportunities for these communities to command a higher price for a quality product.

Agro-Industrias Unidas de México (AMSA) was the most important partner for the coffee work. As the biggest and most powerful coffee buyer in Mexico, its business clout and technical know-how were appreciated by the beneficiaries and valued by project staff. Coffee production in Chiapas, although well known outside of Mexico, had passed through a lull, and RPCI's work with AMSA helped to reinvigorate participating communities. AMSA helped install centralized wet-milling operations and apply best management practices to improve plantation yields and the quality of processed coffee by providing direct technical assistance to communities.

To work a bit further along the coffee value chain, RPCI also initiated specialized coffee cupping training for ten selected cuppers from the three primary beneficiary organizations and carried out three community-wide cupping demonstrations to promote the production and processing of quality coffee. These cuppers continue to provide valuable feedback to their communities to refine both production and processing procedures to further improve the quality of their product. While first a bit skeptical of the ability of these cuppers to not only sense specific properties of the coffee, but to suggest improvements in production, the communities have fully embraced their abilities. La Comon has begun paying one of the RPCI trained cuppers for his services to the enterprise.

The ability of RPCI's beneficiary organizations to truly compete in the global coffee market was also dependent on strengthening the business skills and improving the organization of these community-based enterprises.

To prepare these communities for more intensive training from the Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM), the RPCI project accountant trained 23 coffee cooperative staff in basic accounting and bookkeeping to help them better establish baselines for sales and profits. This foundation in basic business skills was followed up through a subcontract with ITESM to provide intensive business training to the community groups. This course consisted of 48 total hours of workshops and covered topics from human resources management to strategic business planning.

ENVIRONMENTAL CONSIDERATIONS

The processing of coffee, like many other agricultural products, creates various negative externalities that must be addressed to maintain sustainable production. RPCI looked for creative and innovative ways to help the community coffee enterprises deal

COFFEE TALK, WITH THE GOVERNOR OF CHIAPAS

In an event held at the AMSA warehouse in San Cristobal de las Casas in February 2007, the Governor of Chiapas, Juan Sabines Guerrero, said of RPCI's interventions with AMSA, "These programs have changed the lives of many people and have positioned Chiapas as a new player in the specialty coffee market, and that gives us much pride, since with these efforts we bring Chiapas to the rest of the world."

with the two main byproducts of coffee processing: pulp and *aguas mieles*. The pulp separated from the coffee bean during the depulping process in many cases is simply discarded near the processing facility which can create contamination if left to ferment in the open.

RPCI financed a consultancy to help local communities assess their ability to use vermicompost methodology to create an organic fertilizer for their coffee plantations. Additionally, the consultancy went further to develop project proposals to create microenterprises to sell this fertilizer to other producers. Three of these projects have been accepted by the Secretaria de la Reforma Agraria for funding.

However, as it can take up to three years for vermicompost systems to stabilize, RPCI has helped communities compost the pulp using a system in which the compost is seeded with mycelium.

Most dangerous for water supply in coffee producing regions are the *aguas mieles* that are basically the liquid byproduct of the fermentation process. Untreated, these residual waters can poison local water supplies due to a very high pH. RPCI consulted with USAID's clean production project managed by PA Consulting to define a best strategy for the treatment of these waters. Two options were pursued: biodigestors and Geotubes. Two biodigestors were installed in La Comon under the Clean Production and Renewable Energy Component of the Environment Program implemented by PA Consulting.

At the other wet mills supported by RPCI, the project installed Geotubes. Geotubes are polypropylene mesh bags filled with a compound that filters waste from water. This is very simple technology that requires little upkeep and maintenance. Both the suppliers of the Geotubes and ECOSUR have undertaken water quality testing which indicates that these are a viable option to treat *aguas mieles* produced at the wet mills and thus protect local water supplies.

LESSONS LEARNED

Lesson One: When buying equipment, it is necessary to capture specific purchase terms in writing to have legal redress should problems arise with equipment operation, delivery times, delivery condition, or operator training. Buying equipment engineered for a specific function rather than with the intention of modifying it to meet project needs is advisable.

The installation of the wet mills for RPCI's beneficiary communities was delayed as most of the original equipment had to be returned to the vendor due to its poor quality and poor construction. Furthermore, the installation of the appropriate wet mill equipment required significant technical assistance and labor not provided by the supplier.

Lesson Two: Promoting change in an organization's technical practices and operating cul-

ture is a long-term effort that requires weekly monitoring by the activity manager in order to create awareness of responsibilities and clear up questions. One must select partners carefully and record expected activities/outcomes in writing regardless of the time that negotiations might require. In the long run, such an approach will take less time than will the clarifications necessary to correct errors or misunderstandings and may avoid subsequent financial losses.

RPCI underestimated the needs of its beneficiary organizations. Progress would have been much faster and results more significant had there been additional resources available to support the day-to-day activities of these organizations.

Lesson Three: Beneficiary organizations should be selected based on their technical and administrative abilities to meet a standardized set of criteria, and the institutional strengthening of the organization should start as early as possible. While truly committed to improving the quality of the coffee being produced, the organizational capabilities of RPCI's coffee producer organizations varied so tremendously that interventions had to be completely restructured to meet the specific needs of each organization, including some of the weaker ones. As a result, the project was faced with the challnge of bringing these groups up to a basic level of administrative organization to keep interventions moving forward.

Lesson Four: Administratively and technically advanced organizations are models for organizations that are less so. Local leaders and progressive producers trained to facilitate extension services should be part of a plan to train local groups in technical topics. RPCI did not take full advantage of the abilities of the more advanced producer groups to act as trainers for the less developed groups. Cross-fertilization between the beneficiary groups could have produced interesting results and relieved some of the pressure on RPCI's limited resources to help these groups along.

Lesson Five: At the outset of a project, staff should develop strategic plans that identify specific products and services and business plans that identify appropriate strategies for diversifying markets and clients. Since the business planning component for the beneficiary groups came out at the end of the project, there was little time to assist the communities with implementation of the completed plans.

RPCI / FELIX RAMON BRAOJOS

Stefano Calabro, a guide with SendaSur tour operator partner Latitud 16, leads tourists through Cinco Lagos. RPCI has supported SendaSur in the marketing of these sites to increase revenues for local communities.

CHAPTER FOUR

TOURISM

Oaxaca and Chiapas are important tourist destinations, drawing Mexicans and foreigners to enjoy temperate climates, rich history, colonial architecture, and indigenous traditions. The sometimes stunning geography and biodiversity also make them strong candidates for ecotourism, a way for visitors to enjoy the natural landscapes and bring money into the local economy without disrupting ecosystems or cultural practices.

Despite the abundant natural and cultural tourist offerings in southern Mexico, travelers have often had difficulty planning their vacations, especially in Chiapas, because no cohesive tourist network existed, and tourist offerings have not always been clearly marketed. There were also longstanding tensions between tour operators and community-based tour operations, which RPCI attempted to address through SendaSur, an historic coalition between 16 indigenous-owned and operated tourism sites and four private tour operators based throughout Chiapas. SendaSur now offers a one-stop reservation center in San Cristóbal de las Casas, where tourists can choose among several vacation plans and book reservations in advance, previously a service unavailable in these communities.

Gathering such disjointed members to contribute 8,600 Mexican pesos apiece for start-up of SendaSur was a big step. Some members are based as far as eight hours away, and their varied levels of development and popularity with tourists created the potential for conflict. The largest community member, Guacamayas, has sales four times larger than those of the second biggest member. More remote destinations, without a well-

known anchor to draw tourists, have had a harder time getting sales through SendaSur.

These challenges aside, based on a RPCI funded consultancy, the organization of these disparate groups was seen as integral to their additional success and in some cases survival. RPCI helped SendaSur through each stage of its development from foundation, to work plan creation, to new product development through consulting services for organizational strengthening and funds to maintain office space and a full-time manager.

SendaSur has been using the success of some members to help advance development in some of the lesser known tourist communities. The certification process of five members to the new Mexican standard for tourism sustainability, NMX-AA-133-SCFI-2006, has been used to teach the other members how to strengthen their environmental qualifications in order to become certified, and attract tourists that seek out environmentally friendly sites.

The president of SendaSur, elected by his peers, often reminds members that Guacamayas was not always a star performer, but it was willing to make the changes necessary to draw more visitors.

SendaSur's biggest hurdle has been local reluctance to accept tour operators as a part of community-based tourism. Historically, tour operators functioned apart from local communities,

TABLE 4
Tourism Results

Indicator	Unit of Measure	Baseline	Results	
			2007	Through March 2008
SendaSur sales	USD/year	$8,000	$85,155.29	$13,847.43[1]
Strengthening of a regional tourism organization (new products)	products	12[2]	1	0
Leverage of third-party support	USD	0	14,250[3]	0

1 A conservative estimate for 2008 shows sales for SendaSur at $55,389.71 for the year. Sales in dollars are based on an exchange rate of 10.5 pesos per dollar.

2 The original baseline calculated the number of products for each individual SendaSur tourism site. SendaSur decided in 2007 to only pursue the development of multi-product sites instead of multiple single-product sites in order to improve their diversity of offerings to tourists. Only one such site was developed, Rio Cedro.

3 This amount was received from the European Union for working capital.

and it is commonly believed that the communities do not receive as many benefits from tourism as they should. Because the four operators that are members of SendaSur are not indigenous-owned, relations with some government agencies focused on tourism in indigenous communities have been fractious.

SendaSur and the project took great pains to explain that SendaSur is a collective endeavor, a network, and is not owned by any group in particular. Rather, it is owned by all of the partners. It is a value chain, and each link plays a crucial role. Building that network takes time, and there have been notable successes along the way, beginning with the very idea of cooperation; some members have visited each other's sites to see how they operate and how they can improve their own facilities. Through such exchanges, respect and confidence have grown.

Assuming that collective identity — identifying oneself as, first and foremost, a member of SendaSur rather than an individual organization — is important for its long-term growth. All members are required to give 10 percent of their sales back to SendaSur, and thus far, it may not be enough to sustain the organization without outside assistance. To prosper in the long term, SendaSur must increase its sales and reduce its operating expenses. To help SendaSur create a business plan for economic sustainability, RPCI financed an organizational specialist to assess SendaSur's accounting procedures and help them to create modified operating procedures to bring them more in line with their economic reality.

SendaSur came into being during a difficult time for tourism in Chiapas. Violent standoffs between labor unions and the national government kept the region in international headlines, and they also kept the tourists away. That settled, SendaSur's sales increased from $8,000 in 2006 to $85,000 in 2007, and there is great potential for additional growth in 2008.

To help prepare the organization for this potential growth, RPCI has funded the development of a computer-based reservation system which will allow SendaSur to begin booking for larger tour operators outside of the organization. Similarly, to help minimize the potential negative effects of tourism in these delicate natural areas, RPCI is providing intensive training in sustainable tourism to tour guides that are part of the SendaSur structure.

Recent increased attention paid to SendaSur by the state tourism agency in Chiapas, the French and British embassies, the European Union, and other USAID projects in Mexico coupled with SendaSur's commitment to itself and its partners leaves little doubt that the organization will continue long after RPCI closes. While RPCI's efforts to promote and support SendaSur will not change the tourism sector in Chiapas, it has created a new model for development of the

value chain with both community-based and private enterprise.

ENVIRONMENTAL CONSIDERATIONS

While the overall intent of ecotourism is benign, it is widely known that uncontrolled ecotourism development and overcrowding can damage the very natural treasures that tourists have set out to explore. By and large the partners of SendaSur are very committed not just to ecotourism, but to sustainable ecotourism.

Knowing this, RPCI helped five of the SendaSur partners become involved in a pilot study by SEMARNAT of the new Mexican standard for tourism sustainability, NMX-AA-133-SCFI-2006. As mentioned previously, all five of these partners were certified to this sustainability standard that assesses everything from solid and liquid waste management to energy usage to limiting number of visitors based on impact. Additionally, through a local subcontract with Ecotecnics S.A. de C.V., RPCI provided an extensive guide training program to twenty tour guides currently active within the SendaSur organization. These guides received on-site instruction on wildlife identification, basic principles of biodiversity conservation, low-impact hiking and camping techniques, and basic ecology.

RPCI / ENRIQUE ALATORRE GUZMÁN

RPCI is helping to conserve magnificent destinations such as Laguna Miramar in Chiapas while increasing local incomes through sustainable ecotourism. The project sponsored the training of 20 tour guides in sustainable practices such as low-impact camping and hiking.

This training will not only improve the experience of visitors to sites within the SendaSur circuits, but will also improve the guides' ability to create more environmentally friendly tours within these precious natural areas.

LESSONS LEARNED

Lesson One: The performance of community-based enterprises is a function of planning, design, and management. Starting with the hiring of SendaSur's manager, it was possible to develop an ecotourism network, prioritize the needs for business strengthening, and create ecotourism products that met standards of quality. In addition, the relationship with key stakeholders was strengthened. RPCI's support to hire a full-time manager for SendaSur was integral to its sales success. Facilitating this hire at an earlier time would have only advanced SendaSur even further and set the organization that much closer to financial sustainability.

Lesson Two: Technical assistance plays a vital role in enabling a company like SendaSur to develop new products. Such assistance strengthens management and provides its partners with information they can use to decide which activities they should do themselves and which they should outsource. It also provides valuable information on available sources of finance and support, what should be developed next, and what should be implemented now. The development of competitive products requires research into potential markets and information about quality standards that allow diversification into specific market segments such as ecotourism. Those products must establish a foothold in markets through alliances with strategic private sector actors that can also advise a company how to adapt to the preferences of the target market. Development of new tourism products for SendaSur has been hampered by a dearth of technical assistance to properly analyze market opportunities and complete the process of product formulation.

Lesson Three: The success rates of new businesses are greatly enhanced with strategic and business plans. While SendaSur had the support of two consultants during 2006 (which enabled its creation and the start of operations), it now needs to develop a business plan to guide its development and search for financing. It also needs a monitoring and evaluation plan that enables it to systematically record its experience to later formulate a model that allows for replication of its successes.

Lesson Four: In working with community-based businesses, especially multi-partner organizations, gaining the approval of the entire range of partners and implement activities that benefit all is important. This has been a challenge with SendaSur, whose membership is so diverse that reaching agreement has resulted in numerous setbacks for programmed activities and budget expenditures.

RPCI / SALVADOR GONZÁLEZ HERNANDEZ

Tito Adán Jiménez proudly displays healthy criollo cacao from his plantation. To protect and improve their crop, Mr. Adán and his family have been participating in many of the RPCI-sponsored cacao trainings.

CHAPTER FIVE

CACAO

Of the 11,000 hectares of organically grown cacao in Mexico, only RPCI beneficiary groups have been able to export to Europe. That is a testament to RPCI's success in linking producer groups in Tabasco with specialty private-sector buyers, preparing growers to meet buyer demand, by helping with post-harvest processing and establishing common parameters for export to specialty markets.

Although a high percentage of Mexican cacao is certified organic, problems with quality control and traceability have made it traditionally difficult for producers to penetrate specialty markets. Most Mexican cacao is sold in conventional domestic markets, as exposure to international buyers has been extremely limited traditionally. As with coffee, the fastest-growing market segment for cacao is in specialty, high-end goods. RPCI adopted a two-pronged approach to working with the cacao sector in Tabasco: facilitation of partnerships with private sector interests, and direct technical assistance to community producer associations.

RPCI facilitated a memorandum of understanding between USAID and the largest U.S. importer of cocoa — ED&F Man-Corigins — to expand organic cocoa production, improve quality, and open specialty markets for high-value beans. Some 118 tons of specialty organic cacao were exported through the arrangement. The MOU stipulated the provision of free technical assistance from ED&F Man-Corigins technicians to cacao producer groups already affiliated with the Mexico RPCI project. The private sector commitment was strong in order to ensure that the cacao produced by these groups would satisfy international quality standards

and improve their opportunities for additional export purchase order agreements. Unfortunately, this MOU did not last the life of the project as ED&F Man pulled its operations out of Mexico due largely to market irregularities caused by GOM subsidies in the cacao sector. RPCI continued its work with the private sector and facilitated the signature of a contract for a trial commercial shipment with the Italian cacao processing company Italian Chocolates by Agostoni da Morbegnon (ICAM). Additionally, RPCI has supported the collection and distribution of cacao samples from beneficiary groups for consideration by specialty cacao buyers in the United States and Spain.

RPCI's community-based work in the cacao sector has followed a value chain approach very similar to that undertaken in the coffee sector. Early on in project implementation, a value-chain and market analysis of cacao in Mexico was conducted to identify opportunities for intervention. Beneficiary groups were identified and work got

TABLE 5
Cacao Results

Indicator	Unit of Measure	Baseline	Results	
			2007	2008
Income of cacao producers from access to specialized markets	USD	$333,330	$350,000	$284,314[1]
Leverage of third-party support	USD	$0	$90,000[2]	0
Cacao under organic certification	Ha	1,000	857[3]	NA
Increase of hectares renewed	Ha	0	200[4]	0
Cacao produced as specialty product	Ha	0	2	0
Capacities developed	Cuppers	0	10	0[5]

1 While producers were successful in reaching specialty markets, the onset of Moniliasis in Tabasco significantly decreased overall production volumes.

2 Financing offered by Ecologic Finance (now Root Capital) to La Chontalpa.

3 The amount of hectares under organic certification dropped in 2007 as government subsidies to support certification were reduced.

4 RPCI assisted Rio Seco in the recertification of 200 hectares as their initial certification process failed.

5 This activity was not pursued further in 2008 to increase available RPCI resources for organizational strengthening and business development training.

NEW TECHNIQUES FOR IMPROVED QUALITY

Through its research in techniques for improving post-harvest handling techniques of cacao, RPCI found an innovative way to change the fermentation process. Historically, cacao is fermented in large wooden boxes that remain open to the elements, do not provide for adequate airflow between beans, and result in a lesser quality product. RPCI has supported the construction and operation of rotating wooden cylinders in three beneficiary communities. These cylinders use less labor, produce a more uniform bean, and generally result in a higher quality product with greater marketability.

underway with the following community enterprises: Francisco J. Mújica, El Palenque, Sistemas de Proyectos Organizados en Comunidad, Río Seco, and Asociación de Productores de Cacao de Huimanguillo to improve production techniques, post-harvest handling, and administrative capabilities of these organizations. RPCI trained cacao producers in crop management, disease control, and post-harvest handling and processing. One of the primary beneficiaries in the cacao sector was Orgánicos de Chontalpa S.A. de C.V., located in Colmalcalco, a coalition of 11 producer groups, with a total of 2,407 producers, 25 percent of them women. Collectively, they farm 5,480 hectares, 3,014 of them organic.

Through the small grants fund, RPCI has supported the purchase of necessary equipment to improve fermentation ability and capacity and assess the quality of the cacao being produced by five community producer associations. These equipment purchases have been supported by ongoing technical assistance by RPCI staff and specialized consultants. As a result of these interventions, RPCI has helped reduce the titratable acidity of the cacao, which increases attractiveness for quality buyers. The assessment of cacao quality in RPCI's beneficiary groups continues now with the assistance of trained sensorial analysts.

RPCI sponsored the training of nine individuals in the sensorial analysis of cacao. These skills allow for tasting quality in production, post-harvest handling, and processing. Much like the cupping of coffee, the sensorial analysis of cacao is helping communities identify factors diminishing the quality of their product and work to rectify the problems. Aside from the direct technical assistance in production and post-harvest handling, RPCI also initiated organizational strengthening and business development training in the five beneficiary organizations to ensure adequate management capacity.

ENVIRONMENTAL CONSIDERATIONS

Very similar to the processing of coffee, cacao processing creates both solid and liquid byproducts that if left untreated can create negative environmental impacts in the surrounding areas. The RPCI beneficiary communities have been successfully composting the discarded husks and using the compost for organic fertilizer on their plantations. The waste water in many cases was either being channeled to a rudimentary primary treatment well to allow solids to settle out, or not being treated at all.

As in the cacao sector, RPCI worked closely with USAID's Clean Production and Renewable Energy Component of the Environment Program being implemented by PA Consulting to design and install biodigestors in beneficiary communities. All waste water produced during cacao fermentation is channeled into these biodigestors. Within the confined system anaerobic processes work to break down organic compounds

within the waste water that can produce downstream pollution. The byproduct of this process is methane gas. In the case of cacao fermentation in RPCI's beneficiary communities there was not sufficient methane being produced in order for it to be utilized as a power source. RPCI funded a water analysis consultancy to test water quality before passing through the biodigestors and after and results have shown that the biodigestors are successfully stabilizing the pH, dissolved oxygen, and total solids within fermentation effluent.

LESSONS LEARNED

Lesson One: The need for more comprehensive extension services in the cacao sector is apparent. Training cacao-producing groups how to obtain organic certification, improve post-harvest handling, combat disease, and pursue export markets requires continuous intervention and follow-up. This is largely due to the fact that cacao production in Mexico has developed based on ancestral practices with little direct technical assistance.

In the case of organic certification in Tabasco, cacao producers obtain organic certificates by working with technical assistance firms, which receive state subsidies for the work. As a result of this system, only the organizations closest to the technical assistance providers have achieved certification. The need for additional extension systems is apparent, although given the culture of subsidies in the Mexican cacao industry, it will be difficult for a private firm to carry out such an activity profitably. Two years ago, state subsidies to the technical assistance firms were suspended, and as a result, the certification firm's focus on financial or consulting activities shifted to other crops. Sources of subsidized, semi-subsidized, or fee-based technical assistance are needed.

Lesson Two: National interventions in the cacao sector need to be coordinated to better address the on-the-ground realities and market possibilities of the value chain. The Mexican cacao market is tremendously distorted by heavy subsidies. This has resulted in a situation where national prices are artificially elevated for a poor quality, conventional product.

There is little or no incentive in Mexico for producers to improve quality or pursue organic certification as the premium being offered internationally often does not reach the subsidized internal prices for a poor product. This perverse market has led to significant degradation in production quality and harvest volumes, as the market is compensating producers above market value for poor quality product.

Similarly, large investments are being made with Government of Mexico funds in large-scale infrastructure for cacao processing. Equipment purchased with these funds, while impressive and expensive, is more often than not above the needs and technical capacities of the producer organizations to actually utilize properly. A large-scale effort is needed to

reform national policy regarding the cacao sector in order to better direct GOM funds to support healthy growth in a healthy market.

Lesson Three: The cacao producers/processors need experienced leadership. Changes in the boards of directors of various organizations resulted in the appointment of people who lacked experience in the processing and sale of organic products. This has slowed the organizations' growth, which also reduced the benefits they reaped from the program.

Much as has been in the case in the forestry sector in Oaxaca, the change of community enterprise leaders during municipal elections has taken a toll on the sustainability of human capital built by RPCI efforts.

Lesson Four: Cacao producers need better ways to predict the size of their crop, which will allow them to promise buyers cacao quantities they can deliver. Obtaining export contracts with quality buyers is a great step for these communities but falling short on promised deliveries will quickly erode any international excitement over product quality. In their eagerness to generate income, some organizations have led buyers to expect supplies larger than what they can produce.

During the 2006–2007 harvest, some organizations fulfilled less than 10 percent of what they had contractually agreed to deliver to ICAM. RPCI has seen firsthand how buyers will quickly lose confidence in their suppliers when they cannot deliver 100 percent of contracts.

RPCI / SALVADOR GONZALEZ HERNANDEZ

Pedro García Alamilla demonstrates to cacao producers how to measure titratable acid at the RPCI-funded cacao laboratory in Río Seco.

RPCI / GORGONIO CELAYA DÍAZ

Alfredo Vasquez of the Chichicapam community explains to Pablo García how a high-market-value tomato should look on the vine. A key to increasing market value for tomatoes is the creation of a uniform product.

CHAPTER SIX

GREENHOUSE PRODUCTION

Agricultural production in the state of Oaxaca is challenging, to say the least. Water management and pest control are tremendously difficult because of the distinct wet/dry seasons as well as extreme temperature fluctuations over the course of one day.

In response to these challenges, the Mexican government began financing greenhouse construction in the Central Valley and Mixteca region of Oaxaca. Additionally, COTAS (Comité Técnico de Aguas Subterráneas) was well positioned to provide extension services throughout the area to help producers both improve production and conserve water, one of the most important resources in the Oaxaca valley. To support these ongoing efforts, the project sought strategies to both support COTAS and individual producers.

RPCI's support of COTAS was primarily through two means: a subcontract to establish the actual potential of COTAS as self-sustained business entity, and a grant to support the operational expenses of COTAS. This assistance was provided to leverage funds already being provided to COTAS by CNA (Comisión Nacional de Aguas) and CEA (Centro Estadística Agropecuaria).

Through the subcontracted services, it was clear that there was a great need for technical extension services that COTAS had the ability to provide and also that interested organizations were willing to pay for them. This was confirmed by the fact that COTAS generated 28,000 Mexican pesos in revenues from services provided between October 2006 and March 2007. Unfortunately, COTAS failed to reach its goals

and has not achieved self-sufficiency. The development of COTAS was further stalled as a result of municipal elections that have left the organization without a named president. As of the writing of this report, COTAS remains without a president and is completely inactive.

In support of government funding in greenhouse horticulture in Oaxaca, RPCI began providing technical assistance to help farmers grow tomatoes, in particular. The economy had embraced agave during the tequila boom, but with overproduction came falling prices, and the agave found throughout Oaxaca had little value.

Knowing that people would continue to migrate to the United States without a viable economic alternative in Oaxaca, RPCI decided to help with tomatoes, which had clear local and national demand, and the potential to be exported to Central America and the United States.

While farmers in Oaxaca were receiving new greenhouse infrastructure thanks to GOM funding, few of them had any

TABLE 5
Greenhouse Results

Indicator	Unit of Measure	Baseline 2006	Results	
			2007	Through March 2008
Tomato sales by cooperatives	USD/year	$768,540	$850,000	$300,000[1]
Tomato production volumes	Tons/year	1,614	1,823	600[2]
Water usage by tomato growers	m^3/Ha	48,000	45,000[3]	-
Revenues generated for services (COTAS)	USD	0	$2,600	0[4]
Leverage of third party support	USD	0	$53,000	100,952[5]

1 This data reflects only the incomes until March 2008. The full 2008 annual projection indicates $1,200,000.

2 This data reflects only the incomes until March 2008. The full 2008 annual projection indicates 2,400.

3 This data has been calculated indirectly using the electricity fees associated with pumping water by the producers of Monte del Toro.

4 As discussed in the text this activity was suspended.

5 SEDER has granted funding of 300,000 Mx pesos and Fundación Produce has granted funds for 760,000 Mx pesos for beneficiaries in La Mixteca. An exchange rate of 10.5 pesos per dollar was used.

RPCI / SGORGONIO CELAYA DÍAZ

Community members from Ignacio Vasquez practice planting seedlings during an RPCI-sponsored horticultural training event at one of the community's greenhouses.

foundation in the new infrastructure or the knowledge required to use it properly. Project staff and consultants provided assistance in business management, marketing, and horticultural skills. RPCI staff also trained beneficiaries to use pesticides properly in the event of pest infestations, the single greatest threat to the crop, and a common one. The Secretaría de Desarrollo Rural (Secretary of Rural Development, or SEDER) agreed to collaborate with RPCI in developing greenhouse products and a technical and economic model that can be replicated by other governmental and private organizations. SEDER has committed to continuing RPCI's training efforts well into future years. The CNA and the CEA have committed approximately US$46,000 in resources to continue RPCI's activities. RPCI also funded a consultancy that led to four *organizaciones económicas campesinas* (OECs) implementing a quality rating system to promote the adoption of organizational strengthening plans, and transform themselves into reliable and sustainable tomato providers. The OECs increased their sales over the previous year by US$81,460.

Because the tomato plants require constant attention and maintenance, most beneficiaries involve the entire family, especially on weekends, when they

SUCCESS STORY
Changing Opportunities at Home

RPCI / GORGONIO CELAYA DIAZ

Members of a central Oaxaca cooperative have found a better way of life by growing tomatoes in greenhouses. Says a grower's friend, "Now he has a bank account; he manages checks; he's a different person now that he is in business for himself."

Monte del Toro is one of many impoverished rural communities in the Central Valley of Oaxaca in southern Mexico. "Here there was no work," explained Ricardo Jarquin, an entrepreneur who crossed into the United States nine times in search of better opportunities for his family. He and his townsmen would spend months or years at a time working in agriculture or construction in the United States to better provide for their families.

Then Ricardo and one of his sons, along with several other former migrants to the United States, organized the Monte del Toro growers' association in 2002. The project, supported initially by the Ministry of Agriculture's Alianza Program, promoted greenhouse tomato cultivation as an attractive alternative livelihood as a means of keeping farmers in the area.

With help from RPCI, the initial 300 m^2 under greenhouse cultivation has expanded rapidly to 9,000 m^2 by four producer groups representing 38 families. Farmers now produce high quality tomatoes that command a premium price in regional markets while reducing their production costs by 60 percent.

Tomatoes are now grown to buyer specifications and markets are expanding. Improved technologies, like drip irrigation, have reduced water usage by 30 percent — critical savings in this arid region with scarce rainfall. Growers are now diversifying into other crops, expanding opportunities while reducing risk. And early adopters are teaching others to build their own greenhouses with credit from state, federal, and private lenders.

Things are different now in the Jarquin household. Ricardo's wife Aniceta boasts that not only is her husband home now, but her sons will no longer have to risk crossing the northern border to provide for their families. Greenhouse tomatoes have reduced illegal immigration and brought better livelihoods to central Oaxacan farmers.

are free to help with cutting, an essential part of tomato growth. Although some farmers are concerned about falling prices for tomatoes, they continue to invest aggressively in greenhouses. The price could fall considerably, they say, and the business would still be profitable. They can say that with confidence, in large part because RPCI technical staff initiated marginal analysis training to help producers in economic decision making and crop diversification.

The biggest hindrance to growth, at this point, is that communities are not producing enough to sell in bulk, establish a brand, and take advantage of lower transport and marketing prices. Although many of their tomatoes are sold in Mexico City, communities are still reliant on intermediaries and small buyers, who do not offer the top price for their goods. Another challenge is the roads that reach the greenhouses: many are rough and unpaved, which means transport is more expensive, and some of the goods are damaged en route.

ENVIRONMENTAL CONSIDERATIONS

The predominant form of agriculture in the Central Valley of Oaxaca is open air agriculture. Due to the pronounced dry season in this area, crops must be heavily irrigated about half of the year when there is almost no rainfall in the valley. As the dry season is accompanied by high temperatures, much of this irrigation water is lost to evaporation. In an area where water resources are under considerable strain during the dry season, this is a considerable waste of resources.

Additionally, in order to provide water for both irrigation and domestic use in the valley, water has to be trucked in from other areas. Well regulated greenhouse agriculture can significantly reduce the amount of water being used for irrigation.

As the agriculture that RPCI was supporting in this sector was conventional, a heavy emphasis was placed on the human environment and risks associated with pesticide application. RPCI-sponsored trainings stressed proper application practices and safety requirements. This has led to a great change in practices as workers applying agrochemicals are now consistent about wearing gloves and masks during application.

Similarly, as a result of the marginal analysis trainings, these communities are very carefully watching for areas where they can cut their production costs. This has led to a very careful effort to track agrochemical inputs to their production in an effort to find ways to increase their profit margins.

LESSONS LEARNED

Lesson One: With respect to developing OEC's administrative and technical capacities, the methodologies must include strategies that reflect market conditions and promote improvement to enable production of higher quality products. The firm subcontracted by RPCI used a methodology that prepared the

SUCCESS STORY
Farmers' Competitive Skills

RPCI / CASEY SILVA

Susana Vasquez Vasquez, a resident of Chichicapam in Oaxaca, prepares tomatoes for harvest. Through RPCI-sponsored marginal analysis courses, participants such as Vasquez now have the analytical tools to succeed in the competitive Mexican produce market.

Chichicapam is a small, quiet, isolated village in the state of Oaxaca. Because so many of its people live in poverty and lack formal education, they have few employment opportunities beyond cultivating crops such as corn, agave, and tomatoes to sell in local markets.

Susana Vasquez Vasquez, a lifelong resident of Chichicapam, is an example. To feed her family, she relies on income from harvesting and selling tomatoes. Because the town lacks water, growing tomatoes requires both careful attention and considerable investment. Apart from maintaining a meticulously cultivated greenhouse, Ms. Vasquez must purchase inputs such as tools and fertilizer. Having little background in cost comparison, however, Ms. Vazquez had difficulty making purchasing decisions.

Knowing that Ms. Vasquez was not alone, RPCI developed a program to give local producers the tools to make financial decisions. Along with the state of Oaxaca's agriculture extension services, RPCI financed several courses designed to improve the business acumen, and hence competitiveness, of producers such as Ms. Vasquez.

One of those tools was a two-day course in marginal analysis. The course examined issues that producers face every day: Should I purchase a more expensive fertilizer? Should I buy a truck to haul the produce to local markets? Should I grow tomatoes or, given the market price, should I produce another crop? The course taught participants to answer these questions through a series of comparable budgetary evaluations that show the expected financial outcomes of each decision. The residents who participated in the course now have the analytical tools to make profitable decisions and remain afloat in Mexico's competitive market.

Thanks to the training, Ms. Vasquez' tomato production continues to grow, as do her revenues. "With the help of RPCI, we can make the best decision about our business," she said.

OECs to respond to a buyer with well-developed quality standards, but due to the high local fresh market price, such buyers were not relevant. Given this situation, the methodology resulted in recommendations with little power to promote changes in conduct or culture that would improve product quality.

Lesson Two: It is essential to involve local, state, and to some degree the federal government in planning and setting objectives. Government participation would have increased COTAS' credibility, addressed the real needs of COTAS' beneficiaries, and attracted additional financial support.

Lesson Three: Coupling technical assistance with funding for new infrastructure is of the utmost importance. While many of the RPCI beneficiaries had received funding from the GOM to expand their greenhouse infrastructure, very little assistance was available to improve how they were managing not only this infrastructure but their businesses.

When initiating activities with these enterprises, RPCI quickly saw that there were inefficiencies within the production systems of these greenhouse growers that only required very small revisions to their processes to decrease water and pesticide usage and increase profitability. Through properly targeted technical assistance, programs can increase incomes of community based enterprises without needing to expand infrastructure.

RPCI / MEGHAN EPLER WOOD

The installations that form part of the Las Guacamayas resort in Ocosingo, Chiapas were audited against the Mexican government standard NMX-AA-133-SCFI-2006 for environmental sustainability, as part of its successful certification process. Four other SendaSur members were also certified, and remain the only five tourism destinations certified to this Mexican ecotourism standard.

CHAPTER SEVEN

POLICY

Working at the policy level presented RPCI with a keen opportunity to focus government attention on important issues at the nexus of environment and development, address key sector level bottlenecks, and take advantage of emerging opportunities to generate dialogue at a higher-level from activities generated at the community level. While RPCI quickly established working groups and work plans with CONANP, CONAFOR, and PROFEPA under the existing MOU between USAID and SEMARNAT, the project soon found that its best opportunity for policy changes lay in ecotourism development. This was done mostly to create the conditions for the success of SendaSur.

Given the available resources, it was not possible for RPCI to launch policy initiatives in each sector targeted by the project. Instead, RPCI focused on the development and effective application of instruments that orient the actions of decision-makers in tourism and environmental management to support tourism as an environmentally, economically, and socially viable economic alternative within the national system of protected areas. In promoting nature tourism in Mexico, the main challenge for RPCI has been the coordination of strategies among the different state and federal agencies to generate and consolidate competitive ecotourism enterprises and protect the environment.

RPCI's policy interventions varied from the provision of training to government officials, the supply of specialized technical assistance, the development of curricula of government-funded training programs, and development of municipal ecotourism plans. This broad-based support culminated in the creation of

three very important policy tools for the Mexican government: the Strategy for Sustainable Tourism and Recreation in Protected Areas, the Plan Rector de Turismo, and the Norma Voluntaria NMX-AA-133-SCFI-2006.

Very early on in work planning discussions with CONANP the need for a strategy for sustainable development of tourism in protected areas was brought to the table. RPCI staff shepherded this idea from the development of a scope of work for a potential consultant to the final fruition of a living policy document being implemented at the national level. Over the course of approximately six months, RPCI financed and oversaw the work of a specialized consultant to create the Strategy for Sustainable Development of Tourism and Recreation in National Protected Areas.

Since its development, RPCI has worked to disseminate the strategy throughout Mexico, train CONANP and other government agencies in its particulars, and also work with the managers of protected areas in its implementation.

RPCI worked in a similar manner with SECTUR to help the agency develop a Plan Rector de Turismo. After its detailed involvement in developing the strategy with CONANP for tourism in protected areas, RPCI was well positioned to assist SECTUR with recommenda-

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Comisión Nacional de Areas Naturales Protegidas (CONANP) is now regulating tourism development in Bonampak and other natural protected areas against the Strategy for Sustainable Tourism and Recreation in Natural Protected Areas, which RPCI developed. The strategy was officially introduced by CONANP President Ernesto Enkerlin in September 2007.

tions for their new national level tourism strategy.

Leveraging the work already completed in protected area tourism policy, RPCI helped SECTUR ensure that their new strategy was fully compatible with that developed by CONANP. By working as a third party in policy development with both of these government agencies, RPCI helped bridge a coordination gap that had been existing in tourism policy for some time.

The third piece of national level tourism legislation strengthened via RPCI support was the Norma Mexicana NMX-AA-133-SCFI-2006. This voluntary standard establishes the requirements for ecotourism sustainability. While the standard existed prior to this project's formation, RPCI along with PA Consulting and the Mexican Norms and Certification Institute actually brought the standard to life.

RPCI facilitated a pilot project with SEMARNAT to essentially test the certification standard for the first time, assessing ecotourism enterprises against the standard for certification. To leverage the advances that SendaSur made in the sustainability of its member organizations enterprises, RPCI lobbied heavily for the inclusion of SendaSur community tourism destinations within this pilot project.

At the end of this pilot project, five SendaSur communities were certified under the standard; and at the time of writing, they were the only certified tourism destinations. Upon completion of this pilot project, RPCI also provided recommendations to SEMARNAT on how to improve the standard and the certification process.

In order to ensure sustainability of these efforts, RPCI has worked closely with SECTUR, CECADESU, and CONANP in the creation of four training programs that will be rolled out by the Government of Mexico in 2008. These trainings are intended to help beneficiaries, from public citizens to highly developed tourism enterprises, fully understand the new tourism legislation and help them generate new tourism activities that are in compliance with legislation and provide viable economic activities.

To further support SEMARNAT in creating sustainable and profitable community tourism projects, RPCI developed both a model for the development of community tourism products and a guide for the creation of said projects in coordination with SECTUR, CONANP, and SEMARNAT. As of March 2008, these documents are still being reviewed by SEMARNAT.

While RPCI will no longer be able to act as a facilitator between the various government agencies working to regulate tourism development in Mexico, it has left a strengthened body to work in its stead: the Inter-Institutional Group for Ecotourism, Rural Tourism, and Nature Tourism Activities. This group was reborn in August of 2007 and now consists of representa-

tives of 15 Mexican agencies with interests in tourism development. RPCI helped the group establish its general accord, prioritize its action plan, and begin talks on an integrated training strategy for tourism development at the national level.

At the federal level, it is expected that, under the General Accord for Inter-Institutional Cooperation for Development of Ecotourism, the different agencies involved in promoting/developing this sector will adopt policy guidelines and simultaneous planning processes that facilitate coordinated action and achieve the results described in the Plan Rector de Turismo.

LESSONS LEARNED

Lesson One: Policy guidelines, as well as the planning instruments, should be conceived as practical tools that undergo continuous development. RPCI has seen firsthand that policies cannot be left dormant. The best way to ensure proper implementation and adequate adaptation of policies is to continue reviewing and assessing the legislation in practice and the government's understanding of inter-policy synergies.

Lesson Two: The participation of key stakeholders is critical for the effective implementation of public policy. While RPCI utilized participative planning processes during the development of all three of the tourism policy tools, to include all relevant government agencies, it is now necessary to involve key stakeholders from the private sector, civil society, and academia that can guarantee the suitable implementation of these pieces of legislation. Their involvement will facilitate the evaluation of the legislation's efficacy and will identify any adjustments necessary to meet the needs of the beneficiaries of these programs. In addition, it will be key to promote public information meetings and generate mechanisms for participation and social agreement in which all the groups representing this sector can participate in making decisions that concern them.

Lesson Three: The implementation of policies should start with outlining to stakeholders what the benefits are in the short, medium, and long terms. Policy implementation is a very gradual process requiring patience and compromise from all involved, so it is important to create a work plan that will show results in the shorter term. For different actors to commit to the change of policies, they must be able to identify the benefits such changes will bring during each phase of implementation. RPCI saw first hand that interest will wane during policy reform and formulation in the absence of tangible results.

Lesson Four: Although the scope of action of this component was limited to tourism, the lessons learned here, particularly with respect to the approach and methodology for supporting policy-based initiatives, are quite applicable to other commodities and other sectors. A similar approach could be enlisted in order to create national regulations for coffee, forestry, and cacao if all of the appropriate players will help start this effort.

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