Commercialization and Artesanal Agroindustry: Sustainable Livelihood Strategies for Rural Capira, Panama

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EXECUTIVE SUMMARY

Given the monetisation of rural economies and the well-documented link between poverty and environmental degradation, income-generating strategies are necessary for small-scale farming households. The aim of our research project is to explore realistic strategies for sustainable livelihoods that promote conservation, poverty reduction, and social equity. We specifically focus on commercialisation and artesanal agroindustry as two options for sustainable livelihoods available to small-scale farmers.

Field research was undertaken in three rural communities in the District of Capira: Bonga Centro, Las Gaitas, and La Conga. In addition to using traditional research methods, we conducted semi-structured interviews with fourteen farming households and held a workshop to present the results to the communities and invite participatory analysis of the data. Additionally, we researched the state of the agroindustrial sector in Panama by meeting with representatives from government agencies, non-governmental organisations, universities, and private enterprises.

Although small-scale farmers in rural Capira prioritise subsistence production, nearly all the producers we interviewed also engage in market activities. They perceive commercialisation as essential to their livelihoods, but they struggle to insert themselves into market. The lack of access to adequate physical and institutional infrastructure, in addition to low and variable prices received for agricultural products were identified by farmers as the most significant obstacles to commercialisation. Farmers deem that overcoming these obstacles is essential—not only to generate income, but also to help their families access health care, education, and other basic services.

Agroindustrial activities could help address these issues, but, according to some key actors in Panama's agroindustrial sector, such ventures require long-term planning. Agroindustry involves not only cultivation of agricultural products, but also the packaging, transforming, transporting, and certifying of these products. Therefore, starting a new venture necessitates significant capital inputs and adequate organisational structures. Individual small-scale farmers may not be able to meet the requirement for capital and organisation on their own. These challenges are particularly acute in Panama, where the agroindustrial sector is not extensively developed. Community organisation and partnerships with public or private agencies can thus be considered essential elements of a successful commercialisation or artesanal agroindustry project.

Although introducing new commercialization and agroindustrial activities in a community is a long and arduous process, such ventures are possible if a community is well organized and has access to adequate support. If approached one step at a time, commercialization and agroindustry projects can promote conservation, poverty reduction and social equity.

RESUMEN EJECUTIVO

Dado la monetización de las economías rurales y la lianza bien documentada entre la pobreza y la degradación ambiental, estrategias de generación de ingreso son necesarias para las familias campesinas. La meta de nuestra investigación es de explorar estrategias de vivienda sostenibles que promuevan la conservación ambiental, la reducción de la pobreza, y la equidad social. Especificamente, nos enfocamos sobre la comercialización y la agroindustria artesanal como opciones de viviendas sostenibles disponibles a los pequeños productores.

El trabajo de terreno se hizo en tres comunidades rurales en el Distrito de Capira: Bonga Centro, Las Gaitas, y La Conga. Además de usar los métodos de investigación tradicionales, hicimos entrevistas con catorce familias campesinas y dimos un seminario para presentar los resultados a las comunidades y hacer un análisis participativo de los datos. Además, hablamos con representantes de varias agencias gubernamentales, organizaciones no gubernamentales y empresas privadas para investigar el estado del sector agroindustrial en Panamá.

Aunque los pequeños productores en Capira dan prioridad a la producción para el sustento de la familia, casi todos los productores que entrevistamos también están involucrados en actividades de mercadeo. Veen la comercialización como necesario para sus viviendas, pero encuentran muchos obstáculos cuando tratan de insertarse en el mercado. La falta de acceso a infraestructuras físicas y institucionales adecuadas, además de los precios bajos y variables recibidos para sus productos, fueron identificados por los productores como los obstáculos a la comercialización más importantes. Los productores juzgan que la superación de estos obstáculos es indispensable—no solamente para generar ingreso, pero también para ayudar sus familias a tener acceso a los servicios de salud, a la educación, y a otros servicios básicos.

Actividades agroindustriales podrían ayudar a enfrentar esas cuestiones, pero según algunas personas claves en el sector agroindustrial Panameño, tales empresas requieren una planificación a largo plazo. La agroindustria no solamente conlleva la cultivación de los productos agrícolas, pero también el envasado, la transformación, el transporte, y la certificación de esos productos. Por lo tanto, empezar una nueva empresa requiere inversiones significativas de capital y estructuras organizacionales adecuadas. Sería posible que un sólo pequeño campesino no alcance cumplir los requisitos en capital y organización por sí mismo. Esos desafíos son especialmente agudos en Panamá, por el poco desarrollado que es el sector agroindustrial. La organización a nivel de la comunidad y el trabajo en asociación con agencias públicas o privadas pues pueden ser considerados elementos esenciales para el éxito de proyectos de comercialización o de agroindustria artesanal.

Aunque introducir en una comunidad nuevas actividades comerciales y agroindustriales sea un proceso largo y arduo, tales empresas si son posibles si una comunidad está bien organizada y si tiene acceso a soporte adecuado. Si se intenta por etapas, proyectos de comercialización y de agroindustria pueden promover la conservación de la naturaleza, la reducción de la pobreza y la equidad social.

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INTRODUCTION

Some words seem to reappear in every discussion of the socio-environmental reality of rural Central America: uncontrolled deforestation, extreme poverty, soil degradation, pending water shortages, rapid biodiversity loss, accelerating landlessness and human migration. As a case in point, in Panama the national poverty rate is 37.3%, but reaches 64.9% in rural areas (World Bank 2004). The expanding population in rural and urban areas threatens to accelerate biodiversity loss, deforestation, and degradation of water quality and quality within the Panama Canal Watershed (Condit et al. 2005). The need for change is clear.

In response to these challenges, development initiatives have been elaborated and implemented in rural areas. These initiatives range from large infrastructure construction projects to participatory workshops and studies aimed at fostering sustainability and empowerment. In our research, we investigated artesanal agroindustry—or the small-scale commercialisation of agricultural products—as a rural development strategy in Panama. Artesanal agroindustry has the potential to promote environmental, social, and economic sustainability by providing subsistence farmers with greater economic stability. However, before we begin, a review of the history and paradigms of development is in order. This review will highlight how rural development was conceived and pursued in the past century, and how the rural sector got to where it is now. It will also indicate how rural development inserts itself into the most recent paradigms and practices of development.

'Traditional' development paradigms

Modernisation theory

Modernization theory was elaborated by Western scholars in the post-WWII period, when it was decided that most newly independent countries and ex-colonies—and therefore the majority of the world population—were not 'developing' according to the criteria set by the Western Hemisphere's conception of the 'good life' (Valenzuela 1978). The state of underdevelopment in developing countries was attributed to their attachment to their traditional values, which created a traditional/modernity divide with 'western societies'. This 'gap' could be overcome by modernizing all political, economic, and social institutions. To do so, developing countries would have to emulate the development process that took place in so-called developed countries (Valenzuela 1978).

Most economic models from that era were based on classical economic theories which considered that economic growth (whether it be equally or unequally distributed) was a precondition to development and that once a country had attained a certain level of wealth, then would benefits trickle down to all of its population. Economic models predicted that the manufacturing sector was the real motor of growth, and the adherence to these models gave rise to policies that favoured the urban sector at the expense of the rural sector. This approach has had lasting effects on rural development: to this day, the rural sector contains the greater proportion of poverty (Smith and Todaro 2006)

Dependency theory

Dependency theory emerged in the 1960's as a response by Latin American scholars to the modernization approach. It attributed the rapid and prosperous

development of so-called developed countries to the exploitation of the resources found in developing countries and to the unequal terms of trade that prevailed in the global economic system. Indeed, while ex-colonies received low prices for the exportation of their raw material, they were forced to buy the manufactured goods coming from the developed countries at high prices (Valenzuela 1978).

Many governments responded to this model by adopting a state-led model of industrialization—the Import Substitution Industrialization (ISI)—that promoted and subsidized the creation and protection of national manufacturing and industrial sectors. Such policies were highly criticized in the 1980's, when unprofitable national industries and significant debts forced indebted countries to seek monetary help from multinational institutions such as the IMF and the World Bank. Developing countries were granted support at the condition of adopting strict structural adjustment programs. These programs forced countries to undertake significant privatization and to cut in their spending, particularly in their social programs.

Human development paradigm

The previous models focus on formal economic growth and thus tend to ignore important sectors of society such as the informal economy, the rural subsistence economy or women's contribution to their communities. Protagonists in these sectors are often forgotten and marginalized by development policies. A first step to resolve this situation would be to consider if the indicators used to assess the performance of a given country or development strategy are adequate. In fact, economic indicators help us assess the performance of economic growth, but do not tell us *who* benefited from this growth. Economists such as Amarthya Sen and Mahbub ul Haq worked on the *Human Development Paradigm* to shift the focus of economic development onto the final end of *human* development. They define the purpose of development as being "to create an enabling environment for people to enjoy long, healthy and creative lives" (ul Haq 2003). Therefore, it is important to look at indicators showing if growth benefits to all groups of society; if it improves general welfare; and if it helps to reduce poverty in vulnerable sectors of society (e.g. rural populations; especially women, indigenous people and children).

Alternative Development

Up to a certain epoch, development projects were examples of development 'from above'. This type of development projects are conceived, planned and executed by technocrats or development workers without the input of local populations (Pieterse 1998). Alternative development is an invitation to look for appropriate goals and manners to conduct development by targeting the specific needs and characteristics of local populations. It emphasises the 'how' to conduct development and forcefully rejects projects managed solely 'from above'. Instead, as Korten explains, development should seek to be

> "[…] a process by which the members of a society increase their personal and institutional capacities to mobilize and manage resources to produce sustainable and justly distributed improvements in their quality of life consistent with their own aspirations."
> (Korten in Pieterse 1998)

The following discussion explores different theories and trends that are usually considered part of the alternative development paradigm.

Sustainable development

Another criticism of traditional indicators and development strategies was that they did not account for the depletion and depreciation of natural resources. In the 1970s, it was believed by many scientists that a global crisis was looming because the rapid rate of population growth would encounter a limit of food production and of natural resources extraction (Smith and Todaro 2006). To prevent this crisis, many started to stress the fundamental interconnection between the environment and development. As Overton and Storey (2003) explain, people degrade their environment because of poverty and to answer to their basic needs. Therefore, fighting poverty and ensuring the fulfillment of the basic needs of all members of a community is necessary if we want to protect the environment (Overton and Storey 2003). In 1987, this was recognized in the Bruntland Report from the World Commission on Environment and Development. This report expressed the belief that a capitalism-based economy *could* reconcile environment and development if it was committed to promoting *sustainable development*, defined as the commitment to "meet the needs of the present generation without compromising the ability of future generations to meet their own needs". A single and universal means to achieve sustainable development has not yet been found; however, a consensus seems to have been reached on the need to strive for it within all development projects put in place (Overton and Storey 2003).

Development from below

Not only were the philosophy and rationale behind traditional development theories criticized, but also the practices employed in the field. In the past, many failures have been attributed to the conservative or indifferent attitudes of the population targeted by a project (Overton and Storey 2003). However, it was later proposed that maybe well-intentioned, but paternalistic manners of conducting development might be the source of the problem. Indeed, development agencies or governments often used to conceive a project by looking at cost/benefit analysis or institutional obligations first; thus failing to consult the targeted populations until the implementation phase of the project. Instead, *development from below* has its primary concern in involving the targeted population throughout the whole process as the 'primary participants', rather than imposing from above or outside. It is believed that such an approach ensures that a project suits the needs of its recipients and that the latter will support its implementation (Overton and Storey 2003). This is achieved by entrusting the local population with the task of identifying their own needs, and by capacitating them to design the means to answer these needs. The projects resulting from such a bottom-up approach are smaller in scale and use smaller, but often more appropriate, technology (Overton and Storey 2003).

Gender and development paradigms and practices

As was mentioned above, women often perform non-income generating work, and their contribution to household subsistence often goes unmentioned in traditional evaluations of rural livelihood strategies. As a result, development practices often fail

to include women (Overton and Storey 2003). To rectify this situation, many strands of alternative development theory started focusing on women, their historical marginalization, and the need to integrate them into the development process. It is important to mention that a gender component is now integrated in almost all development projects, and that there are also many projects specifically targeting women.

Rural Development

Introduction of modern practices

In the last 60 years, agricultural practices have changed a lot with the introduction of new techniques and machinery, especially those introduced during the Green Revolution. However, only those farmers with enough resources were able to grasp these opportunities to become more competitive; and therefore the benefits of the Green Revolution were not shared equally by all. Indeed, the smaller producers who could not adopt these new techniques or technologies did not reach the same level of productivity as those using the new technologies. This created what is now described as a duality in the agricultural sector composed of a modern, capitalist agriculture, and of a traditional, subsistence agriculture (CEPAL 1998).

Sustainable rural development

Panama's rural sector is an exception in Central America. Agriculture constitutes only a small part of the country's GDP (only around 10% in 1989), which has its primary source in the service sector (75% of GDP in 1989) (West 1989). However, up to one third of the Panamanian population works in the rural sector and in 1999, 65% of the rural population was poor (World Bank 1999). Thus there exists a real need to fight poverty and find strategies to improve the prospects of sustainable rural development in Panama.

The Instituto Interamericano de Cooperación para la Agricultura (IICA) defines sustainable rural development as a:

> "Proceso de transformación de las sociedades rurales y sus unidades territoriales, centrado en las personas, *participativo*, con políticas específicas dirigidas a la superación de los desequilibrios sociales, económicos, institucionales, ecológicos y de género..."

The IICA proposes strategies focused on poverty reduction and equitable economic growth; integral territorial planning; development of human capital and participation; and the sustainable management of natural resources. Furthermore, IICA suggests that decision-making should be decentralized and that local initiatives should be encouraged through existing local institutions or organizations (IICA 2000). Examples of sustainable rural development initiatives range from handicraft sales, to rural tourism and sustainable/organic agriculture (IICA 2000).

Artesanal agroindustry

An artesanal agroindustrial activity could potentially be introduced within a sustainable rural development strategy. A small-scale agroindustrial initiative has the potential to improve small farmers' livelihood quality by providing them with an additional source of income. In 1957, Goldbery & Davis defined agroindustry as a:

> "Sistema que enfatiza la interdependencia y naturaleza interrelacionada de varios aspetos: la oferta agrícola, el acopio, almacenamiento, procesamiento, distribución y consumo. Incluye además las instituciones y acuerdos tales como el gobierno, los mercados actuales y futuros, asociaciones de commercio, cooperativas, grupos de transporte...etc."
> (Machado Cartagena, 1997 cites Goldbery & Davis).

Agroindustry could allow small farmers to exploit the added value of the crops they produce. In fact, the transformation of their products after the harvest could generate both additional employment opportunities and salaries for small-scale farmers and their families (Machado Cartagena 1997). According to the Instituto Interamericano de Cooperación para la Agricultura (IICA), rural agroindustrial projects can be recognized for answering to the following characteristics (IICA 1993):

- Employ local and sources of inputs
- Benefit small producers by the extraction of an added value from the transformation of their products
- Integrate of production, transformation and commercialization
- Use simple and affordable technology; produces in small volumes

CREA's Sustainable Agriculture Project: A Case Study in Rural Development

About CREA

Conservation through Research, Education and Action (CREA) is currently involved in a sustainable rural development project in Capira, Panama. CREA is a non-profit organisation committed to "a vision where all people are able to share in the benefits that a quality natural environment can provide and are sufficiently informed to make long-term environmentally sensitive choices that better the quality of their lives" (CREA 2005). Thus, CREA's approach to fostering sustainability is founded on research, education, and training. Through its projects and programs, CREA is attempting to understand the socio-environmental reality of the rural poor in Panama; to promote awareness of the value of natural resources and ecosystems; and to train environmental professionals who can translate the ideals of sustainability from theory into practice and act as mentors in their communities.

Capira: The local context

In partnership with CATIE, a multinational agricultural research organization based in Costa Rica, CREA is conducting a sustainable agriculture project in the District of Capira, Province of Panama. Located less than 60 km away from the capital city of Panama, Capira is primarily an agricultural area. A preliminary household survey of the Capira communities of La Bonga, Bonga Centro, La Conga, La Florida, Gasparillal, and Nueva Arenosa indicated that agriculture and pasture are the two most common land

uses and that yucca, yams, plantains, rice, coffee, bananas, oranges, red beans, and mangos are the crops most commonly cultivated by small-scale producers (Carlson 2005). The traditional practice of slash-and-burn is typically employed to prepare the land before the planting season (Carlson 2005).

Figure 1: Maps of CREA's project site: (a) Capira communities of La Bonga, Bonga Centro, La Conga, La Florida, Gasparillal, and Nueva Arenosa; (b) Map of Panama showing geographical relationship of Capira to the Panama Canal and the capital city of Panamá.
***Source*: http://www.multimap.com/wi/43079.htm**

(a) (b)

Small-scale producers in Capira have identified low soil productivity, erosion, crop plagues and disease, and low technical assistance as major challenges to maintaining the productivity of their farms (Anita Roy, personal communication). Researchers and technicians frame the immediate cause of these environmental problems as deforestation for cattle ranching and agricultural land, overgrazing, and excessive use of agrochemicals. Ultimately, the use of such unsustainable practices negatively impacts not only agricultural productivity, but also biodiversity and the quality and quantity of water in the Panama Canal Watershed (Anita Roy, personal communication).

CREA's approach to rural development

The CREA-CATIE project, *Participatory Validation and Replica of Sustainable Agricultural Practices in Priority Areas of the Panama Canal Watershed*, is an attempt to address these agricultural and environmental problems through the farmer-to-farmer approach to rural development. Under this approach, the producers themselves are encouraged to generate the information needed for the design and implementation of the project and to monitor the success of the development strategy. Farmers are thus able to learn by experience, and newly acquired knowledge can be transferred from one farmer to another when a curious neighbor or relative asks "How?" or "Why?" Such an approach values the expertise of local farmers and more closely mimics the normal form of communication and learning among *campesinos*.

In this context, the CREA-CATIE project aims to create both physical and institutional space for producers, technicians, and researchers to learn from each other and evaluate the merits of organic, agro-ecological farming practices. Specifically, the project seeks both to train poor subsistence farmer households in the use of modern sustainable agricultural systems and to empower these farmers to conduct their own

analyses. Throughout the process, *campesinos* will be encouraged to formulate their own technical ideas and agricultural strategies based on their results.

The key participants in CREA-CATIE's sustainable agriculture project are researchers and technicians from both organizations and ten farming families from five Capira communities. The project itself consists of three phases. The first phase, completed in May 2005, focused on providing training in sustainable agricultural practices. Interactive workshops on organic fertilizers, integrated pest control strategies, soil conservation techniques, eco-agronomic conservation techniques, and agroforestry systems were offered to local community members. During the currently ongoing second phase of the project, practical use of these techniques are being implemented and validated on demonstration plots within the farms of the ten participating families. This second phase involves collaboration between two experts – a researcher and a local producer – to develop a sustainable agriculture design. Labour is shared by community members. Finally, the third phase of the project, scheduled to begin in June 2006, will be to train the ten farmers to become rural extensionists in their own communities. If the sustainable agricultural practices promoted in the CREA-CATIE project produce benefits in terms of yield and/or soil health, it is expected that other farmers in the communities will want to learn about these techniques. The extensionist training provided will equip farmers to become teachers in their communities. Throughout the entire process, social and environmental variables are being monitored in an ongoing manner.

Future perspectives

Ultimately, CREA hopes that this sustainable agriculture project will not only empower poor subsistence farmers in Capira, but also serve as a model for similar projects in other areas of the country. Specifically, based on lessons learned in Capira, CREA plans to replicate this participatory sustainable agriculture project in Cocobolo, a nature reserve created in the District of Chepo in May 2005 for the conservation of the upper Mamoni Watershed for the benefit of the local people. Under consideration for this Cocobolo replicate is the integration of a commercialisation component into the project: small-scale farmers will both learn about and experiment with sustainable agriculture practices, and in addition explore potential local, national, or international markets for their products. Incorporating a commercialisation component into the project has the potential to further the progress towards sustainability by allowing subsistence farmers to earn enough money to pay for the lifestyle to which they aspire without degrading their environment and natural resource base (Clay 1996).

Aims and Objectives

In light of CREA's current involvement in Capira and plans for future action in Cocobolo, the aim of our project was *to explore realistic strategies for sustainable livelihoods that promote conservation, poverty reduction, and social equity*. Our study of sustainable income generation strategies was specifically focussed on approaches most relevant to small-scale producers living and working in Capira. The specific objectives of our project were

- To review the opportunities for commercialisation available to small-scale producers in Panama. Such opportunities may include, but are not exclusive to,

forming cooperatives and/or accessing new markets for fresh produce; processed or transformed foods; non-timber forest products; organic produce; and fair trade products.

- To investigate the structures already in place for the commercialisation of agricultural products in Capira. Such structures may be physical, such as roads or pick-up trucks to transport goods to market; institutional, such as buying and selling cooperatives; or knowledge and skills-based such as the capacity to transform and process foodstuffs.
- To explore the communities' interest in commercialising a greater fraction of their produce and to identify the barriers to commercialisation perceived by local small-scale producers.
- To evaluate the relative merits of various commercialisation strategies based on the socio-environmental reality of small-scale producers in Capira.

The final outcome of this project is a series of recommendations to CREA and other NGOs so that they may be better equipped to make decisions regarding the integration of a commercialisation or agroindustrial component in already in place or future sustainable livelihoods projects. We have presented our results in the form of a written English report to CREA and as an oral workshop about the results of the interviews realized in their communities to farmers of Capira.

METHODOLOGY

Methodological Approach

Development projects are intentional interventions aiming to accelerate and direct economic growth and social development (Cernea 1995). Because our research was carried out in the context of a rural development project, and not solely for purposes of academic curiosity, it was essential that when developing our methodological approach, we take into account lessons learned about factors leading to the success or failure of development projects. Of these lessons, the most widely recognized is the need to incorporate local people into the development process if meaningful change is to be achieved (Cernea 1995). Public participation tends to lead to more culturally appropriate projects; a stronger degree of adoption of the project by the local people; and greater satisfaction with the project among the local people (Bagadion and Korten 1995).

We therefore chose to adopt participatory rural appraisal (PRA) as the framework for our research project. PRA is characterized by the involvement of local people in all stages of the research project, from the selection of the research question to the gathering and the analysis of data (Chambers 1995). Including local people in the research process tends to shift the focus of development projects away from complex technologies and large infrastructure, and instead towards people and communities, generating more equitable and appropriate projects. PRA also allows for rapid and accurate data gathering and for easy integration of participative evaluation and monitoring. Finally, PRA can be an empowering approach to research because it promotes capacity-building and raises awareness about development issues in the local community (Chambers 1995).

Although PRA has been developed primarily in the field and with little theoretical background, an effort to compensate for biases in traditional appraisal methods (such as urban bias, gender bias, spatial bias, etc., as discussed in the introduction) has emerged as a basic practice of this approach to research (Chambers 1995). In our research, we attempted to compensate for such biases by seeking participation by diverse groups of people. We investigated strategies for sustainable livelihoods by learning from and with *campesino* families, NGO workers, government agency representatives, and university researchers.

Triangulation is a second basic practice underlying the PRA approach to research (Chambers 1995). We used triangulation in order to gain a more complete understanding of the socio-environmental context and the opportunities for commercialisation. Triangulation can help gather information from different angles and at different levels, and to not only verify *if* inferences are valid; but also to determine *which* inferences are valid (Schwandt 1997). Thus, to answer our questions, we chose to employ four different methods: library research, direct observation, semi-structured interviews, and workshops. These methods were focused on farming communities of Bonga Centro, Las Gaitas, and La Conga in the District of Capira. In addition, we met with key actors in Panama's commercialization and agroindustrial sector.

Methods

Method 1: Library research

We began our research by studying books, archives, journal articles, NGO publications and regulations published by fair trade and organic producers' organizations. Through this review of secondary data, we familiarized ourselves with small-scale agroindustrial projects and strategies for sustainable livelihoods and examined how they have been adopted in Panama and around the world. By reviewing both theories and lessons learned in the field, we oriented ourselves in our research and determined specific avenues to explore.

Method 2: Direct observation

Although direct observation is not an inherently organized or representative research method, it is a rapid way to gain an initial understanding of the local context. Chambers (1995) recommends developing a list of points to observe before going into the field in order to systematize the process of direct observation. In our research, we used direct observation primarily to familiarize ourselves with the socio-environmental context of our study site. Therefore, the points we focused on were:

- Road quality
- Distance (in hours and in kilometres) from farm to nearest market or city
- Means of transportation available
- Agricultural products grown in the area
- Available labour

We recorded our observations and reflections on these observations in a field journal.

Method 3: Semi-structured interviews

Semi-structured interviews are informal interviews organized with guiding themes, but without the rigidity of questionnaires. Semi-structured interviews are a participatory research method because they are flexible enough to allow ideas and themes that emerge during the interview to be explored and followed up upon (Chambers 1995). We conducted semi-structured interviews with two groups of people: scholars and rural extension workers, and *campesino* families. The aim of our discussions with university researchers, government agency representatives, and NGO workers was to identify key informants – people who could best inform us about specific questions or offer alternative perspectives – and to learn about the details of successes and failures of past and present small-scale agroindustry projects. We also sought to uncover what types of financial and technical assistance are available to small-scale farmers wishing to embark on an artesanal agroindustry or commercialization project. We conducted the interviews in a location convenient to the interviewee, such as an office or, whenever possible, at the project site.

The purpose of our interviews with *campesino* families in Capira was to investigate the structures already in place for the commercialization of agricultural products and to explore the perceived motivations for, and barriers to, commercialization of agricultural products. The general themes used to guide our interviews can be found in appendix 1 of this paper.

We used the snowballing technique to identify study participants. The snowballing technique involves asking the person being interviewed for the names of people who might be able to provide a similar, alternative, or interesting perspective (Patton 1990). These people are then interviewed, and asked to provide more contacts. Once the names of people to contact begin to be repeated, the process is ceased (Patton 1990). In this way, we were able to conduct semi-structured interviews with different groups of Capira *campesinos*, including:

- *Campesinos* with easy access to transportation, specifically *campesinos* whose farm can be reached by *chiva*. We hypothesized that access to transportation will emerge as a significant variable influencing *campesinos*' decision to sell their produce in the regional market.
- *Campesinos* with poor access to transportation, either because the road is very poor or because no *chivas* reach their community.

We had planned to employ a variety of participatory techniques during the interviews, namely:

- Traveling to the market in Chorrera with Capira *campesinos* to learn about the current process of selling agricultural produce.
- Using photographs and diagrammes to encourage participants to make links between topics.
- Walking around the farm with a *campesino* to learn about types and amounts of agricultural products sold.

However, a pre-test of the interview indicated that the use of these techniques would be inappropriate. First, we deemed the use of photographs and diagrammes to be unnecessary: the farmers we interviewed are very intelligent and are quite able to make links without the use of these visual aids. Second, because *campesinos* tend to be very articulate when discussing matters of agricultural production and commercialisation, we found our questions were answered simply through conversation. We felt that walking around the *finca* or traveling to the market in Chorrera would not provide us with

enough additional information to justify asking research participants to give us even more of their time.

During all interviews, both researchers were present. To keep conversation as smooth and natural as possible, one researcher led the interview while the other took notes. Notes were only taken when full consent was obtained from the participant(s). At the end of each interview, we attempted to flip the balance of power by encouraging research participants to ask us any questions they wanted answered.

Method 4: Workshops

For the last phase of our research, we offered a workshop to members of the three communities we visited. Workshops can serve as a collectivist method of data collection in which the interviewer, or facilitator, directs the lines of discussion and the interactions between a group of study participants (Fontana and Frey 2000). We chose to conduct a workshop for several reasons. First, workshops are often perceived as safer and less intimidating, than one-on-one interviews (Madriz 2000). Next, because ideas and perceptions are shared in the company of peers, workshops often yield cumulative, elaborate, more accurate data (Fontana and Frey 2000; Madriz 2000). Most importantly, workshops tend to be stimulating and empowering for participants. The group setting decreases the interaction between the facilitator and individual participants, thereby giving participants more control in the content and direction of the discourse, tilting the balance of power towards the group (Madriz 2000).

The specific aims of workshop were threefold. First, we shared the results of our study of commercialisation strategies currently employed by *campesinos* in the community. Second, we solicited their help in the analysis of the data. Thus, the workshop at once provided information complementary to that learned during the individual interviews and lent greater agency to participating *campesinos* by creating a forum for participatory analysis of results and collective consideration of the present state of commercialisation initiatives in Capira. The third objective of the workshop was to thank research participants for partaking in our study and for welcoming us with such open arms into their communities. A more specific description of the workshop is provided in appendix 2.

Data analysis

In order to allow us to build on our findings, as much as possible data were analysed immediately after collection. The initial step in the analysis was data coding: meaningful segments of the text were categorised into themes. As per the guidelines for thematic analysis described by Aronson (1994), the themes were determined *a priori*, however they will remain flexible. Some themes that guided our analysis are:

- Case studies of past projects relating to commercialisation and sustainable livelihoods, including the reasons leading to past successes and failures
- Current physical and social infrastructure and knowledge relating to commercialisation of agricultural produce
- Perceived barriers to commercialisation
- Potential solutions, or ways to overcome perceived barriers, including farmer response to market incentives and market fluctuations
- Motivations to participate in commercialisation projects

- Types of commercialisation and sustainable livelihood strategies, including specific paths to commercialisation
- Types of crops produced for subsistence and/or for sale
- Other (unrelated to commercialisation) issues in the community

We wished to analyse the data with academic rigour, but also to consult the small farmers and include their perspectives on the data. Therefore, as described above, the next step in our analysis was the workshop. We presented the major themes that emerged in our research to Capira *campesinos*, and we asked them to help us identify links and relationships in the data. Their comments and insights into the data were then used to guide the final analysis of results.

Philosophical Considerations

Positionality

We strived to be as objective as possible in our research and data analysis. However, we recognize that all research is subjective and we want to make explicit our biases and their sources. First, we are doing this project for an NGO – CREA – that has already been working in this community with the commitment to sustainability, local participation, and valuing the local knowledge of *campesinos*. Therefore, all of our work was conducted through these lenses, and must be interpreted as such. Second, we have both already worked on fair trade promotion projects in Canada; through this experience, we have come to positively regard this type of commercialization and to be critical about some 'conventional' commercialization strategies. Third, despite our theoretical commitment to equity and non-hierarchical relationships between researcher and local people, our university education has conditioned us to consider experts' or scholars' publications as a more reliable or accurate source of knowledge. In this project, we tried to overcome this bias and find a balance between scientific knowledge and local knowledge by soliciting farmers' participation in all phases of the research process.

Research ethics

Careful consideration of the potential risks of a research project is essential, especially when the research involves human participants. We estimated that our study would not incur any physical, legal, and economic risks to participants in our study. The most significant risks posed by our study were psychological risks: participants might have been confused if the research and its aims were not adequately explained to them or feel bitter and betrayed if they felt their expectations were not met. Particularly, we wanted to avoid raising expectations that CREA or we might conduct a future project of commercialization in the communities. To minimize these risks, we adopted several measures. We always made clearly known who we are, what we are studying, and what are aims are. We presented ourselves as students doing an investigation with the help and support of CREA, and not as students working *for* CREA's project in the communities. In this way, we feel we avoided creating false hopes or unreasonable expectations. We also presented our results to the communities participating in the study so that they may be able to use the findings as they see fit instead of feeling like information was extracted from them for no useful reason. Finally, we are protecting the anonymity of the participants in our study by organizing the data thematically.

Minimization of risks to participants is one component of research ethics; we feel that showing appreciation is a second essential research principle. Therefore, at the end of our research period, we returned to the homes of all the families we interviewed and gave the family a card of thanks accompanied with a copy of a family photograph we took at the end of each interview. All families were thrilled to receive a family photograph, and we feel that this small token of appreciation was very effective.

RESULTS AND DISCUSSION

Why artesanal agroindustry and commercialization?

An important criticism of development projects has been that they are often implemented without adequate evaluation of their potential effects on the target communities. Therefore, before reviewing specific commercialization and artesanal agroindustry options, we discuss the relevance of income-generating strategies for rural Panama and consider the positive and negative aspects of this approach to rural development.

Why income-generating strategies?

Over the course of the last few generations, several objective and subjective changes have affected rural Panama. The 1970's witnessed a major expansion of educational facilities in Panama, resulting in a more educated, mobile, and demanding rural population (US Library of Congress, n.d.). More recently, as radios and televisions have become increasingly accessible, *campesinos* living in remote areas have become aware of the many products available on the world market and have been exposed to lifestyles very different from their own. As a result of these induced changes in expectations and aspirations, cash has become increasingly important in rural areas. Cash is required not only for the procurement of articles traditionally considered necessary by *campesino* families (tools, clothing, etc.), but also to purchase a whole new series of manufactured goods (e.g. radios, watches, etc.) and to access an ever-expanding variety of services, most notably education and health care (Heckadon Moreno 1985).

Given this trend towards the increasing monetization of rural economies, the most obvious outcome of income-generating activities is poverty reduction through the satisfaction of *campesino* families' need for cash. Our interviews in rural Capira corroborated this observation: *campesino* families stressed that cash is needed to bring sick family members to the doctor, to purchase notebooks and other supplies for schoolchildren, to pay for electricity and water, and to obtain certain household goods, such as soap, sugar, or salt.

This last use of cash indicates that the benefits of income-generating activities extend beyond purely economic outcomes. Access to cash can also improve food security in rural communities by allowing *campesinos* to purchase staple foods not produced on their *fincas*. Many, if not most, "subsistence" farmers in Panama do not actually produce all their own food; they purchase certain items from neighbours, local markets, or grocery stores. In rural Capira, rice, a staple in the Panamanian diet, is produced in very low quantities or not at all because growing conditions are not ideal.

Most farmers must purchase rice in grocery stores or *mini-supers* in Chorrera during part, if not all, of the year. A cash income is therefore needed to allow *campesino* families to meet their daily caloric needs.

Food security involves access not only to sufficient calories, but also to essential vitamins, minerals, and antioxidants. Around the world, scholars and rural development agents are beginning to recognise a connection between poverty and nutritional adequacy in rural areas (Dr. Timothy Johns, personal communication). Poverty often pressures small-scale farmers to abandon traditional systems based on polycultures and to focus instead on a few cash crops (Collins 1995). As agricultural systems are simplified and agrobiodiversity is lost, consumption of fruits, vegetables, and wild products—foods rich in vitamins, minerals, antioxidants, and fiber—tends to be depressed (Dr. Timothy Johns, personal communication). In contrast, access to a reliable cash income often promotes nutritional adequacy because farmers can afford to maintain diverse agroecosystems.

The concepts of agrobiodiversity and agroecosystems in the above discussion of food security introduce a third benefit of income-generating activities in rural areas: access to a reliable cash income can promote the conservation of environmental resources. In her review of the social causes of ecological destruction, Collins (1995) argues that the initial poverty of small producers is an impediment to sound resource management because constraints on producer income limit a farmer's ability to reinvest in the land. If farmers are faced with urgent needs (such as in the context of indebtedness or lack of food security), short-term solutions might be adopted even if they imply environmental degradation and depletion of the land in the long term (Collins 1995). Short-term solutions could be an intensification of cultivation, the constant use of land without sufficient resting time or the conversion of land and forest to pasture. The quality of the land deteriorates until, eventually, the property is abandoned and new land is sought elsewhere (Collins 1995). For example, a case study set in North-eastern Ecuador by Hiraoka and Yamamoto shows that those small farmers converting their land too quickly did not have sufficient resources to buy cows and make their land profitable. Therefore, they often had no other alternative but to sell their land and become part-time workers on bigger ranches, if not to migrate to the city (in Collins 1995). Access to a cash income is needed to provide small-scale farmers with the capital and the financial security they need to invest in their land and avoid degradation of the resource base.

A cost-benefit analysis of commercialization and artesanal agroindustry

It is clear that increasing incomes in rural areas not only contributes to poverty alleviation, but also tends to improve food security and to promote environmental conservation. We now consider the positive and negative aspects of commercialization and artesanal agroindustry as income-generating strategies. Most obviously, artesanal agroindustry has a twofold potential to further increase the entry of cash income: through the exploitation of an added value by processing the cultivated crops and by creating new rural employment opportunities (Machado Cartagena, 1997 cites Goldbery & Davis). Artesanal agroindustry can thus be a means for small-scale farmers to obtain the cash income they need. Furthermore, as the major cause of the search for off-farm employment is the lack of opportunities or income found in the country side (Collins,

1995), we can stipulate that the existence of agroindustrial projects in rural areas could slow the rate of urban migration.

The development of commercial or industrial activities in a region also often creates spill-over effects that can be beneficiary to the local population. For example, the adoption of technologies for post-harvest processing can reduce losses and decay of fresh produce, which are frequent when transportation infrastructures are limited (CEPAL 1998). In addition, the augmentation of commercial activities in an area will often justify the improvement of transportation infrastructures and give an impulse to the creation of institutions such as schools or banks (Heckadon 1985). Furthermore, if we consider that it is often necessary to undertake new commercial ventures as a group, another positive by-product is the development of local organization skills and the strengthening of a community's cohesiveness. This can lead to an increase in skills and leverage to effectively lobby the government to answer local demands.

However, the development of commercial and agroindustrial activities can also create negative spill-over effects, and it is important to take them into full consideration. When deciding to start commercializing, small farmers may be faced with increased costs for new inputs in addition to the variability of market prices received for their products**.** In addition to the challenge of finding a market to sell their products, small producers must confront the risks associated with participating in national and international markets in a context of highly variable prices and high competition. To be competitive, they have to keep their prices low and face the possibility of not being able to cover their production costs (Bacon 2005). A further factor of vulnerability is that when producing for the market—and especially when specializing in one or a few cash crops—farmers become dependent on their income and the market to provide their family with necessary food. Therefore, variability of prices in the market has a twofold effect when farmer households are relying on it as both producer and consumer. (Alarcon 1993).

Furthermore, we explained previously that commercialization and agroindustry could allow small farmers to use their land in a more sustainable manner by reducing their economic vulnerability to shocks. However, the multiplication of economic opportunities in a region can also have a double sword effect if it creates an influx of interested people and increases the pressure on scarce resources. It was observed in frontier regions of Panama that an initial extractive phase when resources are plenty and available was followed by an expulsive phase (Heckadon-Moreno 1995). Indeed, as the commercial potential of an area increases, the intensity and extent of resources exploitation often rise rapidly. As land or water resources become depleted because of overexploitation, small landholders see their harvest diminish because of the diminution of the quality of their soil. Thus begins a cycle of economic insecurity and further use of remaining resources—which results in farmers seeing themselves as faced with no other option but selling their land to larger and wealthier landowners. The end result of the expulsive phase is usually the concentration of land in the hands of a few wealthy farmers of *ganaderos*. The impact on the environment can be quite significant when the expulsive phase results in the opening and the deforestation of a new frontier area for former small landowners to colonize or in an increasing influx of migrants to urban areas (Heckadon-Moreno 1995).

A further potential risk of promoting agroindustry and commercialisation in rural areas is that subsistence or semi-subsistence farmers transferring to commercial production might be tempted to switch to the monoculture of one profitable crop. Monoculture presents risks for the environment as it increases the probability of crops having pest problems and therefore requires an increasing use of chemical pesticides (Tilman et al. 2002). Chemical pesticides and fertilizers can have negative consequences on the soil, water sources and human health.

Lastly, trade-offs between local and global sustainability must be considered. The ecological impact of any agroindustrial activity should always be evaluated and taken into consideration (IICA 1993). Packaging and transforming fresh products do enable small producers to extract higher added value for their products; furthermore, packaged, transformed products have seen their market share rise in importance in the last years. However, over-packaging is highly damageable for the environment, and strategies to reduce solid waste should promote using as little plastic packaging as possible. For artesanal agroindustry to be a sustainable income-generation strategy, the conservation of natural resources is a prerequisite (Machado Cartagena 1997). Therefore, although this kind of activity could insert itself well in a sustainable livelihood strategy program, it is unclear whether it can be reconciled with a long-term global sustainable development strategy.

Beyond all these considerations of the potential positive and negative spill-over effects of commercialisation and artesanal agroindustry projects, the feasibility of such projects must be taken into account. If obstacles to commercialisation and artesanal agroindustry are insurmountable by small-scale farmers, these latter are likely to suffer financial losses and to become disillusioned and frustrated by induced rural development initiatives. Therefore, it is essential to bear in mind that the final product of any such initiative has to be competitive enough to either create its own market or to insert itself into an already-existing market (Machado Cartagena, 1997). Some farmers have access to the necessary resources and knowledge to meet such competition requirements; others—in particular those part of a subsistence-agriculture system—are missing some assets needed to carve themselves a place in the market. Machado Cartagena (1997) argues that small-scale farmers need to be part of a greater socio-economic organization to enter the market since they are missing some necessary tools to be competitive: business skills, access to resources and credits, information about markets, capacity to maintain the quality of their products, access to technology, etc. He adds that these tools could be found in the form of an agricultural cooperative or an already existing market articulation (such as selling their products to an already existing agroindustrial project). Furthermore, it is important to note that the agroindustrial sector is not as developed in all countries. It can be composed of fairly isolated units or can be a complex web of production units interrelated through backward and forward linkages.

Nonetheless, it is believed that, with the appropriate resources and skills, an individual or group of farmers could also undertake their own artesanal agroindustrial project using the resources at hand and making links with national and international markets (IICA 1993). However, as mentioned above, small farmers are often lacking some specific skills and knowledge to carry out such activities, and it is important that they receive the appropriate support from NGO's or governmental agencies. This could take the form of capacity-building trainings, workshops, transfer of technology, provision of inputs or starting capital; or access to credit and insurances. Moreover, it is

important to take into consideration that any project needs to comply with the following conditions (IICA 1993):

- Using technologies and techniques appropriate for the local context;
- Having access to a source of capital to make long-term investments;
- Meeting quality and sanitation norms;
- Having access to a workforce with appropriate skill;
- Ensuring the proper marketing and commercialization of the final product (evaluating what is the actual demand and offer for the targeted product).

Clearly, commercialisation and artesanal agroindustry have the potential to significantly improve the livelihoods of rural populations and contribute to environmental sustainability. However, as is the case with all development strategies, numerous risks—described above—are inherent to promoting these two income-generating strategies as sustainable livelihood strategies. Clay (1996) reviewed the successes and failures of development projects promoting these commercialisation and artesanal agroindustry and compiled a list of twenty "lessons learned" with respect to the development and implementation of such projects. A summary of these twenty lessons is included here as a reference.

GENERATING INCOME AND CONSERVING RESOURCES: 20 LESSONS
Adapted from Clay (1996)

1. **View land and resource rights as essential to both income generation and conservation**
   People are less likely to invest in sustainable practices if they do not have guaranteed access to their land.
2. **Undertake a community resource inventory**
   Community resources include natural resources, human resources (labour, organization, skills, etc.), and financial resources.
3. **Start with products that are already being produced and that have markets**
   A strategy relying on a new, "miracle" product is risky not only because the product may not have a market, but also because it may require changes in local production schedules and habits. There is no guarantee that these changes will not lead to further environmental degradation.
4. **Capture the value that is added as the product travels through the market system**
   Value can be added through warehousing, transporting, trading, processing, or marketing foods.
5. **Improve harvesting techniques of existing practices**
   Improvements could include reducing post-harvest losses or maintaining natural crop stands to allow for reproduction.
6. **Reduce post-harvest losses**
   Warehousing and processing foods decrease spoilage and allow farmers to wait until the off-season to sell their produce. In this way, farmers can obtain higher prices for their products.
7. **Increase the competitiveness of a community's existing products in the market**
   Investing in strategies that decrease costs, seeking alternative traders, and using product differentiation to create new markets can increase the competitiveness of a product. Such strategies require an understanding of local, national, and international markets.
8. **Keep the strategy simple**
9. **Diversify production and decrease dependence on a single product**
   Farmers should take advantage of natural seasonality to produce multiple products for the market.
10. **Diversify markets for raw and processed forest products**
    Forest products could include medicinal or pharmaceutical plants, nostalgia foods, or personal care products.
11. **Add value locally**
    Value-adding strategies should emphasize decreasing the weight and volume of the product, increasing the number of markets to which the product can be sold, and achieving consistent product quality.

12. **Identify and use appropriate production and processing technology**
    The production and processing technology should be reliable, energy-efficient, and user friendly.
13. **Use your business to buy manufactured products in bulk for the community**
    Input costs can be reduced by buying in bulk.
14. **Know what you're selling; establish standards for each product**
    Communities must know the health and safety regulations pertinent to the product and the mean value and standard deviation of product quality.
15. **Bring other players on board: there is strength in numbers**
    Trading larger volumes through confederations of local organisations gives individual producers access to higher prices and lower costs. Furthermore, many of the skills and institutional structures needed for selling as a group can be applied to group purchases.
16. **Make a decent profit, not a killing**
    It is safer to negotiate reasonable pricing strategies and thereby develop long-term relationships with traders, distributors and manufacturers than to focus on obtaining the absolute highest price.
17. **Don't create or reinforce patron-client relationships**
    It is important that NGO's or other organisations promoting sustainable livelihood strategies in a community do not replicate oppression by funnelling power into the hands of only certain individuals or local organisations in a top-down manner.
18. **Create solutions that are equal to the problems**
    Local solution must always be developed in order to take into account the specific strengths, goals, and needs of the community.
19. **Require community investments and, when outside finance is needed, use loans, not grants**
    The more a community invests its labour, resources, and money in a project, the more likely community members will be to make it succeed. Instead of financing an entire operation, outside funding agencies could use their money to guarantee loans or leverage additional funds for the project.
20. **Establish ecological marketing systems**
    Value can be added through "green" or environmentally-friendly labelling. Such labelling requires environmental assessment and monitoring systems; it is best if local communities are primarily responsible for these systems.

Agricultural production and commercialisation in rural Capira

The previous section reviewed some considerations of artesanal agroindustry as an income-generating strategy. Now, we present the results of our interviews with small-scale farmers in rural Capira, the analysis done by the participants of the workshop, and a discussion of the more salient themes that emerged from both of these sources. We consider the case of Capira as a case study for *campesino* agricultural production and marketing in Panama; this section thus serves to present the framework in which small-scale agroindustry and commercialisation projects in Panama are located.

The following data were collected during interviews with 10 producing households in the community of Bonga Centro, 3 households in the community of La Conga and 2 communal farming projects in the community of Las Gaitas. Interviews were completed during three different visits to the communities: February 23-24 2006, March 10-11th 2006, and during the week of March 22nd to March 25th 2006. In addition, we had previously been introduced to various community members when accompanying CREA to workshops or assisting with environmental and social analyses of participating farms. At the end of our field research period, we went back to the community of Bonga Centro to present a *charla* (workshop) to all interested members of the three visited communities. During the workshop, we presented the results of our interviews and asked the thirteen participants to analyze the results obtained through various group exercises (see appendix 2 for more details on this workshop). In total, of the 47 equivalent full days spent working on this research project, 32 were spent in the field.

Bonga Centro and Las Gaitas are both accessible during the dry season and part of the rainy season by four-wheel drive vehicle or by *chiva*, pick-up trucks converted to transport passengers and the most common means of transportation. However, it is important not to forget that many houses in these communities lie far from the main road and are only accessible by foot or by horse. The community of La Conga is the most remote community we visited. There is no *chiva* service in the community and large rivers render the main road into the community impassable by car.

The three communities visited are very different; therefore, we did not attempt to do a comparative study. We instead tried to gather the most diverse information possible in order to obtain a more complete picture of the communities. A table summarising some socio-economic indicators of the households of the farmers interviewed is found in appendix 3. Throughout the text, we will refer to the persons interviewed as farmers, producers, or participants. Our interviews were usually done with both the husband and wife from the household present. In some households, women made many comments; in others, they were more withdrawn or absent. One of our interviews was with a female head of household.

Gender traditional roles are strongly defined in some households, and many men feel fieldwork is 'not appropriate' for women. Despite this tendency, we felt it was important to solicit the input of women during both the interviews and the workshop. Not only do they tend to be very aware of and concerned about issues of family and community welfare, but also their activities often indicate potential avenues for commercialisation and artesanal agroindustry projects. Indeed, we observed that many women in the community are currently involved in small-scale marketing activities: for example, selling *duros* (ice cones flavoured with fruit juice and sugar cane) and homemade bread or managing small kiosks. We had access to a lot of input of women during our workshop; half of our participants were women.

Subsistence and commercial crops found in the area

During interviews, we asked every family to enumerate the products they cultivated on their farms. We deemed it was important to gather more information about the type of production because a commercialization project will have more success if it starts by building on what people already produce and commercialize (Clay

1996). Most producers had on their farm "*un poco de todo*" ("a little bit of everything") and none was practicing monocropping. Diversification of production is a characteristic of subsistence or semi-subsistence farming. Indeed, different products are needed to feed the family; moreover, planting various crops helps reduce the vulnerability created by biophysical factors such as weather events or plant sicknesses. Conversely, concentrating solely on the production of a few cash crops can create vulnerability if the household becomes dependent on a cash income to fulfill its basic needs because the household has little recourse in the case of a decrease of yields or a bad harvest (Alacorn et all 1993).

When asked what they produced, producers enumerated a list of products, and we would often prompt them by asking if they also had this or that product we knew was common in the area. During a latter part of our interview period, we realized that some products were forgotten or unmentioned by producers. The forgotten element was often livestock such as chicken or fish, or a product that had been already harvested and would not grow back before the next season. We suspect that this might be caused by the words used to ask our question. We would usually use the sentence "*que productos cosechan"* (what products do you harvest). We adopted the formulation " *que productos tienen"* (what products do you have) when we realized that using the word *cosechar* did not include livestock or fish. Our suspicions that the list of products we gathered during the interviews were confirmed during the workshop. When asked if any products were missing from our list, participants added a few fruits we add not taken note of. Some of those such as the *marañon* tree (cashew tree) and the *guava* tree grow wild; for this reason, they might not have been mentioned to us during the interviews.

Finally, once a comprehensive list of products was obtained, workshop participants were asked to work in groups and write a list of qualities for both a product typically consumed by the family and a product that is important for commercialization. The two teams worked on the products they thought were important for those two purposes and brought up noteworthy qualities. Rice was identified by both teams as the most important product for family consumption. It was said to be a staple eaten everyday and that could easily be combined with other products, such as beans. Plantains were deemed important because they contained vitamins and iron, which are important for the family. The nutritional qualities of ñame and other tubers were also mentioned.

For the cash crops, it was explained by one team that coffee was the one product bringing the most income to the family because it had a higher value on the market. Chickens were also mentioned as a product that sells rapidly within the community. Yucca was brought up by both teams; cited advantages include ease of production, and the possibility to harvest and sell all year long. Finally, one team also chose *ñame* as a good product for sale because it fetches a higher price on the market that does yucca.

We have come to observe what we term 'the yucca paradox'. During our interviews and the workshop, we heard many contradictory comments made on the characteristics of this product as a cash crop. On the one hand, during the interviews, most if not all of the farmers decried the low price obtained for yucca sold in the *Mercado Abastos* in Chorrera. It was explained that the money received often did not cover transportation costs: "*El transporte cuesta más que lo que pagan"*

("transportation costs more than what they pay us") and that, in some occasions, they even *"habían que dejarlo porque no se vende"* ("had to leave it there because it did not sell"). We were even told that some people were considering stopping producing yucca for the market because it was simply not a worthwhile activity.

On the other hand, farmers continue producing yucca in great quantities, and participants of the workshop chose to present it as one good cash crop during the group exercise. Both teams mentioned that yucca was easy and rapid to sell. One team specified that the yucca produced in the area was abundant and of good quality. Furthermore, they said that it was fairly free of diseases; easy to grow; and easy to weed. We suspect that these biophysical characteristics—in addition to a cultural preference for yucca—may explain why such a seemingly paradoxical pattern may arise.

Figure 2: Households' Production in Bonga Centro and La Conga*

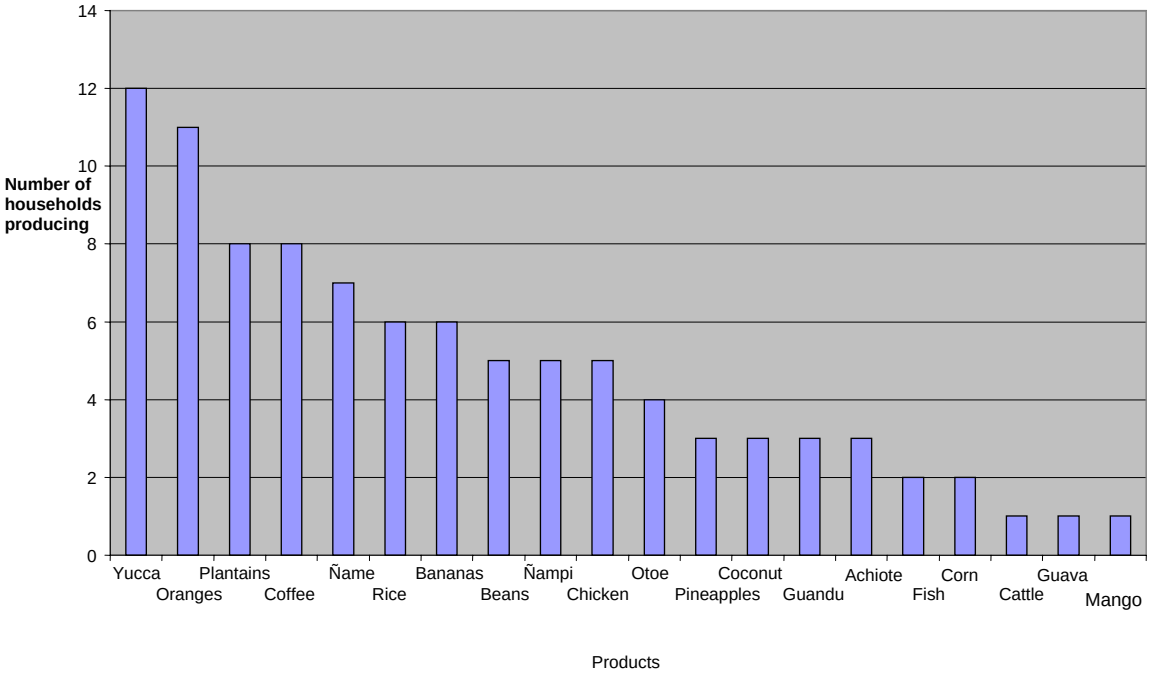
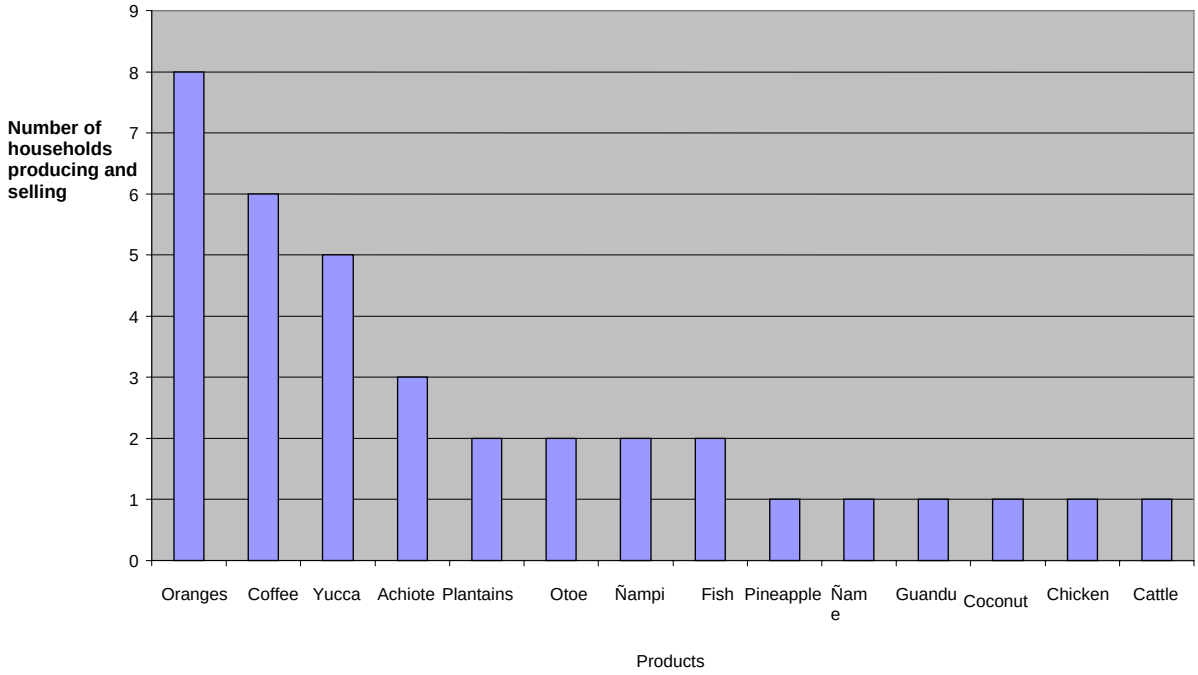


Figure 3: Households' cash crops in Bonga Centro and La Conga*



* Data collected from the 10 households surveyed in Bonga Centro and 3 households surveyed in La Conga. During the workshop and from our observations, we gathered a more thorough list of the products found in those communities.

Table 1: Products cultivated in the Granjas

Granja de Bonga Centro	Granja de Las Gaitas
Pineapples	Pineapple
Plantains	Yucca
Coffee	Plantains
Hot pepper	Rice
Beans	Green beans
Chicken	Peppers
	Chickens
	Bananas

* The Granjas' first mandate is to improve rural families' nutrition and therefore the crops chosen were targeted at subsistence needs. However, various projects have recently undertaken a commercialization component. Coffee and especially pineapples were their main cash crops in the two Granjas visited.

Marketing channels

During our interviews, we identified diverse marketing channels used by small-scale farmers in rural Capira. To help make sense of all these strategies, we classified their marketing channels as "active" (routes that involve the farmers themselves transporting products to a market where they can be sold) or "passive" (routes that do

not require the farmer to leave the community and that demand relatively little time and energy).

Active routes

Mercado Avastos in Chorrera

Selling agricultural produce in the Mercado Avastos in Chorrera is the most common marketing strategy. The Mercado Avastos is a large outdoor market where agricultural products from all over Panama are bought by intermediaries and then resold in bulk to large buyers. To sell yucca—the main product sold by Capira *campesinos* in the Mercado Avastos—producers leave early in the morning (as early as 3:00 am) for Chorrera. If they are transporting only a small quantity of goods, producers can ride on the regular *chiva* and pay their fare (between $2.00 and $3.00) plus $1.00 per quintal (100lbs) of yucca. If they want to bring large quantities, they must cover the price of contracting a *chiva*. Often, the drivers of the *chivas* do not own the vehicle, but are *peones* (contracted wage labourers).

Once in Chorrera, farmers sell their yucca to intermediaries in the Mercado Avastos who will then resell the yucca to restaurants, small grocery stores (*tienditas* or *Mini-Supers*), or women who own small kiosks in the nearby Mercado Público. Most producers claim that selling yucca in Chorrera is not worthwhile because the low price they receive does not cover the price of their transportation. Other times, no buyer can be found and producers are forced to simply leave the yucca with an intermediary in the market, receiving only a token amount of money (as low a $1.00 per quintal) in return.

While the producers we interviewed most often spoke of selling yucca in the Mercado Avastos, this tuber is not the only product Capira *campesinos* sell in the Mercado Avastos. We were specifically told that *achiote* and oranges we also sold in the Mercado Avastos, and we suspect many other products (such as bananas, *ñame*, *ñampí*, *otoe*, and plantains) are also sold there.

Specific buyers

Instead of selling agricultural products to intermediaries in the Mercado Avastos, some farmers sell directly to specific buyers in Chorrera. One family in Bonga Centro has decided to stop producing a surplus harvest to sell in the Mercado Avastos and intead focus on raising chickens, which are sold to specific buyers in Chorrera.

Coffee is perhaps the best example of a product sold to specific buyers. Several producers go to Chorrera to sell coffee directly to Café Duran. A group of farmers working for the *Proyecto San José* in Las Gaitas explained to us that they needed to bring the coffee to Chorrera because Café Duran does not send vehicles all the way to their community to collect the coffee beans.

Alternative routes

Three producers market their produce through channels that we have labelled "alternative routes". These marketing channels they have found offer a real alternative to the more common, but more resented, strategy of selling products through a series of

intermediaries. The first alternative route is through non-monetary exchanges. In response to the frustration associated with finding a buyer willing to pay a reasonable price, one farmer has decided to 'give' his surplus production to family members living in the city instead of selling it on the market. Every time he goes to visit his family in the city, he brings along some coffee, bananas, yucca, or other staple food. Although there is no formal agreement for payment, it is understood that, in return, family members will give him some household goods, or a little money to buy such goods.

Similarly, the second alternative route also relies on family networks. One producer sells *otoe* and yucca in Los Altos de San Francisco, a small community near Chorrera. His daughter lives in the community, and he can sell directly to her friends and neighbours. All parties are satisfied with the arrangement: eliminating intermediaries from the marketing process at once allows the producer to receive a higher price for his products and consumers can purchase at lower prices than would be encountered in the other markets.

Finally, the third alternative route is to seek an added value market. To obtain a higher price for the pineapples produced on his *finca* this year, one farmer went to Panama City to meet with a buyer he knew would offer him a better price than would be received in Chorrera. He believed that the buyer was willing to pay a higher price because she sold the pineapples in slices (added value) and because she was committed to helping small producers. This marketing channel also eliminates all but one intermediary between producer and consumer. The effort invested in finding this added value market has proved to be worthwhile: including the price to pay for transportation, he received $0.40 per pineapple. Selling in Chorrera, he would have received approximately $0.19 per pineapple.

Passive routes

Large-scale purchases

Large-scale buyers will sometimes come on the main access road to Bonga Centro to buy directly from the farmers. Oranges are the most common product sold in this way; one family can sell between 1000 and 3000 oranges per year to large-scale buyers passing through the community. More isolated producers without road access have to bring their oranges, by foot or by horseback, to the main road. Contracted buyers will then purchase the oranges and sell them to another intermediary in Chorrera.

Although coffee is sometimes brought to Chorrera to be sold, the beans are most often purchased by a large coffee company (usually Café Duran). The company will either come directly to the *fincas* to collect the coffee, or will pay for the transport of the beans out of the community. The price obtained for coffee ranges between $50 and $120 per quintal, and varies significantly according to world prices. Most farmers prefer to sell their coffee in semi-processed form: coffee is dried on a plastic sheet and then brought to the *piladora* to have its husk removed. A private entrepreneur owns the piladora, and producers must pay between $2.50 and $3.00 per quintal of coffee processed. Four farmers we interviewed maintained that the effort and money invested in processing is worthwhile because a semi-processed coffee fetches a higher price (this year, between $70 and $75) than do unprocessed beans. However, one producer

preferred to sell unprocessed beans. She explained that, when only small quantities of coffee are being sold (less than five quintals), it is not profitable to sell husked coffee.

Small-scale purchases

Large-scale buyers and private companies are not the only actors who will travel to the farms to purchase agricultural products. Producers will often display their products in front of their homes to attract people passing through the community. In this way, a few pineapples, a couple of pounds of plantains, or a dozen oranges can be sold to school teachers, construction workers, or city dwellers out for a day in the country. This marketing strategy is usually employed when only relatively small quantities are available and a trip to Chorrera by *chiva* is not worthwhile. Importantly, this strategy is only available to producers living along the main access road: it is unlikely that anyone will pass by a house situated in a pasture half an hour away from the road.

Farmers also take advantage of special occasions to sell products to members of their families or of neighbouring local communities. During Carnival week (the Friday to the Tuesday before Ash Wednesday), one household invited a religious musical group and sold *agua de pipa* (coconut juice) to the spectators. Similarly on the Thursday of the *Semana Santa* (the week of Easter), one of the holiest and most celebrated times of the year in Panama and particularly so in Bonga Centro, two households took out the *tilapias* from their fish ponds and sold the fish to local community members. The fishes sold very well, probably because of the tradition of not eating meat on Good Friday.

Alternative income-generation strategies

Nearly all the farmers we interviewed sell at least a small portion of their harvest to obtain the money needed to buy clothing, seeds, or food items not produced on the farm. However, three families we met do not market any of their produce. One farmer is not selling yucca, plantain, or coffee this year because the low prices offered and the lack of buyers make marketing activities unprofitable. A second farmer produces only for family consumption because it was not in her 'habits' (*costumbras)* to sell. Her family lives very far from the main access road and does not own a horse. Therefore, transporting products to the main access road where they could be picked up by a *chiva* would be a very arduous (if products were transported by *motete*) or expensive (if a horse were rented to carry the products) task. A third producer does not sell any portion of his harvest because he felt he did not have any time to dedicate to commercialisation. He was very old and felt that, at his age, transporting his products by horseback to neighbouring communities where they could access a *chiva* required too much time and energy.

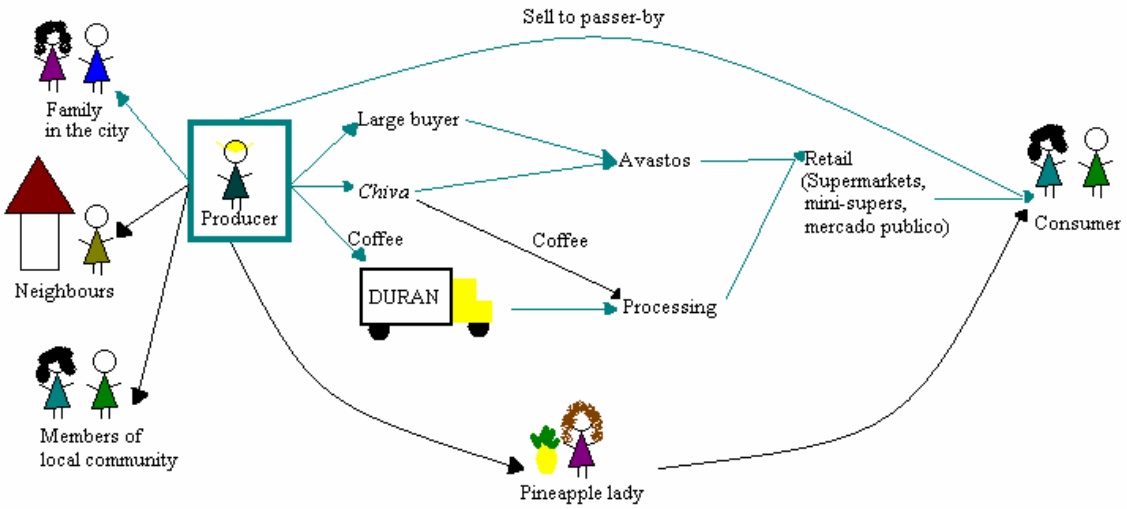
As explained above, the monetisation of rural economies in Panama makes cash indispensable even to small-scale subsistence farmers. The three families we interviewed who do not market any of their agricultural produce must, therefore, engage in some other income-generating activities. The first farmer satisfies his family's need for cash by raising cattle for sale; he also owns a small kiosk selling soft drinks, sweets, and a few other minor household items. It is not clear to us how the second and third producers access the cash they need, but, based on the closeness of family ties we

observed in the communities of Bonga Centro, Las Gaitas, and La Conga, we suspect that they may receive necessary household items—or the money necessary to purchase these items—from family members living in the city.

Principle marketing channels

The marketing channels we identified during our interviews are presented diagrammatically in figure 3. The diagramme captures the diversity of strategies Capira *campesinos* use to market their surplus production and illustrates how the presence of intermediaries lengthens the food distribution chain. The four most important marketing channels (bringing products to the Mercado Avastos in Chorrera; selling to a large-scale buyer who comes right to the home; selling small quantities of product to passers-by; and trading surplus production for household necessities) are highlighted in blue in the diagramme.

Figure 4: Marketing channels for agricultural produce in Bonga Centro, Las Gaitas, and La Conga.



We presented the four main marketing channels to the participants during the workshop. To help explain the notion of marketing channels, we illustrated one such channel using a series of drawings. The group of participants was subsequently divided in two teams with the task of deciding upon the ideal commercialization route. They drew it on sheets of paper; at the end, one representative of each team presented their results to the rest of the group. The drawings produced by one of the teams are included in appendix 4.

The first team started with a farmer in his field, harvesting yucca. Second, the yucca is transported to the road by horseback, to then be loaded on to a *chiva* and brought to a supermarket (the *chiva* they drew was loaded to full capacity with bags of products). In this case, the supermarket was identified as *Super Xtra* (a local low-cost supermarket chain where most of them probably do their shopping), and it was explained to the group that the farmer had a contract with them to be providing high-quality yucca.

The second team started with a horse transporting products from the field. They wrote on the drawing that the animal was "*cargando mucho producto!"* (transporting a lot of products). The product was then brought to a local farmer's home and displayed in front of the house with an sign advertising: *"Se vende verduras y frutas"* (Tubers and fruits for sale). Examples of products they drew were yucca, *ñame* and oranges. The third illustration shows a *comprador* (buyer) coming in with his truck to buy the fresh products directly from the producer. Finally, the *vendedor* (producer selling the products) and *comprador* negotiate a price for the transaction.

Dependence of marketing channels on type and quantity of product

We observed that the marketing channel chosen depended in part on the type and quantity of products sold. If farmers have only a small quantity of products to sell, they will most often sell it to buyers who come to their home—whether the buyer is a neighbour or comes from outside of the community. Only when they have a large quantity of produce to be sold do they contract a *chiva* to go to Chorrera. This pattern could be explained by the need to sell a significant quantity of products in order to earn a sufficient amount of money to cover transportation costs (in addition to time and labour costs).

Larger buyers do come in to buy specific products at certain times of the year. For example, oranges are most often purchased by large buyers who come to Bonga Centro. Thus, the farmers only have to transport their oranges to the side of the road. However, even this can be a demanding task for those households living farther away from the main road. Coffee is another example of a product sold through a passive marketing channel, as Café Duran and other companies will send trucks to gather coffee beans in the communities. On the other hand, yucca is an example of a product that must always be brought to the market in Chorrera. This could be explained by the high abundance of yucca on the market, especially since the opening of the Darién agricultural frontier. Indeed, it is not a necessity for Chorrera buyers to put the effort into sending trucks to remote communities in Capira since the supply of yucca is so high.

The strategies of commercialisation are different at the individual versus the group level. Indeed, more market options are available to groups because of the quantity they can offer to buyers. In both Las Gaitas and Bonga Centro, the community *granja* (sustainable community farm) produce upwards of 12,000 pineapples per year. Because they have such a high quantity, they were able to obtain a higher price for their production. In the case of Las Gaitas, the pineapples were sold directly to *Frutas d'l Edén*, where they are being processed and sold on the national and international markets. The extraction of a surplus value on their products permitted them to obtain a higher price. This is for them an incentive to produce more (as they have a reliable buyer for their products) and also to form associations with other *granjas* to be able to supply in sufficient quantity and regularity.

Farmer responses to intermediaries

One of the main complaints from farmers in Capira is that the intermediaries offer them very cheap prices and resell their products at a much higher price. Thus, they claim the intermediaries keep all the money earned thanks to the labour of the

campesinos. It was said to us that "*los intermediarios nos están robando"* ("the intermediaries are robbing us"). However, some farmers have already found ways to sell directly to consumers, eliminating the need for intermediaries. This can be done by selling to friends and family members living in the city (usually in Chorrera).

As mentioned above, products can be sold to passers-by. This is especially true for attractive fruits such as pineapple and or for leftover of surplus production that was not sold to the bigger buyers. Moreover, this is most common on special occasions when a lot of people visit the countryside and want to treat their families to fresh, local products. Non-monetary exchanges are also possible and are most common among those living far from the main road. Indeed, it was observed that the most remote households concentrated their production more on subsistence than on commercial production. One family explained to us that they preferred to give their surplus produce to family members living in the city. It was understood that in return they would receive from them some necessary household items such as salt or sugar, or some money. This preference for a non-monetary strategy could be due to the many obstacles making commercialisation more time-consuming and labour-intensive in less accessible areas, and thus economically less profitable.

Ideal marketing channels

During the workshop exercise on marketing channels, one of the two teams completely eliminated the intermediaries usually present in the food distribution chain. The other eliminated the need to go to the market in Chorrera. Earlier in the presentation, many participants mentioned loving to work on their *finca*; therefore, the preference for working in the field over transporting goods to the market may explain why they chose to eliminate the step of going to Chorrera. Furthermore, both groups put a lot of emphasis on the part of getting the products out of the field, and both drew a very loaded horse. This could indicate that this step requires a lot of time and effort. Commercialisation strategies have to take into account that producers perceive that the time and labour costs associated with selling are not limited to going the market and the act of actually *selling*, but also include getting the products from their fields to the road.

Another aspect the participants of the workshop emphasized was their desire to sell high quality products to a stable buyer. They are very proud of their products and would like the quality to be recognized by the buyers. They often praised to us the many qualities of their yucca such as its freshness, taste, texture and whiteness (*"bien blanquita").*

Neither of the routes chosen by the participants emphasized group work nor addressed all the major issues identified by farmers during interviews. The passive route depicted by the second team does eliminate time and labour costs, but it does not remove intermediaries from the food distribution chain. Although it is more direct, the "supermarket route" chosen by the first team does not address the problem of transportation costs and does not include group selling, which would give producers greater negotiating power. In a discussion after the workshop, Samantha, a local Peace Corps volunteer, commented that the introduction of new ideas is often difficult because farmers hold strongly to their production and marketing strategies. Clearly, any commercialisation or agroindustry strategy will have to take into account local

traditions and customs, and build on the communities' strengths and knowledge rather than begin something completely new.

Obstacles to commercialization

Obstacles to commercialization of production were identified during interviews with the farmers and through direct observations and experience. Moreover, during the workshop, farmers were asked to weight these obstacles by placing from 0 to 5 beans according to their perceived relative importance (see appendix 2 for more details on the activity). Table 2 lists the obstacles identified and the weight accorded to them by the workshop participants.

Table 2: Obstacles to commercialisation of agricultural production, and the perceived importance of each.

Obstacle	Number of beans	Rank
Low prices	18	1
Variable prices	17	2
Damaged road or limited accessibility to the road	17	2
Biophysical limitations	13	3
Lack of community organization	11	4
Competition from bigger producers or imports	10	5
Lack of support from the government	9	6
To meet market requirements (quantity and quality)	7	7
Long time to go to the market	6	8
Transportation prices	6	8
Customs and traditions	3	9

Biophysical factors

Two households explained that one of the main cash crops in the area—coffee—could not be grown on their land because it was too dry. One of them explained that, although they had in the past sold oranges, they had not participated in any commercial activities in recent years because the trees had stopped producing. They do not know why this has occurred. However, to fill their need for a cash income, the father was selling *Jaba*, which are baskets made of vines and used for planting or harvesting. Another farmer explained that he had, in the past, lost all of his production of *otoe* and yucca, but that this situation had since resolved itself. Yet another household mentioned that water scarcity permitted them to produce corn in quantity sufficient only for their family's consumption. They could not produce any surplus corn for sale. Indeed, corn is not a major crop in the area whether be it for subsistence or commercial production. Sometimes, land quantity (and not land quality) limits the ability to produce for the market. A few households explained that the small size of their property limited their potential to produce for the market as they have the necessity to feed their families first.

Although our investigation was not focused on livestock production, some families received a significant share of their income from this activity. However other families had abandoned livestock production because of livestock diseases in the past. On the other hand, almost all families had at least a few chickens for family consumption and in some cases for sale.

Biophysical limitations were not especially highlighted during the interviews. However, during the workshop obstacles ranking activity, biophysical limitations were ranked as the third most important obstacle, with 13 beans.

Physical infrastructure-related

The access road is perhaps the most obvious obstacle to the commercialization of production in the area. The road is very bumpy, curvy and steep. Even in the dry season, part of it is flooded, and we were told that, when it rains daily, the roads to some communities such as Bonga Centro become impassable. Every family we interviewed stressed the importance of the *carretera* as an obstacle, and most of them stated that, for the situation of commercialization to improve, it was necessary that the *carretera* be improved first. One of the negative consequences of the poor road conditions is that products get damaged en route to the market. Thus, the products fetch a lower price in the market or cannot be sold at all. Although some repairs are currently underway, there are no plans to pave the road all the way to Bonga Centro.

Furthermore, some houses are not situated along the main road. The farmers living far from the main access road must put additional labour efforts to transport their products to the access road. This often implies transporting very heavy loads by horse-back or *motete* (a wooden basket worn as a backpack) through pastures or along uneven terrain, and across significant distances: some houses lie more than an hour walk from the main road. During the workshop, the poor road quality and limited accessibility were ranked as the second most important obstacle to commercialization.

Another consequence of limited accessibility to transportation infrastructure is the high cost of transportation. *Chivas* are operated by private owners and driven by *palanceros,* contracted drivers. Table 3 illustrates the costs for different products and quantities. Even though the high costs of transportation were condemned by producers during the interviews, only six beans were placed upon the image illustrating this obstacle during the workshop, ranking it as the eighth most important obstacle.

Market-related

Four market-related obstacles were identified: low prices; variable prices; strict market requirements to be met; and competition with bigger producers or with imports. Farmers complained of prices so low they did not even cover transportation costs. Many farmers told us they would leave in *chiva* very early in the morning (as early as 3:00am) to go to the *Mercado Abastos* in Chorrera. There, farmers often have to wait long hours trying to find a buyer willing to pay a reasonable price. However, at the end of the day, they often have to accept only a small token amount of money—otherwise the product could

Table 3: Sample prices of transportation costs.

Passenger/product being transported	**Approximate *chiva* fare**

Passenger: one-way trip from Bonga Centro to Chorrera	$2.00 - $2.50
Passenger: one-way trip from Las Gaitas to Chorrera	$3.00
12 pineapples	$2.00
100 lbs yucca	$0.50 - $1.00
100 lbs coffee	$3.00

not be sold. This problem is especially acute with yucca, for which farmers have sometimes to accept prices as low as 1.00$ per one hundred pound bag. In addition to having to pay for transportation and cost of a meal in Chorrera, there is an opportunity cost in labour for the day spent at the market instead of in the field. Because of the high opportunity cost and low prices received, farmers have a disincentive to produce for market purposes. One farmer to us: "*la gente sigue trabajando y nadie ha dejando de producir, pero están pensando en dejar de trabajar porque no reciben buen precio.*" ("people keep on working, and no one has yet abandoned production, but they're thinking about stopping working because they aren't receiving a good price.") In a similar line of thought, one producer told us that one advantage of selling products is the motivation to plant more and financial capability to invest in seeds or land acquisition. Low prices emerged as the most significant obstacle to commercialization during the workshop and earned 18 beans.

The variability of prices on the market compounds the challenges arising from the low prices obtained. Although prices for products, such as yucca, can be predicted to be low, prices for other products can vary between good and selling at a loss. For example, although coffee is generally a profitable cash crop, prices vary between $50.00 and $120.00 per quintal. Currently, it ranges between $70.00 and $75.00 per quintal for hulled coffee (which is deemed as a good price by the farmers with whom we spoke). Various producers told us they wanted to plan for the future to ensure their family's well-being. However, the farmers stressed that not knowing how much will be received creates insecurity. We imagine that the variation of prices is an obstacle to long-term planning and investment. Unpredictable prices could not only create economic insecurity and vulnerability, but may also influence the sustainability of land-use practices (Collins 1995). Variation in prices was ranked by the participants of the workshop as the second most important obstacle—tied with the bad road infrastructure (both had 17 beans).

On the other hand, one farmer stressed that the problems with low and variable prices can be overcome if effort are put into finding a good buyer. He gave the example of when he contracted a *chiva* and went to meet with a woman in Panama willing to buy pineapples from small producers at higher prices. The buyer is able to pay him a higher price because she adds value to the product by selling them at $0.25 per slice in the streets of Panama. He now receives $7.00 for a dozen pineapples, while his old price was on the order of $4.00 per dozen. He is now trying to find better market opportunities for his yucca and *ñame*.

Small-scale producers must also face stiff competition. One producer explained that other farmers produced more cheaply and in greater quantities because their farms were larger and more mechanised. He labelled the opening of the Daríen agricultural frontier as a major source of competition. He worried that, if Panama signs the Free

Trade Agreement with the USA, the price of cattle would decrease, and small farmers would be unable to sell their rice as the market would be flooded with cheaper, longer grained rice. Another farmer explained to us that weather and production conditions in bigger coffee producing countries, such as Brazil, could cause coffee prices to drop drastically, making this activity unprofitable. Market competition was ranked as a medium obstacle during the workshop, with 10 beans (number 5 in ranking).

Finally, meeting market requirements can represent a considerable challenge to small-scale producers. To obtain a good price or a good contract, farmers have to offer a considerable quantity of high quality products. Because their farms are relatively small, and because they have access to only a limited amount of inputs and labour, farmers can often not produce in sufficient quantity to meet buyers' requirements. One household told us that the export market offered a much better price for pineapples, but that it required great quantities—10,000 fruits per year at a minimum. In addition, as mentioned above, although farmers in the area produce high quality products, their quality often deteriorates before the products arrive at the market because of inadequate transportation and storage. Furthermore, we were told that additional aesthetical requirements often discriminate against products that have minor imperfections (such as some coloured spots on yucca) but that, otherwise, are very good products. Meeting market requirements was judged as a minor obstacle with only 7 beans and ranked 7th.

Farmers explained market mechanisms in clear and simple words. For example, they knew about competition and the factors that make a producer competitive. They also have knowledge about the pending Free Trade Agreement with the USA and were aware of its potential effects. They can identify which products are the best for commercialisation (coffee and pineapples were identified as the most profitable cash crops) and are aware of which "new" or "hot" products had the potential to fetch a good price on the market. Sometimes, they answer to such market incentives. For example, a farmer starting a sylvipastoral project introduced achiote and *limon persa* (citrus) into the pasture even though these products are not traditional in the region because he perceived that "*tienen un buen mercado*" (they have a good market). Sometimes, however, they do not respond to market incentives. For example, as discussed above, they continue to plant and market yucca even though they cannot be competitive, and receive a cheap price for it. We ask ourselves what role traditions play in farmers' responses to market forces and preferences for some crops over others. Moreover, although they decry that intermediaries are "*robando al pobre"* ("stealing from the poor"), most, if not all, still market their products through intermediaries and no one told us they would prefer to organise collective transportation or sell as a cooperative. In addition, during the workshop, one group included an intermediary in their ideal marketing channel. However, it is important to take into consideration that although they are aware of all these issues, they may not feel empowered to respond accordingly. Furthermore, many basic problems, such as health and education issues, must be tackled in their communities. We would not be surprised if they would prefer to address these priorities before seeking new, alternative marketing channels.

Labour related

During our interviews, farmers made us aware of two labour-related obstacles to commercialisation: time required to go to the market, and customs and traditions. As mentioned above, because of a lack of adequate transportation infrastructure, bringing

products to the market requires a lot of time. From Las Gaitas—the community lying the farthest away from Chorrera of the three communities we visited—it takes about 90 minutes to get to Chorrera. For families who live away from the main road, duration of this trip could be extended to some two and a half hours. Given the time needed for the return transportation and to find a buyer, going to the market corresponds to at least one full day of work. Some farmers explained that they leave at 3:00 am to reach the market in Chorrera early in the morning. Others leave for two days and take advantage of their time in Chorrera to visit family or to buy household necessities. Producers who went to the market said, in general, they go every eight, fifteen, or thirty days. Given the fact that some producers mentioned being short of labour, taking a day off to go to the market has a significant opportunity cost. Finally, one elderly couple we interviewed said that, although they could still work their land, they were too old to spend such time and energy going to the market. During the workshop, participants did not rank the time needed to go to the market as an important obstacle. They gave it a total of 6 beans, which makes it the obstacle of second to last importance.

The role of customs and traditions as an obstacle to commercialisation is somewhat unclear. All farmers except for one sold at least a small portion of their production. Indeed, one farmer told us that: "*siempre era así, que habían que vender*" ("it was always like this, that they had to sell"). However, on the other hand, one household told us that traditions of *not selling*, but instead producing solely for family subsistence, was one main obstacle to commercialisation. This specific farm was situated in an area quite far from the access road, and a long journey by horseback would have been required to just get their products to the closest *chiva*.

The adoption of new products or techniques might be helpful to sell more products and seize market opportunities. However, traditions may impede such changes. When asked if she thought if commercialisation opportunities would improve in the future, one producer responded that it was difficult to know. She commented that others were planting new products and changing the way they were working; however, she added that these changes happen slowly and suggested that "*quizas los nietos podrán adoptar esa forma de trabajar*" ("maybe the grandchildren can adopt these new ways of working"). During the workshop, traditions were ranked as the least important obstacle: only three beans were placed upon it. Moreover, these beans were not placed by local farmers, but by Samantha Bartling, the local Peace Corps volunteer. In a discussion following the workshop, she expressed to us how, during her efforts to introduce new sustainable agriculture techniques, she observed the strength of the force of tradition. We feel that, even if it was ranked last, it is a significant obstacle. Traditions are usually something very innate to a community or group of people; and, as such, may be difficult to perceive from within. Alternatively, traditions might not have been perceived as an obstacle because they are valued as a positive force in the community. It is thanks to agricultural practices passed on through generations that farmers can feed their families with a wide variety of high quality products. More than one producer expressed pride about sharing their pleasant community and delicious fruits with us.

Institutional factors

Community members generally agreed that better institutional infrastructure is needed to improve commercialisation opportunities. There seems to be a divide as to

whether the institutional support should come from the government or from organizations within the communities. Some farmers interviewed strongly argued that the government was not fulfilling its responsibilities to rural populations, and least of all to small farmers. They blamed the government for the low prices received for their products; they argue the government should intervene by setting adequate minimum prices. They seemed to interpret the government's failure to intervene as evidence of neglect of rural populations' interests. Another producer cited the "*injusticia del gobierno*" (government's injustice) as one of the two most important obstacles to commercialisation. While others might not have been so overt, various producers voiced concern that the government seemed to favour large producers and urban populations over small-scale farmers in rural areas. Many times, the poor state of the road and the lack of adequate health and education services cited as evidence of this neglect. The lack of help from the government received 9 beans during the activity, putting it as an obstacle of medium importance at the 6th rank.

On the other hand, other farmers identified a lack of local community level institutions and organisations as an obstacle to obtaining more stable and profitable market opportunities. For example, selling as a group permits small-scale farmers to offer larger quantities, thus allowing farmers to access a wider selection of markets. One farmer explained that the power of community organization has already been proven in Bonga Centro. The community obtained electricity a few years ago by submitting a collective demand to the government. Similarly, community members in Bonga Centro have access to running potable water because a local committee took the initiative to build and manage a local aqueduct (the only input from a state agency was the necessary piping).

The roles and responsibilities of the government versus those of the community were debated during the workshop. Two participants voiced their concerns during the presentation of the list of obstacles we had identified during our interviews. One emphasized the need for greater government intervention; in response, another community member argued that the communities should not rely on the government's help and should instead independently take initiative to define their own futures. Although lack of community organisation did not emerge as a significant obstacle to commercialisation during the interviews, this obstacle was ranked as the fourth most important obstacle, with 11 beans.

It is clear, in our opinion, that both institutional obstacles are significant. The strengthening of both local and governmental institutions in rural areas could greatly improve commercialisation opportunities, whether be it by directly intervening in commercial processes or by helping communities meet their basic needs, such as health and education.

Other problems in the community

It is important to remember that previously enumerated obstacles to commercialisation exist only in the shadow of the more basic problems in the community. Many producers interviewed, especially women, decried that access to basic services was lacking, and that the lack of health and education services was particularly acute. There is no permanent doctor in the local health centre, and reaching this centre is very difficult because of poor transportation infrastructure. Indeed, there

is no designated vehicle in cases of emergency; therefore, people must rely on unpredictable and uncomfortable *chiva* service. We were told that women still died in childbirth because of a lack of medical attention.

Access to education is very limited in Bonga Centro—our main study site. There is a primary school in the community, but classes are often cancelled when the teacher is sick or unavailable. After 6th grade, children have to travel to Bonga Abajo (about 30 minutes away) where they can study till 9th grade. Those who wish to complete their secondary education can go to *Telebásica* in Nueva Arenosa, but few do so because of the significant distance to travel and associated transportation costs (about one hour in a *chiva*, at an approximate cost of $1.00).

It is also important to note that, while some houses do have access to running water and electricity, many still lack access to these basic utilities. Many families live too far from the road or cannot afford the connection fees.

Benefits of commercialisation

Commercialisation can help address some of these basic needs. All farmers interviewed stressed that the money obtained from selling their products was necessary to provide their families with basic goods and as a security in cases of health emergencies. Food was one of the main expenses mentioned. Although all families are engaged in subsistence agriculture, some basic staples such as rice, salt, meat and sugar still need to be bought. Thus, one of the main perceived benefits of commercialisation is to improve family nutrition. Furthermore, although primary education is free in Panama, there is required material to buy such as books, school uniforms or pencils. Money was also said to be used to reinvest in agriculture inputs such as machetes, clothing to protect against the sun, seeds or land.

In Bonga Centro, one farmer stressed that commercialisation was only able to yield these benefits because families spent the money earned from this activity wisely. He spoke of a 'created poverty' when men spend all of their money on alcohol or other 'bad investments' instead of investing in their family. In this particular community, the Church, particularly the Evangelical Church, has played a major role in promoting such family values and eliminating all alcohol consumption. It is important to consider that in communities where alcohol or gambling problems are important, commercialisation might create more problems than it solves if money is not spent for the benefit of the family.

Collective production and commercialization projects

During our research period we visited three communal farming projects: Proyecto San José, Granja de Bonga Centro and Granja de Las Gaitas. Sponsored by the Natura Foundation, the Proyecto San José is an association of producers in Las Gaitas. They focus on reforestation activities, organic composting and *arroz en fangueo* (water-grown rice). Both women and men work in the field in this project. They receive a cash salary for their work, and a series of workshops on sustainable agriculture techniques is also being given. Although this project does not have a strong commercialisation component (each member has his own farm and in general their main

cash crop was coffee), it seems to help by offering capacity-building. They learn how to manage a budget, organize events, and work as an organised group.

Granjas de Producción Sostenible (*granjas*), are an initiative of the Patronato de Nutrición, a Panamanian NGO created in 1990. *Granjas*, or sustainable communal farms, are parcels of land between five and twenty hectares in extent worked by groups of ten or more *campesino* families. The primary objective of the *granjas* is to build the capacity of *campesinos* living in areas of poverty or extreme poverty to produce staple foods (such as rice, corn, beans, roots and tubers, plantains, eggs, chicken, pork, and local fruits) efficiently and sustainably. In this way, the Patronato seeks to improve food security and family nutrition. The second objective reflects the truth that basic needs extend beyond the need to eat healthily: people need shelter, clothing, and access to health care, education, and other services. Thus, the second objective of the *granjas* is to help *campesino* families generate the income to meet these needs.

In the Granja de Bonga Centro, twelve families are members of the group and work together every Thursday. Although they raise chickens and grow some staple crops such as plantains, hot peppers and beans; pineapples are the main crop being cultivated. This year, they have harvested 12,000 pineapples and have already sown another 12,000. The Granja is sponsored by the HSBC bank (the bank provides funding for inputs and transportation); furthermore, some of their production is sold directly to the bank employees. Thus, the Granja has a reliable buyer and eliminates intermediaries from the food distribution chain.

The Granja in Las Gaitas shows a high level of organization and counts 23 male members and 17 female members. They work together twice a week (every Tuesday and Thursday): men work in the field and women cook. Their production is a mix of subsistence and cash crops. As in Bonga Centro, pineapples are the main cash crop. They harvested 14,000 this year and plan to increase production next year. They focus on finding a variety of marketing strategies such as negotiating direct contracts with supermarkets participating in the Feria Annual de Chorrera (largest agricultural fair in Panama), selling in the *Mercado Avastos* in Chorrera and Panama. More recently, they obtained a contract with Mitzy de Medina from *Frutas del Eden* (see appendix 5c for more details on this enterprise). She comes directly to Las Gaitas to buy the pineapples, and then processes and exports them. The Granja is very pleased to have found this market opportunity because they have a guaranteed market for their products and receive a more stable, higher price. They explained to us that working as a group enabled them to seize this market opportunity because they can produce in sufficient quantities to supply a transformation and export business.

Obstacles encountered in the field and sources of error

Throughout our field research, we encountered many obstacles. While these obstacles did pose challenges for us, they also allowed us to better understand some of the challenges encountered by producers in the area. Indeed, entering the communities by *chiva* can take a few hours because of the irregular *chiva* schedule and the long ride on the damaged road. We strived to respect our engagements and arrive in due time to meetings or interviews, but were sometimes faced with difficulties arriving in the communities. Furthermore, we intended to interview 20 to 30 families, but had to limit ourselves to 14 because of the time necessary to reach some more remote households by

foot. Finally, it was always possible that the house we intended to visit be empty because the farmers were out working. We tried to be sensitive to the busy schedule of producers who have to tend their fields and families in addition to being engaged in projects and participating in various seminars.

The presence of numerous projects in the area also increased the challenge of not creating false expectations about the aim of our visit. As previously mentioned, CREA is not, at the moment, planning to undertake a commercialisation project. Siimilarly, our project did not have the aim of *improving* the marketing infrastructure in the communities, but of *investigating* such infrastructure. Some farmers interviewed asked us if we would undertake actions to help them or inform the government of the challenges producers met in the area. We thus had to explain that we were not coming with the intent of starting a project but that, nonetheless, we would make available our results to our university and to local NGO's. Therefore, we had to be transparent and clearly present ourselves as students undertaking a *research* project in the area.

Field research in social science is not free of potential sources of errors and it is important to recognize and consider them when acknowledging the results of an inquiry. We tried to obtain a realistic and representative portrait of the processes and obstacles of commercialization in Capira and in Panama. One of the methods used was that of interviewing key actors. However, the simple fact of being interviewed makes people—consciously or unconsciously—change their behaviour in response to the presence of the interviewers. This problem of reactivity was probably compounded in Capira by the unusualness of having two Canadian students walking through the communities and asking questions. Furthermore, social desirability is another potential source of error in our results. Indeed, people knew we were associated with CREA and possibly answered to some of our questions according to what CREA would have wanted to hear. Social desirability can also be an unconscious process of answering in the way that satisfies the interviewers and provokes positive reactions from the latter. Therefore, if we showed a positive reaction or satisfaction to some answers and less to others, this could have strengthened the desire of participants to please us with their answers.

Communication is another possible source of error. Spanish is not our mother tongue, and we might have had problems transmitting our questions and explanations to farmers. One example is the use of the word *discutir*. We used it a few times to explain the reason of our visit: *discutir el proceso de comercialización.* Farmers could have interpreted this statement as something threatening, as *discutir* is mostly used in Panama to refer to an argument about something. We later changed our formulation and instead used the word *conversar.* This is one example of how we might have had problems effectively communicating our ideas. Moreover, we might have not understood appropriately all the answers given to us in Spanish. Finally, although one of the two interviewers almost always took notes during the conversations, it is possible that errors have been made in the transcription of what was being said.

Conclusions from field research

The CREA-CATIE project has started to introduce in the area new sustainable farming practices, such as the application of home-made organic fertilizer instead of using the more common chemical fertilizers and pesticides. Our field research indicates that the inclusion of a commercialisation component into the project would be very

valuable. One farmer participating in the CREA-CATIE project explained to us that at the present time, there was no price advantage in the market for organic products. However, he did recognise that buying chemicals was expensive and thus using organic fertilizer could reduce some expenses. Howard Clonts (1983) argues that the main factor determining the adoption of a new technology or technique will be the prospect of making reasonable profits—which is directly related to the costs of adopting the new technology, the quantity of products sold and price received (Clonts 1983). As with the example of the farmer explaining having introduced achiote in his field because the price for this product was starting to increase on the market, we have observed during our interviews that producers do look at such prospects of relative profit making before making choices about what and how much to produce. If some farmers were attempting to insert themselves in the market, others, who faced more constraining conditions, had even stopped producing a surplus for sale. Indeed some do not perceive commercialisation to be a worthwhile investment of their time and efforts. Clearly, marketing possibilities strongly influences farmers' decision-marking. Inclusion of a commercialization component in the CREA-CATIE project might provide producers with new opportunities in the market and better incentives to adopt the new sustainable farming techniques.

A commercialization component could also have positive spill-over effects. The communities of Bonga Centro, La Conga and Las Gaitas are presently faced with a lack of adequate transportation infrastructure (if it is not the total absence of any transportation infrastructure) and very few market incentives to produce in greater quantities because of the low prices received on the market. While the government does have a responsibility to improve the access to basic services and market opportunities, local communities themselves have also the possibility to increase their market power by working collectively to improve their access to transportation or come to the market with greater leverage. We believe that if CREA-CATIE were to introduce a commercialisation component to their project, the coordination; administration and group work skills acquired could be transferred to wider community needs and projects.

Marketing of agricultural products in Panama

We conducted interviews with seven organisations involved in commercialisation and/or agroindustry in Panama. The interviewed organisations include Panamanian governmental agencies, NGO's, foreign international cooperation agencies, university researchers, and a small-scale agroindustry enterprise. A full summary of each interview can be found in appendix 5; here, the most relevant themes discussed during the interviews are considered.

Present state of the agroindustrial sector in Panama

Commercialization of fresh produce

According to Dionisio Morán, agronomic engineer with Instituto de Mercadeo Agropecuario (IMA), markets for agricultural products abound: hotels, hospitals, supermarkets, fresh produce markets, food processing plants, and exporters are all potential outlets for small-scale farmers' fruits and vegetables. Opportunities to market agricultural products through small-scale agroindustry channels also exist. In 2002, the Centro de Producción e Investigaciones Agroindustriales (CEPIA) of the Universidad Tecnológica de Panamá completed a diagnostic study of state of agroindustry in Panama. The study counted 369 agroindustry enterprises operating in Panama producing transformed foodstuffs for supermarkets, *tiendas*, and other intermediaries in the food distribution chain (CEPIA 2005).

Despite the apparent abundance of available markets and ease of engaging in marketing activities, small-scale farmers in Panama face numerous marketing challenges. For one, prices for agricultural products sold in both outdoor markets and supermarkets are established based on supply and demand. There are no laws, issued either by the government or by the IMA, regarding the minimum or maximum prices to be paid for agricultural products. Therefore, prices obtained by *campesinos* for their produce are often very low.

Second, Dionisio Morán argues that the challenge does not lie in a lack of available markets, but in maintaining the quality of the produce. Poor, or non-existent, roads in rural areas throughout the country mean that produce is often transported by a combination of pick-up truck, horseback, and *motete* (on the back of a *campesino*). Fresh fruits and vegetables rarely arrive at the market unbruised or undamaged after such a rough journey, so the produce fetches only a low price, if it can be sold at all. This problem is particularly acute for products that ripen in the wet season, such as oranges, because the harvest time corresponds to the period when roads are in the worst condition. Poor harvesting techniques are also responsible for the deterioration of fruit and vegetable quality before the produce reaches the market. Many *campesinos* lack knowledge about correct harvesting techniques, and fruits and vegetables are often dropped and stored on the ground. Consequently, even before transportation from the farm to the market, much of the produce is not in ideal condition.

Compounding this challenge is the need for the product to be of high quality and aesthetically attractive. Many sanitary regulations and permits to obtained on both the national and international markets; meeting them inflates production costs. Furthermore, small producers become even less competitive if producers in the informal sector sell similar products for lower prices (because they avoid the monetary and time cost of getting a permit or meeting regulations). The example given to us by researchers at the CEPIA was that of the cashew nuts, which are being produced by small-scale entrepreneurs in the *interior* and then sold in plastic bags in small stands.

The costs of inputs represent a third challenge faced by small-scale farmers wishing to market their products. The high costs of labour, inputs and in particular of transport inflate production costs, sometimes to the point where the product is no longer competitive. Most *campesinos* do not own their own vehicle, and the fees charged by *chiva* and pick-up truck drivers are sometimes so high as to make it unprofitable for small-scale farmers to sell their products outside of their community.

A fourth challenge is that there is no national organic certification agency in Panama for those producers wishing to enter such market. In Capira, almost all citrus is produced without inputs of chemical fertilizers or pesticides, but small-scale farmers cannot benefit from the added value that is generally received for organic products because their oranges and limes are not certified. Currently only international organic certification agencies operate in Panama; their fees are beyond the budget of subsistence-oriented farmers.

Processing of products and artesanal agroindustrial activities

At first glance, artesanal agroindustry appears to be a very promising sustainable livelihood strategy for small-scale farmers. University researchers at the CEPIA explained to us that the technology to transform fresh products was fairly accessible to small farmers, even in more isolated areas. The required technology is small, relatively affordable (one model of a vacuum-packaging machine costs $100) and does not require a lot of energy. However, it is important to consider what plastic material can be used with each machine and to evaluate the expenses to be spent on it. We were also told that *secadores* needed in the process are easy to install even in very isolated areas and could work with solar energy.

However, Licenciada Metzi de Medina, a owner of *Frutas del Eden*, a small agroindustrial business, explained that small producers might encounter imposing starting costs when undertaking a new venture and might not have the necessary capital, experience and information without the support from an outside source. One important difficulty is the amount of red tape to surmount to have the legal right to commercialize products. She gave the example of the need to work through a lawyer in addition to the costs of certification to obtain the required official sanitary recognition to enter into the national and international markets. Such requirements can be insurmountable obstacles for new entrepreneurs who are also faced with covering all their starting costs (such as machinery or material). She said that her success can be attributed to her tenacity, but her experience and access to capital and information are surely also contributed to her success.

When undertaking a new agroindustrial project, it is important to take into consideration the various requirements; these include having access to appropriate technology and knowledge, having a market, meeting all sanitary and legal conditions, and having access to adequate transportation to travel to the many government offices and bureaus. Given that small farmers likely lack appropriate means to overcome such obstacles, a good first step might be to work in partnership with other actors involved in artesanal agroindustry.

Finally, weak national institutions also limit the viability of small-scale commercialization and agroindusty in Panama. According to researchers at the CEPIA, funding and support has been lacking for the agroindustrial sector because Panama has been strongly oriented toward the service sector—mostly because of the Panama Canal.

Conventional marketing strategies

Various paths for bringing produce to market exist. The most conventional marketing strategies are selling produce at the Mercado Avastos (in Chorrera or Panama City) and selling fresh fruits and vegetables to supermarkets. Selling to supermarkets offers the advantage of receiving higher prices for agricultural produce than would be paid if sold in open-air markets such as Mercado Abastos and Mercado San Felipe in Panama City; table 4 compares the prices of selected fresh fruits and roots in supermarkets with those sold in open-air markets.

Table 4: Comparison of prices of selected fruits and roots at two supermarkets (El Rey and Machetazo) and one outdoor market (Mercado Abastos). Prices based on average daily prices for the month of February 2006. *Sources*: CLICAC (2006) and IMA (2006)

Product	El Rey Via España	Machetazo Calidonia	Mercado Avastos
Banana	$0.19/lb	$0.09/lb	$0.06/lb
Ñame	$0.35/lb	$0.25/lb	$0.063/lb
Otoe	$0.59/lb	$0.40/lb	$0.17/lb
Pineapple	$0.95 each	n/a	$0.58 ea
Yuca	$0.25/lb	$0.16/lb	$0.06/lb

While supermarkets were rare in Panama before 1990, by 2000, there were 110 supermarkets in Panama, and supermarkets held 54% of the country's food retail (Reardon and Berdegué 2002). Given this trend, supermarkets cannot be neglected as a market outlet for fresh produce, and selling to supermarkets must be considered as part of a sustainable livelihood strategy for small-scale farmers. Reardon and Berdegué (2002) review the rapid rise of supermarkets in Latin America and recommend a pragmatic policy response to supermarkets: accept that supermarkets are a major force in the agrifood economy of Latin America, recognize that they can be engines of development, help small farmers meet the challenges of supplying to supermarkets.

As supermarkets try to cut costs and raise product quality and diversity, they tend to work only with suppliers with the organizational capacity to provide large volumes of high-quality foods on a regular basis and at low cost. This practice poses several challenges to small-scale farmers: they face high rates of rejected produce, they must absorb the costs required to ensure product homogeneity and to centralise grading, sorting, packaging and delivery, and they must learn formal accounting and invoicing procedures. These challenges are compounded by supermarkets' practice of long-term payments – up to sixty to ninety days after delivery (Reardon and Berdegué 2002). For small-scale producers with little economic stability and no way to store fresh produce, these conditions are almost impossible to meet.

Jorge Pimento, of the Comisión de Libre Competencia y Asuntos del Consumidor's (CLICAC) department of statistics, explained how small-scale farmers in Panama are specifically affected by the rise of supermarkets. He commented that some transactions between producers and *compradores* are abusive or unfair. Many farmers in need of cash take loans and find themselves indebted to lending institutions, and

therefore needing the profits from the commercialization or their products to repay them. However, supermarkets often wait up to 45 days to pay for the products they receive—a period that might be impossible to wait for indebted farmers. Therefore, some *compradores* take advantage of this inability to wait to be paid and offer to buy the whole harvest of the small producers at lower prices; but to pay immediately. These *compradores* are then the ones reselling at higher prices to supermarkets, as they have the capacity to wait for payment. Furthermore, Jorge Pimento explained, smaller producers were also entering the market in a disadvantaged position. Indeed, large-scale producers can produce at lower costs per unit because of economies of scale; large-scale producers are, therefore, an important source of competition to smaller and less technologically-equipped producers.

Additionally, the number and type of intermediaries inserting themselves between the small producer and the final consumer is an important determinant of the benefits received by the producer for the sale of harvested products. As an agreement is established between a producer and a reseller or transport agent, it is important to evaluate who holds the power in that association. Small farmers often lack access to capital and/or are indebted have little leverage to bargain on equal footing in such transactions; therefore, they risk entering in unprofitable association. The benefits gained from selling to the Mercado Avastos or to supermarkets will depend on the nature of the transaction taking place and on of the agents involved in the process.

Although the rise of supermarkets has tended to exclude small-scale farmers for the agrifood chain, avenues to sell to these large retailers do exist. If well-organised, small grower cooperatives can successfully sell to individual stores. Reardon and Berdegué (2002) suggest that associations of fifty to seventy-five growers, each with one to two hectares under fresh fruits or vegetables, can usually produce the volume and quality that supermarkets require. Alternatively, small-scale producers can sell to supermarkets via the supermarket chain's distribution centre. According to Jorge Pimento, in Panama, the chain *El Rey* has storage facilities in Chiriqui where both small and large producers come to sell their products, which are then distributed to stores country-wide. In other supermarket chains, each individual store buys its products directly from intermediaries or at the Mercado Avastos. Jorge Pimento added that some supermarkets also send their own pickup trucks to rural areas to get the products directly from the farmers. All of these transactions include a process of negotiation of prices according to the quality and the quantity of the product.

Three alternative artesanal agroindustry opportunities

Due to all the challenges associated with selling produce within the framework of an unequal trading relationship, the Mercado Avastos and supermarket chains may not be appropriate or adequate market outlets for small-scale farmers' products. Marketing of organic produce, fair trade, and strengthening of rural-urban links represent three artesanal agroindustry initiatives that have proven viability as sustainable livelihood strategies. Here, we consider their relevance to small-scale farmers in rural Panama.

<u>Marketing of organic produce</u>

Associated with reduced environmental impact, added value, and greater profitability, organic agriculture is an immediate candidate as a sustainable livelihood strategy for small-scale farmers in Capira. Here, the environmental, social, and economic benefits of small-scale organic agriculture are reviewed. The markets and certification issues for organic products in Central America, and, when available, specifically for Panama, are then examined. Finally, a few ideas as to how organic agriculture initiatives can be integrated into a sustainable livelihood strategy for *campesinos* in Panama are presented.

Organic agriculture is based on systems theory: it recognizes the interdependence of plant, animal, soil, and human communities and applies methods respectful of the environment to the entire process from production through to handling and processing. The International Federation of Organic Agriculture Movements (IFOAM), one of the two organizations establishing general principles and requirements for organic agriculture, defines organic agriculture as "a whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare, and social justice" (El-Hage Scialabba and Hattam 2003). While, conceptually, organic agriculture extends into the social, health, economic, and environmental spheres, in practice, the practice of organic agriculture focuses on minimizing the use of external inputs, avoiding synthetic fertilizers and pesticides, and developing holistic farm management systems.

Organic agriculture is typically associated with environmental benefits: soil protection and conservation, enhanced biodiversity, and improved water resources (El-Hage Scialabba and Hattam 2003). However, parallel and spin-off benefits are increasingly being recognized. Social benefits include the provision of employment opportunities (organic agriculture systems generally requires more labour than do mechanized ones) and greater returns on labour. These outcomes can slow migration out of rural areas and thus create more cohesive communities. Furthermore, because organic agriculture builds on traditional knowledge, such systems can rejuvenate local customs and encourage greater (El-Hage Scialabba and Hattam 2003).

Organic agriculture can bring clear economic benefits to small-scale farmers. Farmers can increase their income because the value of their product increases (through the added value of a "green" product) at the same time as their costs of production decrease. Economic stability is enhanced because commodity prices tend to be less volatile in organic markets than in conventional markets and because the diversification of the agricultural system reduces the dependence on a single high-value crop (El-Hage Scialabba and Hattam 2003).

Organic agriculture thus represents a stable and profitable alternative to conventional systems. However, it is important to consider the viability of organic agriculture as a sustainable livelihood strategy for small-scale farmers. Organic agriculture demands a long-term investment because the benefits of improved soil and land management will only materialize after several years. For small-scale farmers with little capital to invest or with insecure access to their land, adopting organic agriculture practices may appear to be an overly risky initiative (El-Hage Scialabba and Hattam 2003).

Organic agriculture is expanding rapidly in Central America: land under organic cultivation grew 15% per year from 1996 to 2001 (Grolink 2001). This regional trend appears to be mirrored within Panama, although it is difficult to quantify because organic foods are not differentiated from conventionally produced foods in national agricultural statistics (García 2002). In 2000-2001, Panama had 5,111ha of certified organic farmland and exported 400 tonnes of organic cacao and 18 tonnes of organic coffee (CIAT 2001, García 2002). However, these numbers likely underestimate the extent of organic agriculture in the country because the majority of organic systems are maintained by small-scale farmers producing uncertified foods for personal consumption or for sale to local markets.

Demand for Central American organic products is highest in the USA, Canada, and the European Union, countries where consumers are most willing to pay higher prices for foods produced in ways that promote ecosystem health. Therefore, the export market represents the most important destination for certified organic products. However, Central American markets for organic foods (certified and non-certified) are diversifying. As mentioned above, *ferias locales* (local fairs) are the main local market for organic fruits and vegetables. In addition, supermarkets and specialty stores have begun selling organic products, and some supermarket chains have developed their own organic labels (García 2002). More innovative markets include *entrega puerta a puerta*, or door-to-door distribution of weekly baskets of organic vegetables, fruits, dairy products, eggs, and meat, and electronic ordering systems. For example Comercio Alternativo in Costa Rica and Agronatura in Uruguay make it possible for customers to order organic products by email. Although many of these organic markets currently do not exist in Panama (e.g. supermarkets still do not carry fresh organic produce), the regional trend towards expanding local markets for organic foods is clear (García 2002).

Parallel to the growth of organic markets in Central America has been the development of regional certification agencies (García 2002). Certification is a guarantee to consumers that their food was produced according to established environmental standards. For producers, organic certification is necessary to access the value added through a "green" label. Communication difficulties and the high cost of certification by international agencies long prevented small-scale farmers in developing countries from obtaining organic certification for their farms (Grolink 2001). The recent rise of local certification bodies has thus increased accessibility of certification to small-scale producers in Central America.

In 2001, a commission of Panamanian farmers, processors, and government officials began working to develop local legislation regarding organic certification (Grolink 2001). However, five years later, a Panamanian certification agency still has not been developed (Eng. Dionisio Morán, personal communication). As a result, organic farmers in Panama still have to navigate through international certification bodies, and certification poses a major challenge to small-scale organic farmers. The observation that certified organic production has not diversified outside of coffee and cacao despite the widespread pesticide-free and chemical fertilizer-free production of citrus, coconuts, and tubers is evidence of the magnitude of the obstacle certification represents to *campesinos* in Panama (García 2002, Eng. Omar Alfaro, personal communication).

In addition to prohibitively high certification costs, part of the challenge faced by producers seeking to certify their operations lies in navigating through the bureaucracy and legal jargon of international agencies. Each agency has its own set of standards, regulations, procedures, and target clients. Nevertheless, some patterns do emerge: for example, agencies generally demand a map of the farming operation, a description of farming practices and procedures, a list of inputs (such seeds, fertilizers, and pest control materials), and a history of land use and ownership. In addition, yearly inspections are usually required. Table 5 summarises the names and certification costs of three major organic certification agencies operating in Central America and provides the sources for each agency's standards and application forms.

Table 5: Summary of three major organic certification agencies operating in Central America

Certifying agency	Cost of certification	Standards & application form available from
Quality Assurance International (QAI)	One time fee; varies according to size and location of operation	http://www.qai-inc.com/pdfs/Producer_companion.pdf
California Certified Organic Farmers (CCOF)	$400 - $1,000 per year for small operations	http://www.ccof.org/standards.php
Farm Verified Organic (FVO)	$300 - $1,000, paid in three stages	http://www.ics-intl.com/app.htm

Until a national agency is established in Panama, certified organic agriculture will remain unviable for small-scale farmers. This does not imply, however, that organic agriculture cannot form the basis of a sustainable livelihood strategy for *campesinos*. On the contrary, non-certified organic agriculture systems can both improve ecosystem health and bring social and economic benefits to small-scale farmers. By increasing ecological resiliency, crop diversification and organic agriculture practices promote food security, enhance diet diversity, increase yields, and decrease vulnerability to natural disasters and disturbances (El-Hage Scialabba and Hattam 2003).

Smallholder certification systems also hold promise for the future of organic agriculture in Panama. In several countries throughout Latin America, farmers' organizations and cooperatives have initiated a participatory certification process emphasizing production for local markets (El-Hage Scialabba and Hattam 2003). These alternative networks are more appropriate to local culture and production systems and tend to be more accessible to subsistence-oriented *campesinos*.

Fair trade

In addition to the challenge of finding a market to sell their produce, small producers must confront the risks associated with participating in national and international markets in a context of highly variable prices and high competition. To be competitive, they have to keep their prices low and face the possibility of not being able to cover their production costs. In the case of coffee, the deregulation of the economy and liberalization of markets have created an even greater vulnerability amongst small producers. In fact, after the termination of the International Coffee Agreement (ICA)—which used to set production and purchase quotas for coffee—and the liberalization of

markets in the 1980's, coffee prices became extremely volatile (Bacon 2004). The incertitude about obtaining a sufficient price for the coffee harvested can have negative consequences for both the quality of life of rural households and the environment. Indeed, the advent of years of low prices can be an incentive for farmers to substitute coffee production for other more profitable activities such as cattle ranching. In more drastic cases, it could also be a factor contributing to the decision of migrating to the city (Bacon 2004).

The idea of Fair Trade began as a partnership in 1988 between a Netherlands NGO and a smallholder coffee cooperative in Mexico to launch the Max Havaalar Fair Trade product certification (FLO 2006). Proponents of the fair trade movement reject traditional trading relations between 'developed' and 'developing' countries (also referred as 'South' and 'North') on the basis that they are *unfair* and *unsustainable* because they marginalize and/or and impose unfair work conditions to small producers (Oxford Policy Management 2000). Indeed, small producers working independently face the disadvantage of producing in small quantities and paying high fixed costs to sell their products (such as the cost of transportation or of finding a buyer). Unable to directly reach consumers, they are forced to enter in unequal and unfair trading relationships in which the intermediaries are those benefiting the most from the commercial transaction. Furthermore, retailers and processing facilities are often concentrated in a few enterprises that have disproportionate market power compared to their small suppliers (Oxford Policy Management 2000).

The direct marketing principle underlying the process of fair trade reduces the number of intermediaries and therefore provides small producers with a better price for their products. Not only is a stable price guaranteed in spite of the international market prices fluctuations, but it is also ensured to be an adequate price. The combination of such economic benefits and of the empowerment of producers' organizations can help promote sustainable rural development and poverty reduction objectives.

The idea of fair trade labelling is to both *inform* consumers about the provenance of the products they buy and to *set standard practices* to be respected by producers and businesses (Oxford Policy Management 2000). These standards include, but are not limited to, "the payment of minimum guaranteed prices and price premiums to southern producers, to direct and long term trading relationships, and the provision of pre-financing, information and training to southern producers and their organizations" (Oxford Policy Management 2000). More specific details on the objectives and regulations of fair trade are provided in appendix 6.

The main actors involved in the fair trade market are the following (Oxford Policy Management 2000):

- *Southern Producers' Organizations*: should be democratically administered with the goal of empowering its members. Most producers' organizations do not sell all of their production under fair trade labelling.
- *Alternative Trade Organizations (ATO's)*: work in trading in addition to the promotion of other pro-development and pro-poor activities. Some sell their own FT products (such as OXFAM), under or not under a fair trade label.

- *Network and Umbrella Organizations*: Established by ATO's to promote cooperation between different Fair Trade organizations.
- *Fair Trade Labeling Organizations*: Register Fair Trade products and producer organizations. Can also hand fair trade labels to mainstream businesses producing one product under the conditions required by the label. One of the most important worldwide is the Fair Trade Labeling Organizations International (FLO International).

Fair Trade production and marketing are practically inexistent in Panama. Our research efforts only found about one retailer and wholesaler of Panamanian fair trade ethnic arts in the United States: Crossroads Trade.

In the context of unstable international market prices for coffee and unfair trading relationships, Fair Trade can be an alternative benefiting positively to small farmers. It ensures a stable and sufficient price for the products along with the capacity-building necessary to improve the skills in the aspects of production and marketing. Furthermore, positive spillovers from the strengthening of local producers' organization include the reduction of transaction costs (such as transportation costs), an increased leverage against buyers, and the acquisition of skills useful to start new projects such as the processing of products (Oxford Policy Management 2000).

However, the costs of acquiring a Fair Trade certification and of finding a market for the products are significant. Furthermore, producing under fair trade labelling imposes many conditions, both social and environmental, which might require adjustments and costs for producers' organizations. Participation of small-scale producers in the fair trade market might require the monetary and technical support of outside agencies and donors. Indeed, technical assistance might be needed to improve the quantity and quality of production with the aim of meeting the high-quality requirements of a possible fair trade contract. In Panama, because of the quasi absence of any fair trade organizations, initial costs might be even greater. Therefore, first steps to be taken should be the strengthening of already existing producers' organizations and the continuation of efforts aimed at introducing sustainable and organic agriculture practices.

Strengthening rural-urban links

Creating, or strengthening, relationships between rural and urban communities is a path to sustainable development based on agroecosystems and solidarity (El-Hage Scialabba and Hattam 2003). Forming these links is a sustainable livelihood strategy for small farmers in that it represents at once a commercialization option and a forum for exchange and innovation. Rural-urban links can facilitate the development of direct marketing channels for agricultural products, thus eliminating the need for intermediaries and allowing farmers to receive a higher price for their produce. Farmers also gain the stability of having a guaranteed market for their products (El-Hage Scialabba and Hattam 2003). For their part, urbanites benefit from knowing where and how their food was produced.

The case of AGRECO (Association of Ecological Farmers of Serra Geral Slopes) in Santa Rosa de Lima, Brazil illustrates how building links between rural and urban communities can set in motion a process of sustainable community development.

Here, various elements of the AGRECO initiative are presented, and the potential of strengthening rural-urban links as a sustainable livelihood strategy is considered for small-scale producers in Capira.

By many indicators, Santa Rosa de Lima resembles the Capira communities we worked with. Santa Rosa de Lima is a rural municipality located in the Brazil's tobacco-producing state of Santa Catarina. The municipality counts 493 homes, of which only 4% are connected to a water system and less than 1% of which have access to the sewer system. The town is accessible only by narrow, winding dirt roads, so transportation is difficult (Vargas and Campos 2005). Agriculture is the dominant livelihood in the area.

While migration out of Santa Rosa de Lima into urban areas is significant, migrants tend to maintain close contact with family members still living in rural areas. For example, the annual *Gemüsefest* (Vegetable Festival) mobilizes families throughout the region, facilitating meetings and exchange between farmers and their urban-based friends and relatives (El-Hage Scialabba and Hattam 2003). During one of these meetings, a local leader and supermarket network owner initiated the AGRECO project when he proposed to local farming families to purchase the entire harvest that they could produce without using pesticides. Twelve families agreed, and AGRECO was founded in 1996 (Vargas and Campos 2005). The purpose of the project was to add value to family farming production not only by finding niche markets for organic produce, but also by installing small agroindustry units managed by the farmers themselves.

By 2003, 27 agro-industry units were established and over 200 families were involved in the project (El-Hage Scialabba and Hattam 2003). Jams, tinned foods, sugar cane brandy, honey, milk, eggs, free-range chicken and bread were being produced and sold in supermarkets, local fairs and school cafeterias or distributed in small baskets to urban consumers (El-Hage Scialabba and Hattam 2003). In addition, a rural tourism project was initiated to consolidate relationships between rural and urban communities, and a credit cooperative was developed to facilitate farmers' access to loans (El-Hage Scialabba and Hattam 2003). The entire project developed through the mutual support of rural and urban communities.

The AGRECO project has shown considerable success for small-scale producers in Santa Rosa de Lima, Brazil: through the project, jobs have been created, rural livelihoods have diversified, farmers are receiving higher and more stable prices for their products, and organic agriculture practices have been adopted. Two observations indicate that such an approach based on relationships between rural and urban communities could have similar success as a sustainable livelihood strategy in Capira, Panama.

First, an approach based on links between rural and urban communities does not require significant levels of prior development. The AGRECO project achieved success in an area that, like Capira, has limited physical infrastructure and poor road access. Second, and most importantly, the foundations for a sustainable livelihood project based on rural-urban links have already been laid in Capira. All families we spoke with in Capira have siblings or children living in urban areas (primarily in La Chorrera and Panama City), and all claim they maintain close ties with ties with their relatives.

Building on these relationships could help *campesino* families find an alternative market for their products. The existing foundations for a rural-urban project in Capira go still deeper: for some families in Capira, selling or trading to friends and relatives in the city already represents the primary way to market produce from their farms. Also, such rural-urban links have already been established between members of the *Granja* of Bonga Centro and city-dwelling employees of HSBC bank. Currently, a partnership between the HSBC bank and the *Granja* of Bonga Centro guarantees a reliable market for the *Granja*'s pineapples. The HSBC bank purchases the entire pineapple harvest of the Bonga Centro *Granja*, and distributes pineapples to bank employees. To reciprocate, HSBC bank employees are encouraged to visit the *Granja*

Three necessary steps to success

In our interviews, three themes were repeated by nearly all people working in the field of artesanal agroindustry. If success is to be achieved, small-scale producers must organize themselves into groups; develop better distribution and transportation mechanisms; and form partnerships with NGOs and private enterprises.

Creation and/or strengthening of campesino *organisations*

Currently, small-scale producers in Panama tend to operate independently, with little cooperation between producers. If commercialization of agricultural products is to be promoted among small-scale farmers, then *campesino* organizations need to be developed and strengthened. Such organizations could not only allow *campesinos* to buy and sell in larger volumes and thus gain greater negotiating power, but also help them access the IMA's services (capacity-building activities and distribution of price data).

Improvement of transportation and distribution infrastructure

Once *campesino* organisations have been developed, establishing distribution centers in rural areas could further strengthen artesanal agroindustry and commercialization initiatives. A distribution center could serve as a facility for the washing, selection, packaging, and storage of produce as well as the location for group workshops and seminars. In this way, *campesinos* could become the agents of change in their communities. Indeed, the Patronato de Nutrición, in partnership with the Banco Interamericano de Desarollo, is currently investigating ways to strengthen the income generation potential of the *granjas* they have initiated throughout the country. One way the Patronato hopes it can help the *granjas* succeed in the commercialization phase is by establishing four *centros de acopio*, or distribution centres. These *centros de acopio* will serve as warehouses to store products harvested from multiple *granjas* and facilitate large-volume distribution to supermarkets, other distribution centres, or exporters.

In addition to the four *centros de acopio* planned by the Patronato, private investors are currently looking to revive an idle distribution centre in Capira. This distribution centre was originally designed and built to process hot peppers and cilantro, but the initiative failed because, as Pedro Villaverde, the technical director of the Patronato de Nutrición, suggested, of neglect to consult with producers in the region before building. This failure, while sad, carries an important message: consultation with

local producers, particularly the *granjas*, which have the potential to provide large volumes of produce is essential. The distribution centre will have greater chances of success, and the *granjas* in Capira will access a better way to commercialise their excess produce.

Establishment of partnerships

Partnerships between local producers' organisations and private enterprises or NGO's are essential, at least in the initial phase of an artesanal agroindustry and commercialisation project. It is very difficult for *campesinos* to switch from being producers to being small-scale entrepreneurs (*comercializadores*): competition from larger producers, the drop in prices for traditional crops such as maize, beans, and coffee, the lack of available credit, and the long distance from markets all negatively affect the viability of *campesinos* wishing to market their surplus produce. As researchers at the CEPIA explained to us, that there needs to be a change in paradigm in Panama toward a more market-oriented agriculture. Small producers usually perceive themselves as subsistence farmers; before engaging in marketing initiatives producers need to develop a mentality of *productores empresarios* (entrepreneurial producers).

Ferias libres

The *feria libre* initiative promoted by the IMA represents one possible model for such a *campesino*-NGO or *campesino*-private entreprise partnership. The *ferias libres*, or open-air markets, are small stands where farmers themselves can sell their fresh produce. This arrangement is beneficial to both producers and consumers: by eliminating the intermediaries, *campesinos* receive a higher price for their produce and consumers pay less for their fruits and vegetables. The *feria libre* initiative is open to all, and the IMA supports *campesinos*' participation in *ferias libres* be providing the tent, the transportation of produce from farm to market, and sometimes even the table to display the produce. While, on the surface, *ferias libres* seem to represent a promising opportunity, we question their effectiveness and their relevance to small-scale farmers in Panama. When we visited a *feria libre* in Chorrera, the attendant told us that the produce being sold there was not purchased directly from producers, but was bought in the Mercado Avastos in Panama City. The *feria libre*, then, was not achieving its goal of eliminating intermediaries from the food distribution chain and allowing producers to obtain a higher price for their produce. Furthermore, although the *feria libre* initiative is specifically targeted at small-scale farmers, none of the producers we interviewed in Bonga Centro and La Conga had ever heard of this marketing opportunity. Only the Granja de Las Gaitas had ever participated in a *feria libre*.

Frutas del Eden

A second potential model for a commercialisation partnership is the example of Frutas del Eden. Frutas del Eden is a micro-entreprise founded and managed by Licenciada Mitzi N. de Medina. The enterprise produces dried fruits mixtures for sell on the national and international market. As no sugar or chemical preservatives are added, the products are marketed as 'natural' or 'healthy' products. Sra. de Medina wishes to work directly with small producers with the hope to support them and introduce to them a more entrepreneurial vision of their work. As such she buys her raw ingredients directly from producers and guarantees a fixed price in spite of market fluctuations.

Although the example of *Frutas del Eden* does not involve small farmers as the owners and managers of an artesanal agroindustry, it is a good example of how small farmers can benefit from higher prices and stable contracts from working with such businesses. Indeed, from their link with *Frutas del Eden,* the producers from the *Granja* in Las Gaitas benefit from entering in a transaction with a buyer that extracts a surplus value from their products and sells in the export market. It was previously discussed that entrepreneurs wishing to enter into the agroindustrial sector face many obstacles and necessitate significant starting capital. If small farmers struggle to have access to the appropriate capital or knowledge and skills to start their own agroindustrial activity, a good first step might be to enter in a partnership with a small agrobusiness such as Frutas del Eden and learn from this association.

Granjas

In a similar line of thought Licenciado Pedro Villaverde from the *Patronato de Nutrición* also highlighted that if undertaking artesanal agroindustrial activities should be desired, it should be a long-term goal for small farmers. The *granjas sostenible* have for first objective to help rural households fulfill their basic nutritional needs. Once their subsistence needs answered to, members of the *granjas* are encouraged to plant cash crops and helped by the *Patronato* or their respective sponsors to find good market opportunities. In addition, they receive capacity-training in administration and accounting operations. The *Patronato*'s objective is that a *Granja* become a solid organization that permits members to enter in the national market as a competitive player with a legal title. However, in zones of extreme poverty *Granjas* have a more basic role of trying to resolve first problems of malnutrition and to support community members' initiatives to *organize themselves* to tackle such issues.

Also, Sr. Villaverde highlighted the few agroindustrial activities in rural Panama and the associated difficulty to transform *producers in entrepreneurs*. Therefore, although they have hopes for distribution and processing centers be owned in the future by small producers, the *Patronato* believes that resolving the problems of rural poverty and building organizational skills are necessary preconditions to be met first. Sr. Villaverde finished by stressing the importance of starting with small steps that permit producers to build their strengths and skills at the grass-root level and become slowly increasingly competitive in the market.

LESSONS LEARNED

Although introducing new commercialization and agroindustrial activities in a community is a long and arduous process, such ventures are possible if a community is well organized and has access to adequate support. If approached one step at a time, commercialization and agroindustry projects can promote conservation, poverty reduction and social equity. Based on our research, we came up with a list of ten recommendations for the development of a successful sustainable livelihood strategy project. While some of these recommendations pertain specifically to commercialisation and artesanal agroindustry ventures, most are valid for sustainable livelihood projects in general. These recommendations will surely be familiar to anyone familiar with working in rural development. However, we include them here because we believe they remain pertinent.

10 RECOMMENDATIONS FOR A SUCCESSFUL SUSTANAIBLE LIVELIHOOD STRATEGY

1. **A commercialization component is essential to any sustainable livelihood project**. Commercialization allows small farmers to obtain the necessary income in the context of an increasingly monetized rural economy. Market incentives are also an important factor influencing farmers' decision-making.

2. **Build on knowledge, skills and interests of community members.**
   Farmers are very well aware of market mechanisms. Furthermore many community members, especially women, are already involved in small-scale agroindustrial activities—for example selling *duros* or home-made bread.

3. **Promote the inclusion of women in all phases of the project**
   Women are active members of the community and tend to show very strong concern for family and community welfare.

4. **Improvement of local infrastructures (physical, social, organizational) is essential to any sustainable livelihood project**
   One of the main obstacles to commercialization and rural agroindustries is the lack of transportation infrastructures and community organization. Furthermore, the lack of an integrated agroindustrial sector in Panama compounds these challenges.

5. **Group work is fundamental**
   The challenges of undertaking a commercialization or agroindustrial venture are most easily overcome by combining resources and exerting joint efforts.

6. **Consider environment sustainability at both the local and global levels.**

7. **Be aware of local culture, traditions and values.**
   Completely new ideas can only be adopted in the long term. Because communities often face immediate needs, it is best to start building on local traditions and values. Also farmers will likely be more interested in undertaking a new project if it involves their favorite crop or activity.

8. **Proceed one small step at a time**
   Commercialization and agroindustry are significant undertaking. It is better to proceed slowly and work in partnership with NGOs or private enterprises, than to start big and fail because challenges have not been adequately considered.

9. **Increasing income is not the only goal of sustainable livelihood projects; wise investment of the money is also important.**
   If the income earned is poorly administered, commercialization activities risk to fail and to cause more problems than they solve

10. **Let communities decide for themselves**
    Communities need support and guidance; not paternalism. Ultimately, community members have the right to determine their own futures.

In addition to the introduction and support of commercialization strategies or new artesanal agroindustry activities in an area, exerting pressure on the government to improve local infrastructure is also necessary, especially if producers are located in isolated and inaccessible areas. Indeed, state interventions are still needed to improve key infrastructure such as road or to strengthen the national institutional environment, required for contract enforcement and the dispersion of market information (Oxford Policy Management 2000). This is especially true to ensure that those poorest, most marginalized small farmers also receive greatly needed support. Indeed, the latter may lack access to the necessary resources and infrastructure to participate in sustainable livelihood alternatives such as entering in the Fair Trade or organic market, or starting an artesanal agroindustry project. Improving basic services such as health, education or transportation is a necessary first step before a group of producers can meet the criteria of quality and accessibility required by NGOs, organic certification agencies or Fair Trade buyers.

Finally, we want to consider sustainable livelihood strategies within the wider context of rural development. One tenant of rural development is that resources and support reach those needing it the most. It is important that those more marginalized and remote communities not be forgotten by development agencies and NGOs working on introducing sustainable livelihood strategies. Indeed, their lack of accessibility and the many issues to solve within these communities often render the introduction of a project difficult. However, those are often the families that most need support and could benefit greatly from the introduction of new agroindustry and commercialization activities. During our field work we witnessed at a small scale how such a divide can be created between those living on the side of the road and having benefited from various projects; and those living farther away from the main road. The more remote households most often did not have access to tab no water or electricity, and were often those engaging in only few commercial activities. This divide was illustrated to us when a man thanked us for coming to his house to do an interview because many projects from outside came to the area, but never did they reach his house. Interventions in an area must not increase already existing inequalities. To be sustainable and far-reaching in the long term, it is important that development initiatives—including artesanal agroindustry and commercialization projects—address the basic needs of all.

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APPENDIX 1:

Semi-Structured Interview with Campesino Families in Capira

Nombres _____
_____

Tamaño de su familia _____

Cuantas personas trabajan en su finca? _____

Tamaño de su finca _____

Ustedes son los dueños de la finca? _____

Cuales son las fuentes de ingreso?
-
-
-
-

Ustedes producen todo lo que comen o compran algo?
-
-

Objectives	Related questions
To determine what farmers produce and how much is kept for personal consumption vs how much is sold	• Que productos cosechan y en qué cantidad? • Cuanto es para su familia? • Cuanto es para vender? * a matrix will be used to facilitate the discussion
◊To explore how the commercialization process functions	• A quien ustedes venden sus productos? • Donde se venden sus productos? • Como se transportan sus productos? • Hay otros campesinos que venden con ustedes? • Cuanto reciben ustedes para sus productos? • Cuanto se venden sus productos en el mercado? • Cuanto reciben los otros intermediarios? • Cuanto tiempo dedican a la comercialización después de la cosecha? • Podemos ir con ustedes al mercado? * drawings and diagrams will be used here to explore the commercialization process with the *campesino* and his family
■To explore the reasons why the *campesinos* do not sell their products	• Porque no venden? • Cuales son los obstáculos a la comercialización? • Les gustaría vender una parte de sus productos? • Piensan que en el futuro podrán vender sus productos? • Piensan que la situación de la comercialización para ustedes va a mejorarse? *A ranking diagram will be used to determine the most important obstacles
To characterise the benefits of commercialization	• Cuales son los beneficios de la comercialización en general? • Cuales son/serian los beneficios de la comercialización para ustedes? • Reciben los beneficios cada semana? • Para que usan el dinero de la venta de sus productos? • Hay aspectos negativos también a la comercialización?
◊To identify the obstacles to commercialization	• Cuales son los obstáculos a la comercialización? • Piensan que la situación de la comercialización se va a mejorar? • Que les haría abandonar la comercialización? *A ranking diagram will be used to determine the most important obstacles
To identify other potential sources of information: snowball technique	• Pueden indicarnos dos personas que si comercializan? • Pueden indicarnos dos personas que no comercializan?

■ Questions to ask those who do not commercialize their products
◊ Questions to ask those who do commercialize all/part of their products

APPENDIX 2

Workshop presented to community members

The workshop took place on Monday April 17th 2006 in a farmer's house in Bonga Centro. We had publicized the workshop to all interested community members (had they been interviewed or not) in Bonga Centro and La Conga throughout Samantha, the local Peace Corp volunteer. In addition, we had personally announced the event to all the persons interviewed when we visited their houses on Thursday April 13 2006 to hand a thank you card. 12 participants assisted to the workshop, all from Bonga Centro, and we were assisted by two local community members who cooked lunch. To support local producers we bought locally the chicken and beans.

The goals of the workshop were the following:

- Present the results of our interviews to all interested community members.
- Invite the participants to participate in a group analysis of the results of the interviews
- Invite an exchange of ideas on the theme of commercialization
- Thank the community
- Offer lunch and a special Canadian desert: an apple crisp!

One participant presenting to the rest of the group the ideal commercialization route chosen and drawn by her group

The workshop was divided in sections according to the different themes explored during the interviews. We first presented our results and asked the participants if they had any addition to make or comment. An analysis group exercise accompanied each section, and one representative per group was invited to present its teams' results at the end of the work period. Hand-made illustrations and lists were used as visual support material. Participants were also encouraged to use this medium to illustrate their ideas.

The agenda of the workshop was the following:

- Presentation of the workshop and of the agenda
- Presentation of each participant to the rest of the group
- Presentation of the interviews' results and analysis
  - *a. Products cultivated*
  - *b. Commercialization routes*
  - *c. Obstacles to commercialization*
  - *d. Strengths of the communities*
- Thank you and presentation of the apple crisp tradition!
- Lunch

The participatory group analysis of the results was done through the use of the following exercises:

a. *Products cultivated*: Participants were asked to divide themselves in two groups and to each choose two products they particularly appreciate: one for the family consumption and one to sell. They had to discuss and write a list of qualities for those specific products. Finally, one team member came to the front to present their results.

b. *Commercialization route*: Once again divided in two teams,

Beans were placed upon illustrations of various obstacles to commercialization according to their importance

Summary of the workshop

We feel that the goals of the workshop were attained. Indeed, community members participated and seemed to enjoy the activities. Moreover, some participants expressed their ideas and exchanges of ideas took place. More importantly, we feel that the workshop and the lunch was a good way to thank the community and share with them the results of the inquiry taking place in their community. Indeed, many participants expressed at the end of the presentation that they were grateful we had presented our results and shared a few Canadian traditions with them.

APPENDIX 3

Socio-economic indicators of *campesino* households interviewed

ID #	Community	Road Access	Household Size	# of People Working the Finca	Size of Finca (ha)	Legal Status of Finca	Non-Agriculture Sources of Income
1	Bonga Centro	Dirt road, but no regular chiva service. 20 minute walk to main road	11	5, plus others	5 planted; 6 rented out as pasture; 1/2 forested	Own land title	Renting pastureland to cattle ranchers
2	La Conga	No road access. 1hr walk to road	2	2, plus 4 others	42 (some rented out as pasture, some forested)	Own land title	In the past, work in Chorrera
3	La Conga	No road access. 45 min. walk to road	4	1, plus occasional day labourers	1; plus 5 shared with sons	Own land title	Day labour on occasion
4	Bonga Centro	No road access. 30 min. walk to road	6	1	30 (some planted, some pasture, some forested)	unknown	None
5	Bonga Centro	No road access (30 min. walk to road)	2	2	10-11 (some planted, some pasture, some forested)	unknown	Day labour; basket-making; renting pastureland to cattle ranchers
6	Bonga Centro	Main road access	5	4	3 planted, plus 4 forested	Own land title	Construction work in Chorrera, hosting students and volunteers
7	Bonga Centro	Main road access	5	3	24 (some planted, some pasture, some forested)	Own land title	Cattle

Socio-economic indicators of *campesino* households interviewed, continued

ID #	Community	Road Access	Household Size	# of People Working the Finca	Size of Finca (ha)	Legal Status of Finca	Non-Agriculture Sources of Income
8	Bonga Centro	Main road access	8	2	8 (some planted, some pasture, some forested)	3 ha of titled land; remainder non-titled	Day labour, cattle, small convenience store
9	Bonga Centro	Main road access (5 min. walk to road)	9	1	4 planted; 17 in pasture and forest	unknown	None
10	Bonga Centro	Main road access	2	2, plus 2 others	1.5 planted, plus some forested land	No land title	Renting pastureland to cattle ranchers
11	Bonga Centro	No road access. 30 min. walk to road	5		1, plus some pasture	unknown	Renting pastureland to cattle ranchers
12	Bonga Centro	Poor road access. 15 min. walk to road	2	2	1	Own land title	Selling chickens
13	La Conga	No road access. 1 hr walk to road			unknown	unknown	None
14	La Conga	No road access, 1 hr walk to road	2	1	unknown	unknown	In the past, sold chickens and pigs

APPENDIX 4

Illustrations of an "ideal" marketing channel identified by small-scale farmers in Capira

1. 

2. 

3. 

4. 

APPENDIX 5

A. AMPYME (Autoridad de la Micro, Pequeña y Mediana Empresa)

The Autoridad de la Micro, Pequeña y Mediana Empresa (AMPYME) is the Panamanian government agency charged with promoting the establishment and success of small businesses. Established in 2000, AMPYME's mission is to:

> Consolidar, fortalecer, dinamizar la autogestión de las MIPYMES mediante la ejecución de políticas de promoción empresarial, que estimulen y motiven el fortalecimiento del sector, de manera que contribuyen en forma directa en la generación de empleo, creándose por ende una mejor condición y calidad de vida a este sector de nuestra economía.
>
> (AMPYME 2005)

We spoke with Alexander Gómez, an assistant at AMPYME's administrative office in Clayton, about the organisation's support for artesanal agroindustry initiatives. AMPYME's programmes can be classified into two groups: financial support and capacity-building.

Financial support
AMPYME's Programa de Financimiento para Pequeñas y Medianas Empresas (PROFIPYME) supports entrepreneurs seeking loans to start up their small business. To obtain a loan from a Panamanian bank, entrepreneurs must provide a guarantee, usually in the form of assets. PROFIPYME helps entrepreneurs access loans by providing up to 80% of the guarantee required to apply for a loan. Entrepreneurs thus do not need to put all their private assets at risk when starting up their small businesses.

Capacity-building
The objective of AMPYME's *Progama "Oportunidades de Negocios"* is to provide entrepreneurs with the knowledge and skills necessary to plan and manage their small business. To achieve this objective, *plantas móviles*, trailers equipped with stoves, ovens, refrigerators, sinks, and sanitation supplies, have been built. These *plantas móviles* are driven around the country and serve as the site for practical workshops on food processing and transformation techniques. Topics covered include:

- Dehydration (dried fruits, roots, tubers, vegetables, and medicinal plants)
- Preserves (fruit and vegetable based jams, jellies, vinaigrettes, and pickles)
- Frying (tuber and fruit based fried foods)
- Bakery (preparation of flour-based products)
- Dairy products (cow and goat milk based products)

One strength of the food transformation and processing techniques taught in the *plantas móviles* is that they do not involve chemical additives. In this way, the products can serve as healthy alternatives on the local market and be marketed as "natural" products when exported to foreign countries (Alexander Gómez, personal communication). Another strength, one of particular relevance to small-scale farmers in remote areas, is that the techniques taught do not rely on complicated or expensive technologies. This use of accessible technologies promotes technology transfer (Alexander Gómez, personal communication).

In addition to these technical workshops, the *plantas móviles* provide seminars on soft skills related to business management, such as commercialization and administration. AMPYME will also guide entrepreneurs through the process of legally starting up a business in Panama.

Any individual or group (NGO, farmer cooperative, students) may submit an application to participate in AMPYME's *plantas móviles* workshops.

Sources:

AMPYME. 2005. Misión de la AMPYME. Autoridad de la Micro, Pequeña y Mediana Empresa. Accessed March 17, 2006. Available from http://www.ampyme.gob.pa/mision.html

Personal communication from Alexander Gómez, assistant at AMPYME's administrative office

B. CLICAC (Comisión de Libre Competencia y Asuntos del Consumidor)

The CLICAC is a governmental entity whose mission is to reconcile and protect the interests of consumers inside of a market economy. One of their tasks is to monitor prices for all different products every month in supermarkets of the city of Panama.

We met with Jorge Pimento of the statistics department to know more about the process of commercialization in supermarkets for small agricultural producers. M. Pimento explained to us that the various supermarket chains had different strategies to acquire their fresh produce (fruits and vegetables). For example, the chain *El Rey* has in Chiriqui storage facilities where both small and large producers come to sell their products, which are then distributed to stores country-wide. He mentioned that *El Rey* also owned its own farms to produce meat and poultry. In other supermarket chains, each individual store buys its products directly from intermediaries or at the Mercado Avastos. Sr. Pimento added that some supermarkets also send their own pickup trucks to the rural areas to get the products directly from the farmers. All of these transactions include a process of negotiation of prices according to the quality and the quantity of the product.

The CLICAC will provide any interested person with tables of prices of any products sold in supermarkets in Panama.

Sources:
Personal communication from Jorge Pimento (departamento de estatisticas)

C. Frutas del Eden

Frutas del Eden is a micro-entreprise founded and managed by Licenciada Mitzi N. de Medina. The enterprise produces dried fruits mixtures for sale on the national and international market. As no sugar or chemical preservatives are added, the products are marketed as 'natural' or 'healthy' products. The enterprise counts a few part-time employees. They usually are students or single mothers who can only work a few hours per week. Its founder and manager is Sra. Mitzi N. de Medina. Sra. de Medina is also a member of the *Red de Agroindustria Rural de Panama*, an association that works on strengthening the agro sector in the country. She wishes to work directly with small producers with the hope to support them and introduce to them a more entrepreneurial vision of their work.

She explains her success to her tenacity, her experience and contacts. Indeed, she had been working for the Panama Canal Authority during the period of American management before 1999 and had learned how to use a computer and the internet. This is how she found most of the information about the technologies and market opportunities she needed to start her business. Furthermore, having worked in the Ministerio de Comercio y Industria, she obtained from them the use of a space in their offices to start her operation. She is now working in her home and still explores new marketing opportunities such as the Fair Trade market through the internet.

Difficulties

One important difficulty is the amount of red tapes to surmount to have the right to commercialize products in the national and international markets. Such requirements to fulfill can be insurmountable obstacles for new entrepreneurs who in addition have to cover all their starting costs (such as machinery or material). She gave the example of sanitary regulations and the fact that a lawyer is necessary to communicate with the *Ministerio de la Salud.* When added to the 400$ to pay for each product being registered, sanitary registration amounts to a significant costs for producers to cover. Furthermore, credits are little accessible and interest rates are often too high for small business owners. She mentioned that the lack of starting capital is one reason why it is very hard for small farmers to start their own business. Capital is only earned once the business is working and running, but significant investments are needed right at the beginning of the project.

Also Sra. de Medina explained that the bureaucracy in Panama was very heavy and that it is very hard to have access to necessary information. She gave the example of the Planta Montuna as a potentially useful tool for the agro sector, but that is not being properly publicized. She suggested that a decentralization of state agencies—such as sanitary agencies—could avoid business owners from all provinces having to travel to Panama City to undertake the many bureaucratic procedures necessary.

She mentioned that the lack of entrepreneurial vision among producers in Panama was an obstacle and that she had faced problems with the fulfillment of contracts. Indeed, she explained that some producers she worked with would defer because had found higher prices elsewhere. However, she offered them a good and stable price in spite of market fluctuations, which was a better deal in the long term.

Present providers

Sra. de Medina had bought all the recent pineapple harvest from the *Granja* in Las Gaitas and had agreed to buy their next one. She was interested in obtaining a Fair Trade label for their pineapples and her processed fruits.

Sources:
Personal communication from Licenciatura Mitzi N. de Medina

D. IMA (Instituto de Mercadeo Agropecuario)

The Instituto de Mercadeo Agropecuario (IMA) supports the MIDA in its goal of promoting the growth and development of Panama's agri-food sector and is responsible for the commercialization and marketing of agricultural products. The IMA's mission is to:

> Ser una institución líder que facilita y apoya los procesos de mercadeo, comercialización, agronegocios y agroindustria de productos agropecuarios, a través de la prestación de servicios de inteligencia de mercado, mercadeo, comercialización y agroindustria, mediante alianzas estratégicas con instituciones del sector público agropecuario y con empresas del sector privado para desarrollar y fortalecer la gestión agrocomercial y mejorar la rentabilidad de sus negocios.
>
> (IMA 2005)

We spoke with Dionisio Morán, agronomic engineer with IMA, and Sofía Castillo of IMA's Centro de Información y Documentación about IMA's general research and projects and about the specific challenges faced by small-scale farmers attempting to market their products.

IMA's research and projects

The IMA is an organization with a strong focus on capacity-building. As such, the institute provides technical assistance, in the form of *charlas*, seminars, and practical demonstrations, on topics such as harvesting, processing, and transformation techniques for produce destined for the market. This technical assistance is available to all producers; *campesino* groups can solicit a workshop or a seminar by submitting a group application to the IMA.

As part of its information service, the IMA maintains a database of the prices of all the agricultural products sold in Panama City's two principal fruit and vegetable markets: Mercado Agrícola Central (Mercado Avastos) in Curundú and Mercado San Felipe on Avenida V. These data are available on a daily, weekly, and monthly basis, allowing for analysis of the magnitude and variability of prices over various time scales. The IMA also publishes the prices of agricultural products sold in the international market; this facilitates a comparison of the prices obtained on the national and international markets. By providing information on when prices for agricultural products are highest and lowest, the IMA attempts to facilitate producers' decisions about when to harvest and when to sell their products in the market.

Daily market prices available from
www.ima.gob.pa

The IMA does not directly provide funding for artesanal agroindustry or commercialization projects, but the institute does support *campesinos* wishing to market their products through its *feria libre* initiative. The *ferias libres*, or open-air markets, are small stands where farmers themselves can sell their fresh produce. This arrangement is beneficial to both producers and consumers: by eliminating the

intermediaries, *campesinos* receive a higher price for their produce and consumers pay less for their fruits and vegetables. The *feria libre* initiative is open to all, and the IMA supports *campesinos*' participation in *ferias libres* be providing the tent, the transportation of produce from farm to market, and sometimes even the table to display the produce.

Sources:

IMA. 2005. Quienes somos. Instituto de Mercadeo Agropecuario. Accessed March 9, 2006. Available from http://ima.gob.pa/index.php?option=com_content&task=view&id=25&Itemid=175

Personal communication from Dionisio Morán, ingeniero agrónomo con el IMA

Personal communication from Sofía Castillo, Centro de Información y Documentación del IMA

E. MIDA de Nueva Arenosa

We met with Norberto Pribas, director of the regional office of the Ministerio de Desarrollo Agropecuario (MIDA) in Nueva Arenosa. Sr. Pribas explained to us that the MIDA gave support to different initiatives when organized groups of producers solicited their help. For example, they helped the *Granja* in Las Gaitas find a market and transport for their pineapples in Panama City. The MIDA also supports the coffee producers in the area by providing them with a free access to fermentation tanks. Café Duran and Café Gilca are the two main buyers in the regions. The actual prices are of 42$/quintal for dried beans; of 24$/quintal for the fruits (*fruta roja*); and of 65 to 70$/quintal for coffee beans that have been shelled.

Sr. Pribas stated that the major obstacle to commercialization in the area was the bad state of the roads. He also mentioned the need to capacitate farmers for them to be able to provide products of better quality and to bargain in a more incisive fashion.

Finally, we learned that MIDA gave workshops to women teaching them to process pixbae (a fruit) in canning, permitting them to conserve this produce for a longer period of time. The objective of this activity was however limited to family-consumption and not to commercialization.

Sources:

Personal communication from Norberto Pribas, ingeniero agrónomo and director of the MIDA regional office in Nueva Arenosa

F. Misión Taiwanesa de Cooperación Técnica

Misión Taiwan was founded by the signing of the "Acuerdo de Cooperación Técnica Agrícola" in 1969 and is working with a Panamanian counterpart: the MIDA. Its most important project is the introduction of new techniques for the cultivation of rice. In addition, it has projects aiming to improve agriculture in the province of the Daríen (*Centro de Extensión Agrícola del Darién)*; to give technical support in the domain of artesanal agroindustry; and to offer knowledge-based and technological support in various themes relating to agriculture in general (project *Frutas Tropicales Exóticas*, medicinal plants, etc).

Within the framework of the *Proyecto Agroindustria*—revolving around artesanal agroindustry—la MITET worked on developing the *Centro de Investigación, Capacitación y Apoyo al Agro industrial y Productor*, also known as the center of investigation *La Montuna*. The purpose of this center is to provide the technology, installation, financing and trainings necessary for small farmers to adopt new processing technologies for agricultural products. Examples of finished products were dried mango or pineapple; various fruits marmalades; and dehydrated fruits. It is evaluated that the financial investment for this project will revolve around 200 000, 00 US$. When we met with Eng. Ben Lin, the project had been running for 2.5 years and had provided 9 capacity trainings, all destined to MIDA staff. It is in their future plans to offer these trainings to various self-organized groups of farmers interested in adopting these technologies.

Furthermore, the engineer Ben Lin explained to us that the five most important components to improve the commercial potential of small farmers' products were *grass-root level organization, capacity-building, financing, appropriate production processes and finding a market.* He emphasized the essential condition of finding a *demand* and a *market* before initiating any project of commercialization. This prominence of the need to find a profitable enough market corresponds to what we have been told by some farmers during our field work. La MITET supports small farmers by helping them find a direct access to *supermercados* (El Rey, Machetazo, Super 99) or a space for them to sell at the *Mercado Avasto*. Indeed, this allows farmers to eliminate intermediaries and thus earn more revenues from the sold products.

Sources:
Personal communication from Ben Lin (engineer and Director de la MITET en Panama)

G. Patronato de Nutrición

The Patronato de Nutrición (Patronato) is committed to a vision where subsistence farmers efficiently and sustainably produce the foods they need for family nutrition and use excess production to earn the income necessary to improve their quality of life. Although created by a governmental law, as a non-governmental organisation, the Patronato receives funding from both public and private sources and operates according to its own laws and policies. Since its creation in 1990, the Patronato's mission has been to:

> Contribuir a disminuir los índices de pobreza y pobreza extrema en las áreas rurales de nuestro país y por ende, la desnutrición infantil, a través del desarrollo e implementación del Programa de Granjas de Producción Sostenible.
>
> (Patronato de Nutrición 2005)

Partnerships are key to the Patronato's work. The Patronato provides technical agronomic assistance using funding received from the government and helps groups of subsistence farmers access the other forms of support they need by forming agreements with other public and private organizations. The Patronato's partners include the Banco Interamericano de Desarollo (BID), INAFOR, IMA, Universidad de Panamá, and Universidad Tecnológica de Panamá.

We spoke with Pedro Villaverde, the technical director of the Patronato de Nutrición about the Patronato's philosophy and response to rural poverty in Panama. We also discussed commercialization and artesanal agroindustry in the context of the Patronato's *granja* initiative.

The Patronato's vision of rural poverty

The Patronato views poverty holistically: poverty is not merely a lack of money; it is a function of access to food, clean water, sanitation, transportation, health services, and a sustainable livelihood. The Patronato works with the philosophy that poverty reduction begins with increasing food security and building strong communities. When basic food needs are met and networks between families have been developed, people can begin to take charge of their own development. Income-generating strategies, such as commercialization of agricultural products, should come only as a second step in rural poverty reduction initiatives.

The granja *initiative*

Granjas de Producción Sostenible (*granjas*), form the cornerstone of the Patronato's approach to rural poverty alleviation. *Granjas*, or sustainable communal farms, are parcels of land between five and twenty hectares in extent worked by groups of ten or more *campesino* families. The primary objective of the *granjas* is to build the capacity of *campesinos* living in areas of poverty or extreme poverty to produce staple foods (such as rice, corn, beans, roots and tubers, plantains, eggs, chicken, pork, and local fruits) efficiently and sustainably. In this way, the Patronato seeks to improve food security and family nutrition. The second objective reflects the truth that basic needs extend beyond the need to eat healthily: people need shelter, clothing, and access to

health care, education, and other services. Thus, the second objective of the *granjas* is to help *campesino* families generate the income to meet these needs.

The Patronato classifies *granjas* into three models: subsistence, semi-commercial, and commercial. Ideally, these models should be seen as phases, and *granjas* should progress from one phase to the next as basic needs are met and food production methods become more sustainable. Subsistence *granjas* tend to be located in areas of extreme poverty that are inaccessible throughout most of the year. These *granjas* sell only a minimal amount of produce; most of the harvest is destined for consumption by families of *granja* members. *Granjas* are classified as semi-commercial or commercial depending on the size of the operation, the level of group organization, and road accessibility. While semi-commercial and commercial *granjas* may concentrate on two or three crops and sell up to 50% and 75% of the harvest, respectively, all *granjas* must continue to produce a diversity of staple foods for consumption by the families of *granja* members. This requirement reflects the Patronato's belief that food security and good nutrition lies at the basis of poverty reduction.

The start-up capital (for land, seeds, soil analyses, etc.) for these communal farms is provided by the Patronato, but the ultimate goal is that the *granjas* become self-sufficient and sustainable. After seven years of financial and technical assistance from the Patronato, *granja* members should be organized in a cooperative or producer's association with legal standing. The communal land should be owned by *granja* members and farmed using sustainable (organic) methods. Finally, the operation should be economically viable: the sale of harvested produce should generate revenue sufficient to cover the *granja*'s production costs, to set aside money for future investments, and to provide an income for member families.

To help *granjas* become financially independent, *granjas* are encouraged to make direct links with companies that make donations to the Patronato. The inauguration of a *granja* is an occasion for a sponsor agency or company to visit the community, meet *campesino* families, and face the reality of rural poverty. This experience often pushes a company to become more directly involved with the *granja* it sponsors. For example, since visiting the *granja* of Bonga Centro, the HBSC Bank has begun purchasing pineapples directly from the *granja*. In addition, the HSBC bank has helped the community build a school and has distributed soccer equipment and uniforms to young men.

Ecological sustainability in agricultural systems

Small-scale farmers in Panama face numerous ecological constraints. Many *campesinos* do not have access to the land they need to produce enough food for their families. Among those who do own land, many struggle to maintain adequate yields on soils that are acidic, infertile, or eroded due to years of over-use. In an attempt to curb this agroecological degradation, the Patronato is promoting organic agriculture techniques among members of the *granjas*. While some positive changes have occurred, Pedro Villaverde recognized that the transition to sustainable agriculture is a slow process. *Campesinos* are hesitant to abandon traditional farming techniques employed for generations and learnt from parents and grandparents.

Sources:

Patronato de Nutrición. 2005. Visión y misión. Patronato del Servicio Nacional de Nutrición. Accessed March 30, 2006. Available from http://www.patronatodenutricion.org

Personal communication from Pedro Villaverde, Technical Director of the Patronato de Nutrición.

H. Universidad Tecnológica de Panamá: CEPIA (Centro de Producción e Investigaciones Agroindustriales)

We went to the Extension of the Universidad Tecnológica de Panamá (UTP) in Tocumen to visit the Centro de Producción e Investigaciones Agroindustriales (CEPIA). We more specifically visited the laboratory of the Proyecto "Desarrollo de Tecnologías para la conservación de ñame, yucca y otoe frescos cortados" and discussed with the engineers Leopoldo Manso, Wedleys Tejedor Espinosa and Victor Manuel Guillén.

The UTP was created in 1981 by the Ley 18 del 13 de agosto and is dedicated to the following mission:

> "Formar y capacitar integralmente al más alto nivel, Recurso Humano que genere, transforme, proyecte y transfiera ciencia y tecnología para emprender, promover e impulsar el desarrollo tecnológico, económico, social y cultural del País."
> (Universidad Tecnológica de Panamá).

Transformation of products
It was explained to us that the technology to transform fresh products was fairly accessible to small farmers, even in more isolated areas. We were showed samples of vacuum packed dried cilantro and vacuum-packed fresh yucca.

The demand for these packed and ready-to-eat products has been growing at an important rate in the last years. Therefore, this transformation industry offers a real opportunity for farmers to extract added value from their products and possibly extend the latter's lifespan (dried products and vacuum packed tubercles have a lifespan up to a few months; cut and vacuum packed fruits however can be kept only for a few days.) The monetary advantage of processing foodstuffs can be quite significant; while fresh yucca is sold $0.10/pound in the Avastos market, its vacuum-packed version is sold for $0.49/pound in supermarkets.

The required technology is small, relatively affordable (one model of a vacuum-packaging machine costs $100) and does not require a lot of energy. However, it is important to consider what plastic material can be used with each machine and to evaluate the expenses to be spent on it. We were also told that *secadores* are easy to install even in very isolated areas and could work with solar energy.

Problems of the agroindustrial sector in Panama
Our interlocutors perceived that the biggest problem of the rural artesanal agroindustrial sector was for small farmers to organize themselves as an organization or a cooperative. Furthermore, they explained that there needs to be a change in paradigm in Panama toward a more market-oriented agriculture. In effect, they believe that small producers usually perceive themselves as subsistence farmers and should develop a mentality of *productores empresarios*. Furthermore, as the country of Panama has been strongly oriented toward the service sector (mostly because of the Canal), funding and support has been lacking for the agroindustrial sector.

Another concern is for there to be a market, and for the products to be sufficiently competitive. We were given the example of jam, which is only sold in Panama in big

quantities to bakeries. In effect, local production is not competitive enough to compete with cheap imports in supermarkets. Another challenge is for the product to be of high quality and esthetically attractive. Sanitary regulations and permits to obtain are many both on the national and international market and meeting them inflate production costs. Furthermore, small producers become even less competitive if producers in the informal sector sell similar products for lower prices (because they avoid the monetary and time cost of getting a permit or meeting regulations). The example given to us was that of the cashew nuts, which is being produced by small-scale entrepreneurs in the *interior* and then sold in plastic bags in small stands.

Also, one of the most important obstacles for the artesanal agroindustrial sector to become more competitive is the high price of inputs. In effect, the costs of electricity, sugar, labor, or jars and lids are inflating production costs.

Small farmers also face the challenge of the lack of monetary capital and vulnerability to changes in price. This is aggravated by their lack of access to credit, as banks are mostly service sector oriented; and the lapse they have to wait between delivering their products to supermarkets and being paid (usually a month).

Finally, the engineers were concerned that some communities had bigger problems to tackle before trying to develop agroindustry projects. However, they also had positive examples of projects that have had success in Panama or elsewhere in Central America. They talked about a group of indigenous women in Guatemala working with the Instituto de Nutrición de Centro America y Panama (INCAP) who started a small fruit tea enterprise in their community. They were exporting it in important quantity, but yet working in a small room and using fruits that would have spoiled otherwise.

At this time, the most important products in the small-scale agroindustrial sector are meat, cheese and other milk-products, and *raspadura* (sugar block from the sugar cane).

Their Programs
The CEPIA investigates and develops new technologies that could be transferable to small producers. In addition, they completed in 2002 a Diagnostico sobre la Industria Rural en Panama. One person, Martha Alvarez, also does market studies, but only for specific projects. Their investigations also cover the sanitary and conservation aspects of products processing.

Another one of their program is to capacitate and support small producers. They offer workshops (*capacitaciones)* and technical assistance to organized groups. Furthermore, they have worked with the CYTET and the IICA to develop manuals to teach small farmers on the different aspects of the agroindustry sector, with examples and material relating directly to Panama. Some of their manuals explain in detail and with illustrations the process of transforming *frutas cortados.*

Finally, one concern of the engineers was with the lack of funding for the CEPIA's projects and investigations. They said that public funding was fairly small and that they relied primarily on external source of funds, such as Misión Taiwan or La Agencia de Cooperación Española.

What they think of the Plantas Mobiles del AMPYME

When consulted about the project to develop 4 *plantas mobiles* to capacitate small producers in different agroindustry activites, the engineers from the CEPIA were strongly against the idea. They said that it was a political mistake and that it would have been a lot better to invest the money in the Montuna Planta in Divisa. That it was a lot easier to move people to a capacitacion plan than to move the whole plan itself. Furthermore, they said that the power sources in many communities were not appropriate for the *plantas mobiles.*

For sanitary requirements: Decreto 352 del 2001.
www.asamblea.gob.pa
go to *gasetas* # G.O. 24 411

Sources:

Personal communication from Leopoldo Manso

Personal communication from Victor Manuel Guillén (Director)

Personal communication from Wedleys Tejedor Espinosa (Sub-Director)

UTP. 2006. Website of the Universidad Tecnológica de Panamá. Accessed April 2, 2006. Available from www.utp.ac.pa

APPENDIX 6

Fair Trade Labelling Requirements

The Oxford Policy Management program produced a list of generalizations from FLO to obtain the Fair Trade label (Oxford Policy Management 2000):

- All products have to be bought directly from an producers' organization registered by FLO International
- Purchase price is fixed by FLO International and guarantees the producer with the coverage of its production costs. A premium (can be a social premium) has to be ensured in the case of rising world prices.
- "Producers must be provided with access to credit facilities, when harvest begins, up to a value of 60% of the contract value"
- A long term contract must be ensured between producers and buyers
- A fee has to be paid to FLO International for use of label
- The monitoring of the fulfilling of these conditions must be ensured.

More detailed enumeration of conditions to comply with can be found in the Generic Fair Trade Standards for Small Farmers' Organizations on the website of the FLO International. In addition to the compliance with the requirements of this document, small farmers need to form their own organizations that "contribute to the social and economic development of their members and their communities and are democratically controlled by their members." (FLO 2006)

Sources:

Fairtrade Labelling Organizations International (FLO). 2006. Accessed February 28, 2006. Available from http://www.fairtrade.net/

Oxford Policy Management and Sustainable Markets Group, International Institute for Environment & Development. 2000. Fair Trade: Overview, Impact, Challenges; Study to Inform DFID Support to Fair Trade. Oxford.

APPENDIX 7
Addresses of contacts for *thank you* notes

CREA-Panama
- Michael Roy
- Anita Roy
- Ignacia Holmes
- Erich Seudewitz
- Roldan

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- Lic. Mitzi N. de Medina

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República de Panamá
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Comunidades de Bonga Centro, Las Gaitas and La Conga
- Miembros de las comunidades de Bonga Centro, Las Gaitas y La Conga
- Samantha Bartling
- Familia de Sr. Confesor y Sra. Marcelina Martinez

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