

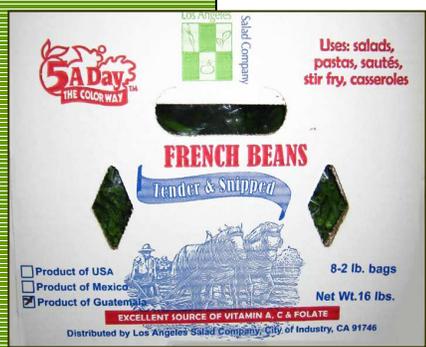
# Summary Document



## Assessing Smallholder Participation in the French Bean supply chain in Guatemala

### Juan Francisco Project

Mark Lundy  
9 October, 2007



---

## Introduction

---

What are the social, economic and environmental effects of purchases made by major retailers on rural communities, producers and their families in the developing world? The current study seeks to provide initial insights into this question with a thorough examination of the French bean supply chain linking rural Guatemalan communities to the US retailer Costco.

This study was commissioned by Costco under the umbrella of the Sustainable Food Laboratory initiative and benefited from the active and open participation of all supply chain actors. These include representatives of small farmers in rural Guatemala, diverse local organizations that support these farmers, the Cuatro Pinos Cooperative, the Los Angeles Salad Company and Costco itself. Without their trust, patience, willingness to share information and honest desire to learn how business can be harnessed for profit *and* development, this report would not have been possible.

---

## Context

---

Guatemala is a land rich in tradition and diversity. Guatemalan coffee, cacao and handicrafts, to name just three products from rural families, are recognized as world leaders in terms of quality. Despite these successes, the majority of the 22,000 rural communities in Guatemala face obstacles to their development. According to the World Bank, in the year 2000 nearly 6.4 million Guatemalans lived below the poverty line. Of the poor, a disproportionate amount – 81% of all poor and 93% of the extremely poor – lived in rural communities (World Bank, 2003). Between 2000 and 2003 the gap between the welfare of urban and rural Guatemalans as measured by the Human Development Index of the United Nations increased (UNDP, 2004). In rural Guatemala poverty is most common among small landowners, most of whom are indigenous, who depend on basic grains (maize and beans) for their sustenance (Vakis, 2003: 23). In sum, poverty remains a serious concern in rural Guatemala where cultural wealth contrasts with economic hardship and many families struggle to sustain themselves.

One potential force for positive change in rural Guatemala is the production of higher value agricultural goods. In many cases, horticultural products fit well with existing land tenure systems and can provide important income streams on relatively small areas of land. However, experiences with the promotion of higher value horticultural products as a stimulus for poverty alleviation are at best mixed. Shortcomings in terms of crop and pest management, especially excessive use of pesticides, a lack of reliable commercial organizations to market products and limited access to and knowledge of international market trends and channels contribute to stymie this sector. The Guatemalan State, export firms and international development agencies and making significant efforts to resolve these issues.

In addition to getting the business model right, the use of high value agricultural products as a driving force for development requires complementary social

investments in rural communities. These include access to health care, education and housing as well as improved infrastructure for production and communication facilities. As a result, successful strategies require synergies between diverse actors, their agendas and interests and the needs of rural families.

The French bean case provides insights into how this can happen. The lessons drawn from this work are useful but should not be taken as a blueprint.

---

## **Study objectives, methods and data**

---

This study explores the sustainability of the existing supply chain for French beans in Guatemala and, in particular, how the chain affects the lives of participating farmers and their families. For the purposes of this study, sustainability is understood to include economic profitability, good land husbandry and social investment including access to education and health care. To be considered sustainable, the supply chain must provide a decent return to participating actors, especially small farmers, their families and their organizations in rural Guatemala without undermining the resource base.

The study reviewed the overall functioning of the French bean supply chain from farmer's fields in Guatemala to retail outlets in the United States. Work included three phases. Phase one focused on understanding the overall chain with all participating actors. The final product of this phase was a schematic representation of the supply chain showing the value that each actor receives from the chain and an assessment of its overall efficiency. Phases two and three of the study centered on effects of the supply chain in Guatemala.

The second phase reviewed the effects of the supply chain on the Cuatro Pinos Cooperative. This phase analyzed questions related to the effects of French beans on the economic sustainability of the Cuatro Pinos Cooperative and its ability to function not only as a viable business but also as a motor of social change and development.

The third phase of the study focused on the effects of the supply chain at the farm and family levels. The study documented existing production systems and costs with farmers to identify the sustainability of the system and their net profits from French beans. Based on production costs and the local context, the study assessed the return perceived by farmers in terms of: (a) the ability to cover production costs including good land husbandry, and; (b) a reasonable minimum level of profit. The study also assessed how profits from French beans contribute to broader processes of social development including issues like access to education and health care.

The methods for the study were adapted from existing guides for supply chain assessment<sup>1</sup>. Extensive use was made of existing secondary data sets of wellbeing and income in rural Guatemala such as the 2005 Human Development Index published by the United Nations Development Program as well as previous comparative poverty work carried out by the Guatemala Secretariat for Planning and Programming, SEGEPLAN.

Despite the use of secondary data to contextualize primary data, the majority of the information in this report is the result of direct interviews with supply chain actors. Extensive interviews were carried out with the Cuatro Pinos professional staff, farmer associations in the Departments of Quiche and Chimaltenango, the Los Angeles Salad Corporation and Costco. David Ricardo Garcia from Counterpart International performed farmer level field assessments of social impact in the Department of Quiche using semi-structured interviews with farmers, their families and also focus groups.

The following table provides a brief summary of the phases, methods and results of the study.

**Table 1. Phases, methods, data needs and expected results**

<b>Phase</b>	<b>Methods</b>	<b>Results</b>
<b>Full chain assessment</b>	<ul style="list-style-type: none"> <li>- Interviews with key actors along the supply chain</li> <li>- Review of existing documents and data</li> </ul>	<ul style="list-style-type: none"> <li>- Initial cost and benefit structure for each actor</li> <li>- Assessment of the systemic efficiency of the chain</li> </ul>
<b>Cooperative assessment</b>	<ul style="list-style-type: none"> <li>- Interviews with key actors in the Cooperative</li> <li>- Analysis of Cooperative records</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluation of the health of the cooperative</li> </ul>
<b>Farm level assessment</b>	<ul style="list-style-type: none"> <li>- Review of existing poverty data (UNDP and SEGEPLAN)</li> <li>- Interviews with selected farmers to assess cost structures and production systems</li> <li>- Comparative analysis of participating farmers versus national poverty data</li> </ul>	<ul style="list-style-type: none"> <li>- Identification of a locally relevant 'fair return'</li> <li>- Household histories detailing use of French bean income</li> </ul>

The governance of the study was managed via a Memorandum of Understanding signed by participating actors. This document is a summary of the final report presented and approved by those actors in June 2007.

<sup>1</sup>. Lundy, M., Gottret, M.V., Cifuentes, W., Ostertag, C.F., Best, R., Ferris, S., Peters, D. 2004. **Design of Strategies to Increase the Competitiveness of Smallholder Chains**. International Center for Tropical Agriculture, CIAT, Rural Agroenterprise Development Project, Cali, Colombia.

---

## French Bean production and market

---

The product under study is the French green bean (variety *Haricot vert*). To meet Costco specifications, the product should be green, of fairly uniform size (between 4 to 4.5 inches long) clean, fresh and tender with a crisp snap. Unacceptable defects in the product include insects, dirt and decay. Common food safety standards and traceability also apply to this supply chain.

French bean production in Guatemala is relatively simple with land preparation carried out by hand or with the help of oxen over approximately two days. Following this, aged chicken manure is applied to the field and incorporated into the soil<sup>2</sup>. Next, seed is sown over a two day period. Most farmers use the seed provided by Cuatro Pinos. After the sowing, the farmer closely monitors the development of the plant. Farmers apply fungicides and pesticides to ensure a healthy crop. The types and quantities of agrochemicals used throughout the 10 weeks of the growth of the plant are generally defined by Cuatro Pinos, because they are provided as credit. In some cases, local associations provide fertilizer to their producers, but in all cases the Cooperative oversees input quality and quantity.



Production areas vary depending on the season of the year. During the dry season – from January to May – access to irrigation is key for French bean production. Farmers without access to irrigation systems are severely limited during this time of the year. Farmers with irrigation are able to produce a higher quality crop. During the rainy season – June to December – production areas are located in sites with good drainage such as slopes or hillside plots. Production volume and area are both reduced during rainy periods due to the potential for losses due to excess rain.

Based on interviews out with actors along the supply chain, a consensus exists that the market is growing for products of this type and for this product in particular. While it was not possible to generate reliable secondary time series data for French bean imports or consumption in the US, comments from LA Salad and Costco depict a market with strong growth potential for value-added horticultural products. In this sense, a value-added product is one differentiated by outstanding quality, presentation, shelf life and a competitive price. French beans are a good example of this kind of product.

While this growth is an opportunity for French beans, the product has to move large volumes to maintain its position in the Costco format. In addition to supermarkets, there is increasing demand for this product from the food service industry. During the year, there are distinct seasons of demand for French bean with sales generally stronger during cooler months in the northern hemisphere than during summer.

---

<sup>2</sup>. Prior to application, the chicken manure is processed and analyzed by a laboratory which certifies its composition.

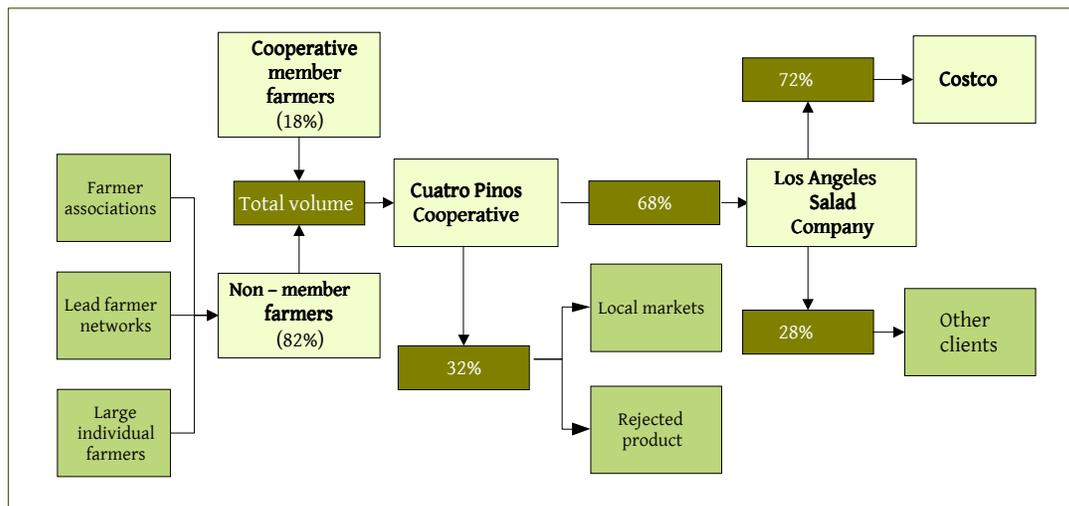
## The French bean supply chain

The members of the French bean supply chain in Guatemala are shown in Figure 1 below.

### The Farmers and their organizations

During the 2005-2006 production season, the French bean production network managed by Cuatro Pinos included 1,941 small farmers and their families located in 16 municipalities in the Guatemalan uplands<sup>3</sup>. Eighty-one percent of these municipalities are ranked lower than the national average on the United Nations 2005 Human Development Index and 75% have higher rates of extreme poverty than their respective departments according to the Guatemalan government. The producers involved in the production of French bean are generally small farmers with, on average, access to a total of between 1 and 3 *cuerdas* of land<sup>4</sup> or a quarter to a tenth of an acre.

**Figure 1.** The French bean supply chain in Guatemala



In Guatemala it is common for only the male head-of-household to appear as the official producer when, in fact, the family participates in the production and harvesting of the crop. A rough estimate of five people per producing family indicates that a total of approximately 9,705 people participated in French bean production during the production season studied.

Two types of producers exist in the supply chain: farmers who are members of the Cuatro Pinos Cooperative and non-member farmers. Member farmers live in close proximity to the central offices and packing facilities of the Cooperative and have been

<sup>3</sup>. The producers were located in the Departments of Sacatepequez (246 producers), Chimaltenango (600 producers), Jalapa (100 producers) and Quiche (995 producers).

<sup>4</sup>. Farmers in Guatemala use the Spanish measure of *cuerda* to delineate land holdings. However there are different *cuerdas* (25x25 *varas*, 30x30 *varas* and 40x40 *varas*) depending on the length of the sides in *varas*. A *vara* is approximately 0.8359 meters. In Sacatepequez, where Cuatro Pinos is located, a *cuerda* is 40x40 *varas* (approximately 1/4 of an acre) while in other growing regions such as the Department of Quiche a *cuerda* is 25x25 *varas* (approximately 1/10 of an acre).

involved with the organization since its inception in the late 1970's. Non-member farmers live further away from the Cooperative – up to six hours by car – and tend to be relatively new to vegetable production. Non-member farmers link to the Cooperative in diverse ways: (a) as legally recognized or informal farmer associations; (b) through informal networks organized and managed by a lead farmer or (c) as individual large farmers. The participation of individual large farmers is minimal meaning that most farmers link to Cuatro Pinos through an association or lead farmer model.

Both of these structures serve to reduce transaction costs between individual farmers and the Cooperative by generating larger volumes of production, channeling and distributing credit and technical assistance and maintaining networks to communicate quality and volume needs. The major difference between the two models lies in their level of legal recognition and their resulting ability to access public funds for infrastructure investments as well as the final benefits that accrue to farmers.

Most of the producer associations currently working with Cuatro Pinos have evolved from previous publicly funded development initiatives, are legally recognized by the Guatemalan State and often own or have access to important infrastructure such as packing houses or irrigation systems. All associations provide some level of support to their members ranging from basic services (managing contracts with the Cooperative, distribution of input credits, bulking up French bean volume and distributing payment received from Cuatro Pinos) to more advanced services (technical assistance, access to development assistance, accounting and, increasingly, packing houses). Some associations, such as Agrisem in the Department of Quiché or Asocampo in the Department of Chimaltenango, explicitly seek to replicate many of the services currently offered by Cuatro Pinos. Important differences exist between the participating associations in terms of the costs they charge for the services provided as well as their capacity to bring in public support from the Guatemalan State or international donor agencies. In many cases, public monies subsidize the services provided.

Lead farmers also link individual smallholder non-member farmers to Cuatro Pinos. A lead farmer is a producer himself who serves as the contact point between the Cooperative and a network of neighboring farmers. Lead farmers link producers to Cuatro Pinos by channeling information, input credit, technical assistance and payment to farmers and a consistent volume of French beans to the Cooperative. In contrast to the formal associations, lead farmers do not tend to offer as wide an array of services nor can they easily access subsidies. However, the services that they provide are commercially viable, as they do not depend on subsidies.

The role of intermediary organizations between Cuatro Pinos and dispersed smallholder farmers is of increasing importance as more and more French bean production comes from non-members. During the 2005-2006 season, non-member farmers provided 82% of the French beans purchased by Cuatro Pinos with the remainder coming from member farmers. The distribution of production between

member and non-member farmers has been similar since the 2002-2003 season but with a nearly eight-fold increase in product volume over the same time period.

### **The Cuatro Pinos Cooperative**

The next link in the value chain is the Cuatro Pinos Cooperative itself. The history of Cuatro Pinos as a cooperative merits a document of its own as it embodies many of the challenges and opportunities faced by farmer organizations throughout the developing world<sup>5</sup>. Cuatro Pinos plays a keystone role in the French bean supply chain as the central coordination point between market demands – as communicated by Costco and LA Salad – and supply from communities in various parts of Guatemala. In this role, Cuatro Pinos mediates between diverse interests, demands, languages and cultures. This is not an easy task and is made less so by the difficulties inherent in an international supply chain and cultural and social idiosyncrasies and divisions present in Guatemala.

In terms of supply, Cuatro Pinos manages the overall production system in Guatemala. This includes the establishment and distribution of production quotas among farmers and organizations via contracts, credit provision in the form of inputs (seeds, fertilizer and plastic)<sup>6</sup>, technical assistance either direct or indirectly, product purchase, selection and quality control, export and, finally, payment. In the case of Cooperative members, Cuatro Pinos also provides local packinghouses and trucks to get the French beans to the central packing facility. To manage this system, the Cooperative makes use of personal contacts, field visits, plant visits and telecommunications.

From the demand side, the role of Cuatro Pinos includes the above production related points plus issues like the promotion of good agricultural practices at the farm level, quality control (selection of and grading of product) at the packinghouse, cutting, packing, cooling, food safety controls, export and billing. The Cooperative also offers pesticide residue testing as part of its role in the supply chain. Cuatro Pinos is also responsible for managing volume – either increasing or decreasing – depending on the shifts or trends in the market.

### **Los Angeles Salad Company**

In collaboration with Cuatro Pinos, LA Salad plays a linkage role in the chain between production in Guatemala and retail in the US. LA Salad manages relations with clients such as Costco and communicates final client needs in terms of quality, volume, price

---

<sup>5</sup>. The author would like to thank Mario Muñoz and Tulio Garcia for extensive history lessons on the roots and evolution of Cuatro Pinos as an organization as well as on the larger questions of farmer organization for dynamic markets in Guatemala and Latin America. Both Mario and Tulio are excellent living guides on the potentials and pitfalls that confront such initiatives in the developing world.

<sup>6</sup>. Credit provision from Cuatro Pinos is done in-kind with production inputs. Payment is discounted from production with 25% of the loan value being retained each week. In cases where the farmer is behind in payments, this percentage increases to 50%. Interest rates are 12% annual. The Cooperative is currently reviewing options to spin off the credit side of the business to a specialized enterprise.

and product presentation to Cuatro Pinos. They work closely with Cuatro Pinos to guarantee an adequate supply of high quality packing materials<sup>7</sup>, ensure quality compliance both in Guatemala via training and technical support and at the two ports of entry for the product in the US (Miami, Florida and the City of Industry, California). In regards to Costco, LA Salad provides assurance of product quality, a guarantee of excellent product shelf life via the use of advanced packing materials and processes and a continuous supply of product. When either Cuatro Pinos or Costco have issues with the French bean supply chain, these are communicated through LA Salad.

### **Costco**

The penultimate actor in the French bean chain is Costco. Costco manages a network of sales points in the US where French bean is sold in 2-pound bags (slightly less than 1 kg). Costco's functions in the chain are distribution, promotion, sales, payment to LA Salad as well as the provision of market trends and projections for production schedules in Guatemala. Costco engages directly with LA Salad on a day-to-day basis and visits Cuatro Pinos once or twice yearly to ensure product quality and food safety. When the product leaves Costco it does so in the hands of the final actor in the supply chain: a consumer in the US.

### **Yields, costs and income distribution**

The economic analysis of the French bean chain, particularly in regards to small producers in Guatemala, is of central interest to this study. This section provides a summary of these findings.

Smallholder farmers who grow French beans for Cuatro Pinos in Guatemala use one of two production systems: (a) a traditional system or (b) an improved system. The difference between (a) and (b) is principally the use of a plastic ground cover and drip irrigation in the later which allows the farmers to shorten the production cycle, achieve additional yields and improve quality during the rainy season. The traditional system (a) produces an average harvest of 2,000 pounds of French bean of Costco quality per *cuerda* or 12,500 pounds per *manzana*<sup>8</sup> 60 days after planting. The improved system (b) averages 2,200 pounds of Costco quality French bean per *cuerda* or 13,750 pounds per *manzana* 52 to 54 days after planting<sup>9</sup>. Total production costs for traditional technology are US\$0.23 per pound and US\$0.22 with improved technology<sup>10</sup>.

Sales prices for French bean followed two modalities in the 2005-2006 season. Cuatro Pinos offered all producers a fixed price of US\$0.36 per pound, which the majority

---

<sup>7</sup>. Specifically packing materials that improve the presentation and shelf-life of the final product in retail outlets.

<sup>8</sup>. A *manzana* is equal to 0.69 hectares or 1.7 acres of land.

<sup>9</sup>. Actual production figures are higher when non-saleable product is included. Given the specific focus on the Costco market channel, low-quality product has been eliminated from the previous figures

<sup>10</sup>. Traditional technology yields 5,670 kilos per hectare while improved technology yields 6,237 kilos on the same land. The figures and measures used above reflect the terms used in Guatemala.

accepted. However a small subset of producers opted for the traditional spot price model where payment is gauged on current market prices. When compared at the end of the season, the fixed price model generated nearly 7% additional income for participating farmers.

When production costs and sales prices are compared, both models are shown to be profitable for small producers. The traditional package generates profits of US\$0.13 per pound (a return on investment of 56%) versus US \$0.14 for the improved technologies (a return on investment of 63%). Farmers interviewed felt that French beans were profitable and, in some cases such as the Department of Quiche, were identified as the most profitable product they had ever grown<sup>11</sup>.

For non-member farmers who rely on intermediary organizations to link them to Cuatro Pinos, additional costs for support services, sorting, packing and transportation are often levied. Cuatro Pinos offsets these costs via targeted price differentials – covering transportation costs from Quiche to the central packing facility, for example – to guarantee that farmers receive the agreed fixed price despite distance and the range of services provided by local partners.

Overall income from the sale of one box of French beans through a Costco warehouse is distributed among chain actors in the following fashion: farmers receive 24% of the final sales price, Cuatro Pinos 22%, LA Salad 11% and Costco 9 %. An additional 35% of the final sales price is shared by all chain actors and covers such things as the settlement account, packing, shipping, product degradation and loss at the retail end of the chain. These are gross distribution figures and do not reflect the actual profits of each actor.

For farmers we can assign an estimated value to their profits from the sale of one two-pound bag of French beans. Farmers receive a final benefit of approximately US \$ 0.28 per bag of product based on the production costs and benefit estimated earlier. Estimates for the other chain actors are not possible to make at this time due to incomplete or incompatible data.

### **Service provision along the value chain**

The complex in-country network of French bean production and export would not be possible without the provision of key support services Cuatro Pinos provides to producers and services from L.A. Salad to Cuatro Pinos. Cuatro Pinos provides all producers with services either directly or indirectly via associations or lead farmers that include: (a) formal production contracts with set volumes, dates and prices; (b) access to inputs via credit; (c) technical assistance; (d) transportation from central collection points or farms to Cuatro Pinos, and; (e) prompt payment for their product. The costs of these services are absorbed by the service provider – e.g. Cuatro Pinos,

---

<sup>11</sup>. When we compare income from French bean to traditional *maize* production, we find that French beans outperform this staple crop by between 288 to 307%. With increasing *maize* prices, this price differential has probably declined somewhat.

farmer associations or lead farmers – and deducted from the gross profit margin that they receive from the sale of French beans.

Additional services provided by Cuatro Pinos to non-member producers include important intangible assets such as (a) on-going research into improved production systems for French beans and other vegetable crops; (b) access to new market opportunities in a low risk fashion, and; (c) support for organizational capacity building in business and social development skills.

Services provided by L.A. Salad to Cuatro Pinos include market and product development, access to novel packaging technology as well as training and support in food safety. During the 2005-2006 season, in excess of US \$ 300,000 was invested in these services. In addition, L.A. Salad and Cuatro Pinos have developed an innovative risk management mechanism through which 10% of the sales price of each box of French bean is deposited into a jointly managed fund to cover unforeseen difficulties. These include lost or damaged shipments or other losses. During the period under study US \$ 400,000 from this fund was used to cover product losses and ensure payment to farmers and an additional US \$ 230,000 was used to write off loans to farmers affected by Hurricane Stan.

In sum, these services provide a nearly ‘turn-key’ opportunity for rural producers through which they produce French beans for a set market under clearly established terms. The substantial risk reduction embodied in this model explains why even truly poor families can avail themselves of this opportunity.

---

## Impacts

---

During the 2005-2006 production season, Costco purchased 4.2 million pounds of French beans from Guatemala. From those purchases, US\$1,512,000 went directly to farmers for an average of US\$779 per family. After accounting for inputs, labor and irrigation expenses, the average family received US\$596 of net profit per French bean cycle. This value is 163% of the extreme poverty line<sup>12</sup> and 82% of the poverty line<sup>13</sup>. When family labor is included as income and not as an expense, a truer measurement of actual impact in the context of rural Guatemala<sup>14</sup>, the average family received US\$1,504 or 412% of the extreme poverty line and 206% of the poverty line.

In focus group and individual discussions, families reported using income from French bean production to invest in access to health care services, school tuition and clothes for their children, home improvements, land purchases and other pressing needs. For many families, such as those located in the Department of Quiche, French beans

---

<sup>12</sup>. Extreme poverty is defined as income equal or less than US \$ 1 per day or US \$ 365 yearly.

<sup>13</sup>. Poverty is defined as income equal or less than US \$ 2 per day or US \$ 730 yearly.

<sup>14</sup>. In Guatemala, family labor does not represent an expense because no money actually leaves the household. The first figures assume a net cash outflow for labor while the later more closely mirror reality in rural Guatemala where the profit from family labor accrues to the household.

provide a viable path towards a dignified life that includes primary and secondary education for their children, improved housing and more frequent access to health care<sup>15</sup>.

Can the preceding be interpreted to mean that Cuatro Pinos and French bean production are contributing to poverty reduction in Guatemala? A definitive answer cannot be made without more complete studies at the household level. We can say, however, that the areas where French bean production has expanded the most during the last four growing seasons have high levels of poverty, that the majority of producers involved in the program have limited access to land and that French bean production should contribute to increased income levels in these communities. Therefore it appears fair to say that French bean production – particularly the expansion of production areas and volumes driven in no small part by access to the Costco market – is focused on poor rural communities and smallholder farmers. When existing poverty figures are compared to the physical distribution of Cuatro Pinos producers from the 2005-2006 harvest it is clear that somewhere in excess of 90% of all Cuatro Pinos French bean producers are located in municipalities with higher than departmental averages for poverty thus implying that the poor have access to this income generating opportunity either as producers or as laborers<sup>16</sup>. While none of this data clearly proves that French bean production leads to wealth creation in poor communities, it does provide strong circumstantial evidence that this is occurring.

In addition to farm level impacts, the French bean value chain generates significant off-farm employment for sorting and packing activities managed mostly by women. During the 2005 - 2006 production season, post-harvest activities generated a total of US \$ 827,400 in income for 546 people, 84% of whom are women. Nearly half of this total can be attributed to French bean sorting and packing. All Cuatro Pinos employees receive income in excess of Guatemalan legal statues, have access to education opportunities ranging from literacy training to university scholarships and benefit from on-site subsidized health care for themselves and their families. During the 2005-2006 season, French bean production contributed US \$ 25,437 to scholarships and US\$16,411 to on-site health care activities. The Cooperative implemented a profit-sharing model that distributed an additional US\$85,607 to French bean producers at the end of the 2005-2006 season both through Cooperative dividends and other mechanisms.

The Cuatro Pinos Cooperative benefits from the sale of French beans. This product represented nearly half of all sales during fiscal 2006. Cooperative profits overall have increased by an average of 51% annually over the last three fiscal years with French beans leading the way in the product mix. The Cooperative has taken advantage of the

---

<sup>15</sup>. An additional benefit identified by women in Quiche was the fact that income from French bean production was sufficient to allow their husbands to stay on the farm and not migrate to harvest coffee or sugarcane several months a year. Aside from family unity, the non-migration of spouses led to a lower incidence of sexually transmitted diseases among women interviewed.

<sup>16</sup>. The real percentage may be even higher but the municipal figures for producers from the Department of Jalapa are lacking thus making a full comparison impossible.

market opportunity presented by this product to greatly expand its network of affiliated producers and producer associations. To this effect, nearly US\$1.7 million has been leveraged from the Guatemala Government Social Investment Fund, FIS in Spanish, to support the installation of irrigation and packing facilities in strategic points around Guatemala. Cuatro Pinos provides on-going coaching to partner organizations in how to access funds for infrastructure as well as support for social development projects in education and health care. In this sense, the impact of Cuatro Pinos is far greater than just the direct benefits of the purchase price paid for French beans.

---

## **Conclusions from the chain assessment**

---

Despite the overall strength of the French bean supply chain, areas of concern exist. At the farm level, these include the need for commercially viable rotation crops to reduce potential pest and disease buildups, the climate related risks faced by small farmers without access to irrigation systems, access to funding to promote the widespread implementation of Good Agricultural Practices by poor farmers and the social effects of a new cash crop on family and community dynamics. While French beans are a good option for smallholder farmers under the conditions provided by this chain, this crop is not sufficient to guarantee significant poverty reduction on its own. Complementary investments in health, education and productive infrastructure are needed to support broad processes of socially inclusive development in the uplands of Guatemala.

At the national scale, the entry of a secondary supplier of French beans in Guatemala is of grave concern to Cuatro Pinos given the Cooperative's outstanding investments in existing producers and the potential for producer poaching. At an international level, simple, complete and low-cost information flow is needed to reduce under and over production that adversely affects the chain as well as identify and manage problems in an agile fashion.

Is the French bean supply chain as managed by Cuatro Pinos, LA Salad and Costco sustainable? The chain provides a positive return to participating actors, especially small farmers, their families and their organizations in rural Guatemala both in terms of economic as well as non-economic benefits. Difficulties inherent to fresh product supply chains such as occasional disconnects between production and sales volumes, information management and logistical issues exist that need to be dealt with. Significantly, all supply chain actors have shown flexibility and willingness to collaborate on possible solutions. Further studies to explore the specific implications of this supply chain for small farmers, rural households, men, women and children might be considered as well as the establishment of a simple, low-cost monitoring and evaluation system to track the effects of this chain on rural development in Guatemala over time.

In sum, the French bean supply chain is a strong example of how smallholder farmers, their families and their organizations can provide a superior product to an exacting

buyer in a competitive and consistent fashion. It also shows how such a process can be structured to contribute to the economic and social development of rural communities and organizations. As such the French bean supply chain in Guatemala is a strong example of how dynamic markets can include the poor and serve as a motor for positive change.

---

## **Impact of the assessment on the French bean chain**

---

This report presents data gathered during the assessment of the French bean value chain linking Guatemalan farmers with Costco in the US. In addition to providing a written record of findings, the data, information and opinions behind this document have served as a focal point for on-going discussions between the supply-chain members themselves. While still a work in progress, the process of chain upgrading based on the willingness of all actors to engage in this process and facilitated by the process of documentation has generated specific changes in the structure of the chain itself. These include:

- A request from Costco that its product be sourced exclusively from non-cooperative members to proactively target their impact on poorer communities and producers.
- Costco's commitment to purchase additional products besides the French beans from the Cooperative to increase volume and stabilize demand over time.
- A review of existing business practice in regards to selecting secondary suppliers and how such a process can be managed to provide incentives in this process to sustainable supply chains such as that managed by Cuatro Pinos.
- The decision to establish the Juan Francisco Garcia Comparini Foundation provisioned by funds from French bean sales to support health care access and educational scholarships for participating non-member farm and packinghouse families. Chain actors have begun discussions to provide funding per crate of product sold. An on-going monitoring and evaluation system for the poverty impacts of these funds is under development.

Beyond the specific decisions made to date regarding the French bean chain in Guatemala, the process of working with supply chain actors to assess the sustainability of their systems shows promise on several fronts. First, increasing the visibility to all actors of their interdependence and need for collective action has been a positive outcome. Greater knowledge of the reach of each actor's decisions, while not in itself a guarantee of better decisions, helps generate more informed dialogue about options and highlights the tradeoffs between short-term pressures and long-term business sustainability. Second, increased access to shared information supports more creative problem solving. Again while not a cure for all ills, this information permits actors to better understand the causes of difficulties and work together to identify solutions. Finally, a process through which actors are shown their own system but not provided with ready made solutions – of which few exist – seems effective in promoting generative learning at the individual and collective level and thus not only better solutions but better relationships and, finally, a stronger supply chain.

---

## Bibliography

---

- PNUD. 2004. *Desarrollo Humano y Ruralidad: Compendio estadístico 2004 - Guatemala*. Programa de las Naciones Unidas para el Desarrollo. Guatemala.
- Vakis, Renos. 2003. *Guatemala: Livelihoods, Labor Markets and Rural Poverty*. Guatemala Poverty Assessment Program (GUAPA) Technical Paper No. 1. World Bank, Washington, DC.
- World Bank. 2003. *Poverty in Guatemala*. Guatemala Poverty Assessment Program (GUAPA). Poverty Reduction and Economic Management Unit, Human Development Sector Management Unit, Latin America and the Caribbean Region. Washington, DC. February.