# CHAPTER 12. EACs FOR PROCESSING AND MARKETING RASPBERRIES

In this chapter I describe three EACs dedicated to the processing and marketing of raspberries for international markets: Golden Berries S.A., Frutas de Guaico S.A. (or Guaicofrut), and Frutas de Romeral S.A. (or Romefrut). As discussed in Chapter 4, raspberries do not figure prominently among the EACs' main crops and enterprises. Only 41 of the 424 EACs that I surveyed were involved in raspberry processing and/or marketing. However, these cases are interesting because raspberries are an almost totally new crop in Chile. In less than 10 years, production and exports have grown to the point where Chile is now the largest producer in the southern hemisphere, agroprocessing facilities have been set up, export firms have been established, technologies have been developed and disseminated, production areas with comparative advantages have been consolidated, etc. We can thus use these case studies to analyze how EACs adapt and function in a climate of very rapid innovation along the whole chain from the field to consumers in the North.

## 12.1 The context

World production of raspberries increased by about 60% between 1992 and 2000. Total world production is around 400,000 tons, of which Chile contributes about 8%. However, Chile is the only large producer in the southern hemisphere, allowing it to supply the markets in Europe and North America off-season.

Chile's aggressive incursion into raspberry production was motivated by the sharp increase in international prices when civil war disrupted production in the former Yugoslavia, until then the world's most important producer. Chile, a major exporter of fresh fruit for a long time, had the right climate, the expertise and the infrastructure necessary to respond rapidly to this window of opportunity.

Chile exports its production to the European Union (frozen) and to the USA (fresh). Chile's exports represent about 40% of the European Union's imported raspberries, and about 16% of the USA's. Chile's market share grew steadily during the 1990s. There are about 36 industrial firms which process and export raspberries in Chile, two of which control about 61% of the market.

As a result of this market opportunity, Chile's production and area increased from nearly zero in the early 1980s to about 30,000 tons on 7000 ha in the late '90s. As the farmers involved in this crop learned how to manage it, average national yields increased by about 50% in the last decade, and by close to 300% in the most productive regions.

There are around 3,200 farmers involved in raspberry production in Chile. The average size of raspberry plantations per farm is around 2 ha. About 70% of all the producers are concentrated in Regions VII and VIII. Several agroindustries are also present in these zones. Almost all the production is destined for the international market, where prices can be up to $ 6 per kg higher than on the national market. Small farmers play an important role in raspberry production, thanks in part to an early and aggressive support program headed by the regional offices of INDAP in Regions VII and VIII. For example, over one-third of the raspberry production in Region VII, the most important region for this crop in Chile, is controlled by small farmers who are INDAP clients.

From year to year raspberry prices can fluctuate by as much as 300% on the international and national markets, making this a very profitable but very risky product. Growing international competition has imposed high quality standards that producers must meet to remain in the market. Those farmers who can meet these standards can access the fresh or frozen product markets, while those who fail must sell their produce to juice and marmalade factories. The price difference between the fresh, frozen, and juice and marmalade markets, can be as high as 400% and 800%, respectively.

The average cost of establishing one hectare of raspberries is around $ 5,600, while annual production costs run at about $ 7,000. Small farmers can compete basically because they rely on household labor. This is a very important advantage in such a labor-intensive crop, where harvest costs can represent up to 60% of total production costs. In addition, small farmers can supervise the harvest process closely, often allowing them to maintain a high quality product, compared to a medium or large farmer who can easily have hundreds of workers in the fields during harvest.

Another advantage for small farmers is that they can count on subsidies from INDAP to establish irrigation systems; in a commercial farm this makes up about 20% of the initial investment.

## 12.2 The case studies

### 12.2.1 Golden Berries S.A.

Golden Berries S.A is a corporation owned by 10 shareholders, themselves EACs with a total membership of 339 small farmers. Each of the 10 EACs which owns Golden Berries is organized around a cold storage warehouse. Golden Berries markets its members' raspberry production as well as that of an additional 247 small farmers who are not members of the shareholding EAC. Its main offices are in the city of Parral, Region VII, about 400km south of Santiago.

*A brief history*

Golden Berries grew out of a Microregional Development Project, formulated and approved by INDAP in 1995. In the microregion of Bullileo, two private consultant firms were working with 540 small farmers under contract to the Technology Transfer Program. Over 150 of these farmers went into raspberry production with technical support from these advisors and with loans and grants from INDAP. In 1995 the area under raspberries controlled by these farmers represented about 3% of the national total.

I interviewed many of the small farmers who were among the first to start producing raspberries. They told me that until the early 1990s, wheat had been their main crop. However, as Chile began to open its markets to international competition, they found that they could not compete with Argentinean wheat. One of these farmers told me that *"a large farmer with 100 ha or more of wheat, can still make enough money to make a living, even if he only obtains a profit of $ 420 per hectare. But a small farmer, with a maximum of 5 or 10 ha of wheat, cannot expect to survive based on wheat production... we had to find new alternatives, or we would end up having to sell the land so that our children could go to school and have a future."*

By the mid-'90s average raspberry prices had reached a peak of between $ 6/kilo to $ 17/kilo (depending on quality), meaning that a small farmer could generate a gross income of up to $ 70,000 per hectare, close to one hundred times more than what one hectare of wheat could produce.

The idea of planting raspberries had been taken from several large farms who had brought the crop into the region *"One day we would find out that a few raspberry plants had somehow crossed the fences during the night from the large farms and had appeared in our backyard.... this is how we began to learn how to propagate the plants, what diseases affected them, and so on... but we were only learning, because we lacked the money to start growing them on a larger scale."* At the same time, the staff of the private consultant firms working with the small farmers began to learn about the new crop and to start small-scale demonstration and experimentation plots.

In 1993-94 INDAP opened up a credit line to finance small farmers' raspberry plantations. One of them told me that *"as soon as we had the funding available, this spread like a wildfire"*, and in only one year there were dozens of small farmers with a quarter to half a hectare of raspberries.

Several farmers told me that with the support of their advisors and by observing the large farms, they

soon learned how to produce raspberries, achieving moderately high yields and good quality, but that marketing remained an important problem. *"We could not sell directly to the exporters, because we lacked the volume they demanded, so we had to sell through middlemen."* Their bargaining position was very weak, because the produce must be sold the same day it is harvested as it is highly perishable.

The high prices of raspberries in the mid-'90s provided an extremely strong incentive for small farmers to expand their production as fast as possible, but this could not happen without the producers solving their marketing constraints and especially without ready access to cold storage during harvest.

Under the Microregional Development Project, the first five cold storage warehouses were built in 1995, and another five were added the next year. The groups of farmers that made up the EACs controlling each warehouse had formed several years before to participate in the Technology Transfer Program. According to the General Manager of Golden Berries, the second group of warehouses was *"a big mistake"*, since it led to excess cold storage capacity. A better plan would have been to add greater volume to the initial five units. Around half of the warehouses have perennial problems meeting their own costs, given the low amount of raspberries processed and sold by them, relative to the size of the investment and the cost of running the cold storage unit.

Several sources confirmed that the decision to have 10 warehouses was made because each local group of farmers wanted their own unit, and because INDAP did not have the long-term vision to convince farmers that the prevailing high prices would eventually have to fall and that to be profitable each unit would need to work at close to full capacity.

During 1995 and 1996 the Microregional Development Project was coordinated directly by INDAP, who hired a small team of consultants to manage it. These were more accountable to INDAP than to the farmers. INDAP's management of the project soon led to a growing tension between the productive and technological aspects (coordinated by the private advisory firms) and the commercial side of the project (managed by the INDAP consultants). It was unclear who was accountable to whom, and there were frictions between planning, management and implementation. In other words, INDAP had started the project with an organizational design typical of an agricultural development project, and this soon became incompatible with the needs of a business endeavor.

With reference to INDAP's organizational design, one of the Golden Berries board members explained that *"the concept was correct, but it was badly applied. Because of the mistakes in the implementation, several of the warehouses were on the brink of bankruptcy... the optimistic production goals were not achieved, and the quality was also not very good.... the original advisors would come to our farm two or three times per year, and they would spend most of the time in meetings when what we needed was to have them on the farm as frequently as possible... when we had a problem that we did not know how to solve, we would have to wait for them or go to their office, and by the time we had a solution it was too late... they kept working with raspberries the same way they used to do with wheat, but with wheat we knew what to do since we had been planting it since always... with raspberries we were learning and we needed more support, and they [the advisors] just were not up to it."*

One of the Golden Berries board members told me that when they realized the project was not achieving its intended results, *"we began to see that to make it work we needed to take direct control."*[66]

In 1996 INDAP hired a new Coordinator of the Microregional Development Project, who led the transition from the development project organization to the formation of Golden Berries. When the EAC formed in 1996, the Coordinator of the project was hired by the farmers as the General Manager of the firm. Finally, in 1997 the new EAC convinced INDAP to transfer to Golden Berries the funds

[66] Despite these early failures, prices were so high that farmers still ended up with a much higher income than they used to with wheat. Besides, as many told me, the very labor-intensive raspberries meant there was plenty of well-paid work for hundreds of farmers and their families.

used to pay the private consultant firms that were providing technical assistance to the farmers. With these funds, the EAC was able to hire its own technical and administrative staff and establish its own offices.

### *Organizational set-up*

The board of Golden Berries has 10 members, one from each of the shareholding EACs. Golden Berries has 16 paid employees: a General Manager, an Operations Manager, a manager for administration and finances, six administrative staff, and five specialists in charge of providing technical assistance to the farmers.

The main service that Golden Berries provides to its members is to market their raspberries. Golden Berries sells the product to several exporters, although the trend has been to concentrate on fewer clients. The individual farmer is responsible for producing, harvesting and delivering his or her raspberries to the cold storage warehouse, where they are graded according to industry standards, packaged and stored. Golden Berries is informed daily of the amount of product available in each warehouse for the different quality grades, and with this information it negotiates directly quantities, prices and payment and delivery conditions with the buyers.

In each step in this process (farmer to warehouse, warehouse to Golden Berries, Golden Berries to processing and export firm) there is a sales operation. That is, the farmer sells to his or her warehouse, who sells to Golden Berries, who sells to the final client. The EAC has chosen this system because it feels that it stimulates greater efficiency at each link in the chain, and specifically because it avoids having the more efficient (farmer or warehouse) subsidize the less efficient (farmer or warehouse). The farmers also told me that with this system it is much easier to clarify and render accounts: Golden Berries is accountable to each warehouse individually, and each warehouse to each of its individual members. As one of the warehouse managers told me, *"some organizations only know about averages, average costs, average prices... so they end up not knowing if someone is a cat or a rabbit!"*

The second most important service provided by Golden Berries, and one that is highly valued by the farmers, is technical assistance. As with many other EACs, Golden Berries also sells the most important agricultural inputs that its members need, not only for raspberry production but also for their other crops. The EAC also takes care of the accounting of the individual warehouses, who thus share this cost.

### *Performance analysis*

The formation of Golden Berries has solved many of the original problems: technical assistance improved substantially, a fact confirmed by all the farmers that I interviewed: *"the technicians now respond to the General Manager and to the board, and not to somebody sitting in an INDAP office... the technicians have clear goals that they must meet, and these are the same goals that we need to achieve in order to turn out a profit, so production and the economic side are like two sides of the same coin, not like before... when the advisors are hired by the farmers, things go much better, because if we lose money, they don't get paid or they are fired."*

Under the new arrangement, yields and quality improved substantially, and the farmers were able to work with several buyers, so selling their production has never been a problem. However, Golden Berries itself never managed to balance its accounts, as its owners (i.e., the small farmers) always demanded very high prices for their raspberries, leaving the EAC little or no margin to cover its own costs. To many farmers, Golden Berries was a 'service organization' that should continue behaving as before: an organization subsidized by INDAP to provide an almost free service to small farmers. This pressure was strongest from the four or five warehouses that were having difficulties meeting their own costs due to their relative low volumes of operations. A simple analysis showed that at best Golden Berries could expect to generate an annual income of around $ 78,000, but its costs in 1998-99 were around $ 282,000. The gap was financed by INDAP through a series of grants, which by 1999 added up to $ 177,000 per year.

Why did INDAP and the farmers get involved in an investment project that had such a faulty design? One of Chile's top raspberry experts explained to me that *"in 1993-94, few people in Chile and much less in INDAP knew much about raspberries. When they launched these raspberry projects with the small farmers, they were probably afraid of getting involved in the processing and export side of the business because they lacked the technical and managerial know-how. They wanted the small farmers to take advantage of the new opportunity, but they just did not know how to do it right."*

Towards the end of 1999 the board became aware of their EAC's tenuous financial position. However, many board members insisted that it was the duty of the government to supply the necessary funding to sustain the organization, as it was indispensable for small raspberry growers to have this marketing service to avoid falling prey to the middlemen. Other board members and the managers explained to me that the only alternative was to diversify into different income-generating activities, and, in particular, to move several steps ahead in the value-adding chain to become not only a trader but also a processor and, eventually, an exporter of raspberries.

At the same time, by 1998-99, it was becoming quite obvious to many stakeholders and observers that decision-making power was mainly concentrated in the hands of the General Manager of Golden Berries, despite the fact that the board appeared to be quite active and involved in management. On the surface, the board carried out all of its duties, but in fact the General Manager was directing the decision-making process. Several well informed sources (including four members of the board) told me that the board was limited by the small farmers' restricted capacity as corporation directors. The result was an EAC owned by a group of shareholders incapable of controlling and directing a strong external manager.

Over time, the information to the board and to external stakeholders such as INDAP, became less specific and less regular. In May 1999, INDAP requested an external audit of the EAC because the General Manager had not been able to provide sufficient information to justify the use of certain grants. The audit established that a substantial amount of money was missing. The board fired the top three executives of the EAC, and immediately informed the shareholders.

The initial reaction of the members was to put an end to the EAC. Eventually, however, the EACs that make up Golden Berries decided to try to rescue their organization. Since INDAP had stopped the flow of funds to the organization, they approached a commercial bank for a short-term loan to help process the 1999 harvest, and they also obtained an advance payment from one of their main clients, a large exporter. When the EAC secured this fresh funding, INDAP partly resumed its financial support. They hired a new manager and imposed a severe cut in the fixed costs of Golden Berries. They also hired an independent external auditor to help the board supervise the new management.

With this effort, Golden Berries managed to survive for one additional harvest. However, by the end of the season it had become obvious to all that the EAC was no longer viable, and the farmers decided to close it down. Seven of the warehouses have decided to continue working together to market their raspberries. One of the warehouses closed down its own operations and the farmers have either stopped producing raspberries or are back to selling to middlemen. The remaining two warehouses have decided to continue their own operations independently.

### 12.2.2 Frutas de Romeral S.A.

Frutas de Romeral S.A. (also known as Romefrut) is an EAC with 48 members. It was founded in 1995 by a group of small farmers who the previous year had successfully sold their raspberries together. Romefrut is based in the municipality of Romeral, in Region VII. The great majority of Romefrut's members are beneficiaries of the agrarian reform with a socioeconomic level that is probably above average for Chilean small farmers.

#### *A brief history*

The original idea of collective marketing was promoted by one small farmer who had been a technical

advisor for IANSA, a large agroindustrial complex working with small farmers in sugarbeet production. As a technical advisor, this local leader had worked with many of the small farmers who would become involved in this project. Since his establishment as a farmer in the area, he had become a highly respected leader in many local development projects.

Many small farmers in the area started planting raspberries in 1990 and 1991. With the boom in raspberry production, this leader began convincing his neighbors of the need to work together to negotiate with the middlemen. The talks went on inconclusively until 1994, when he and a partner rented a small cold storage warehouse and bought around 300 tons of raspberries from 80 small farmers at a higher price than that paid by the traditional middlemen. This convinced the group that it was feasible to sell their produce together.

The group asked INDAP for support to consolidate their experience. As INDAP was promoting the participation of small farmers in the booming raspberry industry, it very rapidly processed this request and in only a few months the project was approved. Of the 80 initial participants, only 48 decided in the end to join the EAC, while the rest declined to make the contribution to the initial capitalization of the firm (the total cost of the shares per farmer was around $ 4,200, payable over a two year period).

### *Organizational set-up*

Romefrut was conceived as a processing and marketing EAC. Using its own infrastructure, it can participate in all the steps in raspberry processing: it buys the raspberries from its members and any other farmer, large or small, willing to sell; it grades, freezes, packages, labels, stores and sells the raspberries through exporting firms. Almost all the produce is sold frozen (IQF, or Individually Quick Frozen, and block-frozen, depending on the quality of the raspberries), in line with the main trend of Chilean raspberry exports, destined for the European market. Less than 5% is of such poor quality that it has to be sold to the juice and marmalade industry.

The EAC buys the raspberries from its members *"because that is how the market operates... the middlemen pay cash on delivery, and if we want the members to sell their raspberries through us, we have to do the same."*

The EAC also buys berries from other small and medium farmers in the area. Members and non-members receive exactly the same treatment in terms of prices and quality control, but the members receive additional benefits, such as technical assistance and greater access to different public programs which support small-scale agriculture. These include the subsidized installation of irrigation systems. In addition, many of the members I interviewed told me that by the time their children grow up and take over the farms, they will have paid the cost of setting up Romefrut; they think they will be able to pass this EAC on to their children, who, as one of the farmers told me, *"will not have to deal with the* conchenchos *[middlemen] as we used to do."*

In 1999 Romefrut had about 10 main clients to whom it sold its processed product. However, the EAC is gradually reducing its portfolio of clients, as it wants to concentrate on no more than four or five to be able to negotiate better and more stable contracts. The EAC has been very successful in using the 'carrot' of its 60 tons of top-quality berries destined for the very profitable fresh market, to negotiate better prices and payment conditions for its frozen product. The manager of one of the two largest exporters in Chile, who buys from Romefrut, said that *"60 tons of fresh-quality raspberries is an extremely interesting proposition, placing Romefruit amongst our most valuable clients."* In the 2000-2001 season, Romefrut, in association with six other EACs, managed for the first time to export a fraction of its production directly to Europe; this trial was successful and the EACs plan to gradually expand this operation.

In its first three years, this EAC experimented with different management approaches. It was led by two people who had played a catalytic role in the formation of the organization. One was the chairman of the board, and the other acted as general manager of the EAC. Like many other EACs, Romefrut had received a direct grant from INDAP to be used to hire and pay its own management, administrative and technical staff. In addition, the EAC received several long-term loans to buy the

land, build and equip its processing plant. Between 1995 and 1997, the EAC implemented several consecutive investment projects to finish and expand the processing plant, until it was able to process over 1000 tons of raspberries per season.

*Performance assessment*

Most of the informants I talked to agreed that during the first two or three years the management and administration of the EAC and its investment projects was very deficient. The technical and administrative staff had been selected and hired by the leaders of the EAC, and apparently they lacked the expertise to adequately manage a complex business operation that was moving close to $ 1 million per year. Gradually, the EAC began to lose much of its working capital. This was because it was diverting a growing proportion of its income to finance expansion projects, and also because of a policy of granting generous credit to many members for buying agricultural inputs, which would be paid back after harvest. In addition, in 1996-97 farmers experienced significant difficulties with their raspberries, due to declining prices and unfavorable weather; many of them had expanded the area under raspberries very rapidly, only to discover that they lacked the necessary labor, technical and managerial capacity to maintain the same high yields and quality standards.

During these early years, the grassroots members neither demanded nor received adequate information about the EAC's operations and performance. This was due to their great trust in the capacity of their leaders who had managed to bring them together and to successfully negotiate the necessary support to start the organization and build the processing plant. The leadership gave the members general information, stating that the EAC was doing well, and the members felt confident as they saw the new buildings and equipment growing day by day.

In 1997, INDAP requested an external assessment of the project, with an emphasis on management issues. This study reported severe deficiencies in the management of the EAC: lack of control and weak accounting practices, extremely large amounts of money owed by the members to the EAC for agricultural inputs, large investments in equipment and infrastructure that had never been used, payments with inadequate documentation, and so on. Based on this report, INDAP requested that the EAC find a new manager with the technical expertise required to put the administration in order. The board, with the support of the shareholders' General Meeting, refused. A few months later at the next board elections, several members were replaced by new ones, but the core of the leadership remained in place. The members felt this was a triumph against INDAP's imposition as an external authority: they felt they had the full control of their EAC and they intended it to stay that way.

One year later, during the 1998-99 harvest, the EAC ran out of money and was unable to pay its members for most of the raspberries that had already been delivered, processed and sold. INDAP this time demanded an in-depth audit, which revealed that the EAC had been steadily losing money for several years in a row and, in particular, that it had lost all of its working capital. Within four months of the crisis being brought out into the open, the members made a number of decisions that eventually saved the EAC.

The members' analysis, conducted in a series of meetings, clearly showed that the problem was the result of bad management and not of any inappropriate or dishonest action on the part of the board or the management. Information provided by the external accountants and auditors was key in allowing the EAC members to regain their trust and to decide on a clear course of action. When it became clear that there had been no foul play, the farmers reacted by electing a new board and hiring a new manager. The new board was expanded to seven members so that each geographic sector could directly elect one board member from their local neighborhood. The original leader, who had been the main promoter of the EAC, was also removed. Because of the shortage of funds, they were unable to hire a professional manager, so instead they hired the most highly educated EAC member. However, the members did agree to hire an external consultancy firm which supports the board and the farmers in several aspects of management, administration, accounting and production and quality control. INDAP supported the emergency plan by agreeing to reschedule the loans it had made to the EAC, but it would not agree to throw in any fresh funding.

In addition to these organizational and administrative steps, the 48 members unanimously made an extraordinary contribution of capital by each donating one ton of raspberries. In addition, for the first time they signed individual contracts with the EAC in which each member established a formal commitment to sell a specified amount of raspberries to the EAC during the next season.

Several of the farmers I interviewed explained that the donation and commitment were more than justified by the benefits they derive from Romefrut. In particular, they see the EAC as providing the basic security they require to continue expanding the farm area under berries. *"Each of us has around 1 ha of raspberries, but we all want to get to at least 2 or 3 ha,"* one of the members told me, adding that *"with Romefrut here, we know we can sell all of our production at a fair price... if we had lost the EAC, we would have ended back with the middlemen and under those conditions it would have been much riskier to expand production."*

Several of the members I interviewed told me that after the crisis it was possible to regain members' trust and support, thanks to a policy of clear, detailed, and frequent information from the external advisors and accountants. Before the crisis, the members would meet three or four times a year, but the information they received was very general. Today, the members meet once a month, and most members attend regularly. The external accountant provides detailed information to members at each meeting. A written accounting report is distributed to all the members every three months. All the major decisions, especially those that pass judgment on a fellow member, are now taken by secret ballot.

These measures began to yield results as the EAC made a profit on its operation the following year. However, the EAC does not have enough capital to buy all of its members' harvest. Its contract with each member covers about two-thirds of a farmer's harvest, and the member is free to sell the rest to the middleman. This way, the EAC has a bit more room to delay payment for a few days, as the members receive cash from the middlemen to meet their immediate expenses.

While this system is an innovative and smart solution to a difficult problem, it still leaves the EAC short of the tonnage it must process to start turning a large and stable profit. In 1999 the members had about 76 ha of berries (mostly raspberries, but some had begun diversifying into boysenberries and strawberries) in full production, plus an additional 25 ha that would go into production one or two years later; an area that is more than enough to sustain the EAC. In addition, all of the members I interviewed made it clear that they intended to continue expanding the area under berries through the partial reinvestment of profits[67]. Thus, the EAC has clear potential to become financially stable if it can increase its working capital enough to purchase a higher proportion of its members' harvest. This is a central goal of the current board, management and external advisors.

### 12.2.3 Frutas de Guaico S.A.

Frutas de Gauico S.A. (also known as Guaicofrut) was established in 1997, after having operated for some time informally. The EAC was formed by 44 small farmers who had been previously working as non-member suppliers of Romefrut.

#### *A brief history*

Many of the farmers in the new group had been involved in Romefrut's formation. Several of them told me they had not joined Romefrut because they distrusted economic organizations, mainly because of bad experiences in the early '70s. According to different sources, the farmers who did not join Romefrut tended to have smaller farms and fewer raspberries than those who did agree to form the organization. To the former, the initial capital contribution of more than $ 4,000 was too much.

[67] Even after prices dropped in the mid-90s, most of the farmers I interviewed agreed that in a 'normal year' they could gross at least $ 3,000/ha, which is at least three times more than the next best local alternative. In addition, they explained that with raspberries they could provide almost full time employment for all the family members throughout the year. Finally, since they can now produce their own plants, the initial investment is considerably lower than when they started.

When Romefrut built its processing plant and began its operations, many of those who had not joined changed their mind. However, the owners would not let them in, although the EAC did buy their raspberries. However, the 1997 raspberry harvest in the area was so large that Romefrut did not have the capacity to buy the produce of close to 100 small non-shareholder farmers; as a result, they lost a high percentage of that year's production.

Motivated by Romefrut's example and being aware that they lacked security in marketing their raspberries, part of this group of farmers secured INDAP grants and loans to launch their own EAC. Each of them had to make an initial capital contribution of $ 200 in cash, plus one ton of berries (about half of the farmers who had been involved in the initiative declined to join when they had to commit themselves to this payment). By the next harvest the EAC was organized and had the basic infrastructure and equipment necessary to begin operating.

The new EAC had the advantage of learning from Romefrut's experience, and, as one member of the board of Guaicofrut told me, *"since we are all neighbors we knew well how Romefrut was working, and when we started our project we were able to take those things that we liked and change those that we did not like."*

In particular, the Guaicofrut group, being made up of smaller farmers with fewer raspberries, could exert a more careful control over their crop, and from the start they decided to compete based on producing top quality fruit. *"The members of Romefrut are larger and they have more volume, but they cannot match our quality. Romefrut has had several of its shipments rejected because of poor quality control, and this has never happened to us."*

Guaicofrut was also able to see how much of Romefrut's infrastructure remained underused, so their investment and expansion strategies were much more careful, thus keeping their fixed and financial costs lower.

Romefrut and Guaicofrut have engaged in several activities together. For example, they have financed joint marketing campaigns; have traveled together to other regions and countries to visit raspberry traders, plantations and processing plants; have organized joint training workshops for their members; and have commissioned joint market studies. However, all the Guaicofrut members that I interviewed agreed they would not join with Romefrut in commercial operations because of the differences in quality.

According to several grassroots members that I interviewed, the most important services they receive from the EAC are:

- the security of knowing that the EAC will buy their fruit at a fair price;
- loans to buy agricultural inputs
- the ability to recuperate the Value Added Tax they pay on their inputs (18% of the gross price)
- cash loans to pay labor costs (up to $ 500/ha), and
- access to good quality and specialized technical assistance services.

Guaicofrut also organizes its members' individual INDAP loan applications, thus saving them time and the cost of traveling to the INDAP local office. Finally, Guaicofrut has an active program of social and community activities for members' families.

### *Organizational set-up*

Guaicofrut's board is very well organized; each member has a specific area of responsibility: assessing the applications for credit on agricultural inputs, supervision of accounts, maintenance of the processing plant and equipment, social and community affairs, and so on. The board meets every week, with the General Manager in attendance. Since 1997, there have been two board elections; the last time a new Chairman was elected, together with several younger EAC members, part of an

explicit policy of encouraging the younger members to take on greater responsibilities. The board has the authority to decide on each and every contract with potential clients, and the General Membership meeting decides on any significant investment, as well as on the general conditions of all the commercial and financial transactions between the EAC and the members.

There are two General Membership meetings per year; one meeting is dedicated to an in-depth analysis of the results of the previous season, and the other to issues such as defining the price, quality, delivery and payment rules for the next season, or defining criteria for auxiliary services like technical on-farm support, or the credit program for agricultural inputs. External informants who are familiar with Guaicofrut told me that there is always a frank debate in the General Membership meetings, and that open but respectful criticism of the board, management or individual members is frequent and well accepted. One of the members of Guaicofrut, who has a technical degree, is the EAC's paid General Manager.

After several years of work, the General Assembly mandated the board to revise the EAC's internal bylaws. One board member explained to me that *"the initial bylaws were written by a lawyer, and we just accepted them... over time we have devised our own rules, and this time the bylaws will be tailored to our own specific needs."*

The EAC has always been careful to keep all its administration and finances in order. In our conversations, the board members emphasized the importance of their decision to hire an expensive external accounting and auditing firm: *"if you want to go into a project like this, you have to be willing to invest in having good information and good accounting services, otherwise you are blind."* The EAC has always paid its loans promptly, and is very careful in assessing each member's application for loans for agricultural supplies, charging a reasonable interest rate: *"there is no use being generous today if we cannot have the results that will let us continue providing the same support tomorrow."*

During the first years, the EAC insisted that all members sell all or most of their harvest through the EAC. In a meeting with the board, I was told that thanks to on-farm visits by the technical advisors (twice weekly), they always have a very good idea of how much fruit each member is likely to harvest, and, in addition, *"we are all neighbors and our farms are next to each other, so it is impossible for one member to sell to the middleman without the rest knowing about it."* To prevent members from selling too much of their production to the middlemen, they established a number of rules, such as linking the credit for agricultural inputs to the delivery of the fruit. But, as the EAC developed, they now think that these rules are less important: *"the members sell to us most of their production because we are doing well and we pay good prices on time.. if we were having problems, we could have all the rules in the world and it would not make any difference."*

The manager adds that the EAC's price policy is to pay the highest possible price that will let the EAC meet its own costs, pays its loans, and finance its new investments: *"the members know perfectly well that until we finish paying our loans, we cannot transfer all of our profits to the members via the price we pay for their product. We know that this will come in time, but first we must lay firm foundations."*

The overall price policy for each season is set at the General Assembly before the harvest starts. The external accountant and the manager first inform the members of the EAC's financial needs for covering its loans and costs. Then the members decide on a profit target for the EAC. This information is then translated into a reference price, based on the available information on international prices at that time. The manager uses the Internet daily to monitor the international prices of raspberries during the harvest season, to help calculate the actual price it will pay to member and non-member suppliers. The grassroots members told me that the actual prices they receive are similar to those paid by the middlemen, but they feel this is because they are still paying off the large investments needed to set up the EAC. During the harvest and marketing season, each member receives a written statement twice a month with a detailed explanation of the amount delivered, results of the quality controls of his or her production, gross price, discounts to pay back any outstanding personal loans, and net total price.

*Performance analysis*

Small price increments have been possible over time as the EAC has managed to raise the volume of operations while maintaining costs, and, in particular, because the EAC has always placed a great emphasis on making investments that allow it to add more value to the product before selling it. In 1996-97, the EAC was only capable of collecting 200 tons in cold storage chambers and negotiating the sale collectively; in 1997-98 it was able to freeze a small share of the produce, and it made its first direct export to England (45 tons or about 15% of production). One year later it processed all the produce and directly exported 150 tons (40% of the total production) to Canada, the USA and different European countries. In 1999-2000, its plans included increasing production by about 60%, processing all of it before selling it, and exporting at least 80% of the stock directly. In the year 2000, the EAC took out a loan with a private bank for equipment for processing vegetables.

## 12.3 The raspberry EACs' performance and impacts

In this section I will describe and analyze the economic and financial performance of these three EACs, as well as examining their impacts on their members' farms and households.

### 12.3.1 Economic and financial performance

Table 12.1 shows that in 1998 all three EACs were in a delicate economic and financial position.

Table 12.1 Economic and financial performance of three raspberry processing and marketing EACs

| Item | Golden Berries 1998 | Romefrut 1998 | Guaicofrut 1998 |
|---|---|---|---|
| Total revenue ($) | 1,589,916 | 1,161,844 | 609,654 |
| Total expenses ($) | 1,589541 | 1,238,892 | 586,529 |
| Net result ($) | - 176 | -77,048 | 23,125 |
| Total assets ($) | 552,300 | 930,321 | 610,555 |
| Current assets ($) | 543,266 | 296,546 | 336,542 |
| Noncurrent assets ($) | 9,034 | 633,775 | 274,013 |
| Total liabilities ($) | 516,040 | 823,957 | 585,953 |
| Current liabilities ($) | 489,748 | 145,791 | 130,349 |
| Noncurrent liabilities ($) | 26,293 | 678,167 | 455,603 |
| Net assets ($) | 36,260 | 106,364 | 24,603 |
| Grants from government ($) | 293,846 | 31,534 | 31,534 |
| Net result/total revenue | -0.001 | - 0.07 | 0.04 |
| Total liabilities/total assets | 0.94 | 0.89 | 0.96 |
| Operational capital (current assets – current liabilities) ($) | 53,518 | 150,756 | 206,193 |
| Liquidity (current assets/current liabilities) | 1.11 | 2.03 | 2.58 |
| Dependency (grants/total revenue) | 0.19 | 0.03 | 0.05 |

In the case of Romefrut, 1998 was the year when it incubated the financial crisis that exploded a few months later, in April-May 1999. We can see that the EAC was losing a substantial amount of money, at a rate that was rapidly depleting its working capital. The EAC reached this point because of its

policy of very rapidly expanding its processing facilities, while at the same time working with volumes of raspberries that were 50% below its full processing capacity. This policy was, in turn, the result of very flawed management decisions, taken by a board and management controlled by small farmers who simply lacked the expertise to plan and implement a more sensible development strategy.

Guaicofrut is the only one of the three EACs that had positive results in 1998, although it was facing a very high level of indebtedness. However, most of the debt was long-term and the organization was able to meet its financial obligations on time and in full. Again, this EAC's fragile position was partly due to its low levels of operations relative to its processing capacity, as well as to the maintenance of a number of expensive technical assistance and credit services that put a heavy strain on its finances. In contrast with the other two EACs, Guaicofrut's board and management were always more conservative when it came to deciding on new investments and new lines of work. In particular, its tradition of setting up a raspberry pricing policy that gave priority to meeting its own obligations, meant that value-adding was the only way it could balance its own economic and financial obligations with the need to pay competitive market prices for its members' raspberries.

One common negative element is the high debts of these three organizations, ranging between $ 500,000 and $ 825,000. Golden Berries' situation is particularly vulnerable as almost all of its liabilities are short-term, while Romefrut and Guaicofrut have to deal with mostly long-term loans taken to build and equip their processing plants.

Romefrut and Guaicofrut have low dependency on government grants, while Golden Berries essentially was still alive thanks to the very high rate of support from INDAP, allowing it to meet a fifth of its total expenses.

### 12.3.2 Impact on members' farms and households

*Household and farm income*

Table 12.2 shows that there are no significant differences between the income and income composition of the members and non-members of Romefrut and Guaicofrut.

In the case of Golden Berries, however, the differences are important, as members have significantly higher total household and farm income than non-members. The Golden Berries data in Table 12.2, combined with those in Table 12.3, show how an EAC can improve its members' well-being and the profitability of their farms, and at the same time go bankrupt in part because of the unreasonable or unsustainable magnitude of that impact.

Table 12.3 shows that in all cases EAC members have a much greater area under raspberries than non-members. From my interviews and meetings, I think there are two reasons for this. Firstly, members have privileged access to credit; necessary for expansion in such an expensive crop. Secondly, as members told me time and again, they feel that being part of the EAC lowers the risks involved in marketing this highly perishable crop, and thus they can risk producing a higher volume. In other words, EAC participation creates both an incentive to grow more raspberries, and delivers the resources required to respond to that incentive. In addition, EAC members repeatedly told me how much they valued the fact that with a larger area under raspberries, they could provide more on-farm work for family members. This is confirmed by the data in Table 12.2, which show that between one-fifth and one-third of the direct costs of raspberry production are represented by family labor and should thus be added to the annual household income.

Table 12.2 Average income and income composition, Golden Berries, Guaicofrut and Romefrut (1999-2000 agricultural season, $)

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| Net hh income | 13,230 | 8,709 | 11,178 | 12,552 | 12,035 | 12,546 |
| Earned net hh income | 10,578 | 4,651 | 9,632 | 11,917 | 11,338 | 11,911 |
| Unearned net hh income | 2,652 | 4,059 | 1,547 | 635 | 697 | 635 |
| Non agricultural net income | 681 | 1,551 | 1,932 | 4,759 | 2,690 | 4,759 |
| Farm net income | 9,898 | 3,100 | 7,700 | 7,158 | 8,873 | 7,152 |

Table 12.3 Average economic results of raspberry production, Golden Berries, Romefrut and Guaicofrut ( 1999-2000 agricultural season)

| Variable | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| Gross income ($) | 4,697 | 1,001 | 14,402 | 7,390 | 10,993 | 7,385 |
| Direct costs ($) | 3.945 | 770 | 9,080 | 3,926 | 5,011 | 3,935 |
| Cost of family labor ($) | 1,366 | 392 | 1,655 | 738 | 931 | 740 |
| Gross margin ($) | 751 | 231 | 5,322 | 3,464 | 5,982 | 3,450 |
| Gross margin per hectare ($/ha) | 951 | 1,050 | 2,801 | 3,981 | 4,097 | 3,966 |
| | | | | | | |
| Total production (kg) | 4,987 | 1,230 | 13,868 | 7,794 | 11,173 | 7,789 |
| Percentage fresh quality | 5.1 | 10 | 6.2 | 3.2 | 3.3 | 3.2 |
| Percentage IQF quality | 0 | 0 | 79.7 | 77.1 | 70.4 | 77.1 |
| Percentage block | 5 | 2 | 12.4 | 14.7 | 24.7 | 14.7 |
| Percentage pulp | 3.2 | 9.9 | 0.1 | 0 | 1.2 | 0 |
| Percentage ungraded harvest | 88.1 | 79 | 1.2 | 5 | 0.5 | 5 |
| | | | | | | |
| Yield total (kg/ha) | 6,313 | 5,595 | 7,299 | 8,959 | 7,653 | 8,953 |
| Average price ($/kg) | 0.94 | 0.81 | 1.04 | 0.95 | 0.98 | 0.95 |
| Crop area (ha) | 0.79 | 0.22 | 1.90 | 0.87 | 1.46 | 0.87 |
| Production sold through EAC (%) | 97 | 0 | 71 | 0 | 82 | 0 |

Apparently there is a cost to be paid for this expansion, as members tend to have significantly lower yields than non-members. As anyone familiar with raspberries knows, managing 1.5 or 2 ha well is a difficult undertaking, especially if one considers that these farmers have only been involved with this crop for around five or six years.

However, in terms of quality - an extremely important variable in this crop - there are no large differences between members and non-members. Both the members and non-members in the Golden Berries area sell most of their crop *"all barrer"*, that is, as an ungraded lot. This is because they lack the processing and value-adding facilities that would allow them to meet all the quality grades recognized by the industry. As a result the prices received by the Golden Berries members are between 5% and 19% lower than those obtained by the members of the other two EACs.

An extremely interesting finding is revealed by analyzing the price differentials between members and non-members across the three EACs: they are 16%, 10% and 4% for Golden Berries, Romefrut and Guaicofrut, respectively.

For Golden Berries, there is little doubt that this huge bonus over the market price is mainly responsible for the EAC's bankruptcy, as no business in a market as competitive as raspberries, can afford to pay prices that are so much higher than the market price. This is especially true when Golden Berries is not adding much value through processing or directly exporting its raspberries. The same can be said, more or less, for Romefrut, although with an important difference of magnitude; the external audits of this EAC make it clear that the firm was paying prices that it could not sustain financially.

Only in the case of Guaicofrut do the price differentials begin to make sense, as this EAC was not only processing all of its fruit, but was also exporting most of its produce directly, and was thus more capable of capturing a higher share of the final consumer price and transferring it to the members.

### *Access to technical assistance and credit*

All of the farmers (members and non-members) sampled as part of these three case studies have access to technical assistance services. In fact, most of them receive this type of support from more than one source, and the only difference is that EAC members get advice from more sources than non-members (Table 12.4). One important difference is that members tend to pay for some of the technical advice they receive, while most of the non-members only get free advice.

Table 12.4 Access to technical assistance services, Golden Berries, Romefrut and Guaicofrut

| **INDICATORS** | **GOLDEN BERRIES** | | **ROMEFRUT** | | **GUAICOFRUT** | |
|---|---|---|---|---|---|---|
| | **Parts.** | **Non-parts.** | **Parts.** | **Non-parts.** | **Parts.** | **Non-parts.** |
| | **Yes %** | **Yes %** | **Yes %** | **Yes %** | **Yes %** | **Yes %** |
| Tech. assistance from EAC | 96.7 | 0 | 100 | 0 | 100 | 0 |
| Tech. assistance from government | 16.7 | 0 | 80 | 100 | 100 | 100 |
| Tech. assistance from university | 0 | 0 | 33.3 | 0 | 0 | 0 |
| Tech. assistance from NGO | 3.3 | 0 | 0 | 0 | 0 | 0 |
| Tech. assistance from private firm | 56.7 | 53.3 | 50 | 100 | 100 | 100 |
| Tech. assistance from other org. | 3.3 | 0 | 33.3 | 0 | 0 | 0 |
| Tech. assistance from private advisor | 6.7 | 0 | 0 | 0 | 0 | 0 |

One very important difference between members and non-members in the three case studies is that the former have more access to short and long-term loans, from INDAP and other commercial sources, and the amounts they receive are also significantly higher. Only a small minority of the non-members has access to short-term loans, and none of the non-members included in my samples received long-term financing; this is obviously a very serious constraint to participation in a perennial and expensive crop like raspberries (Table 12.5).

Table 12.5. Access to credit, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | | | ROMEFRUT | | | | GUAICOFRUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parts. | | Non-parts. | | Parts. | | Non-parts. | | Parts. | | Non-parts. | |
| | Nº | $ | Nº | $ | Nº | $ | Nº | $ | Nº | $ | Nº | $ |
| Total loans | 16 | 1,384 | 4 | 972 | 11 | 4,908 | 2 | 652 | 7 | 2,970 | 2 | 652 |
| Short term loans | 11 | 1,069 | 4 | 972 | 4 | 1,493 | 2 | 652 | 5 | 2,813 | 2 | 652 |
| Long term loans | 9 | 1,154 | 0 | 0 | 9 | 4,868 | 0 | 0 | 2 | 3,364 | 0 | 0 |
| INDAP loans | 15 | 939 | 4 | 972 | 10 | 3,456 | 1 | 1,051 | 3 | 1,787 | 1 | 1,051 |
| State bank loans | 1 | 631 | 0 | 0 | 1 | 1,682 | 0 | 0 | 0 | 0 | 0 | 0 |
| Private bank loans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4,205 | 0 | 0 |
| EAC loans | 0 | 0 | 0 | 0 | 1 | 2,102 | 0 | 0 | 2 | 631 | 0 | 0 |
| Agroindustry loans | 1 | 694 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9,460 | 0 | 0 |
| Commercial loans | 0 | 0 | 0 | 0 | 1 | 505 | 1 | 252 | 1 | 505 | 1 | 252 |
| Other sources of loans | 1 | 1,051 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Technology adoption*

The differences between members and non-members in the adoption rates of a set of different technologies are not as large in these three cases as in those analyzed in the previous case studies chapters. This is true both for production, marketing and farm management technologies and methods. We have seen that almost all these farmers have access to technical assistance services, and all of them have been involved in commercial agriculture for at least 20 or 30 years. The fact that they have chosen to diversify into a new and risky crop such as raspberries, is in itself a sign of the disposition of these farmers to innovate (Tables 12.6 and 12.7).

## 12.4 Explaining the performance differences

In this section I explore the relationship between the performances of these three EACs and of the members versus the non-members, and the different characteristics of the individuals, households, and organizations.

### 12.4.1 Farmers' assets

There are no large differences between these groups of farmers in terms of their human capital, access to land, or the value of other physical assets, although the members of Guaicofrut and Romefrut tend to be slightly better off than their control groups.

*Household characteristics*

There are no significant differences between members and non-members, or between the three case studies, in terms of the characteristics of the individuals and their households: age, education, household size and so on (Table 12.8).

One interesting observation is that these households tend to be larger than those of the potato and milk producers in the south. Because of their location in a dynamic region that offers more off-farm employment opportunities, and also because of the higher labor intensity and profitability of their own

Table 12.6 Technological changes implemented in past five years, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| | Yes % | Yes % | Yes % | Yes % | Yes % | Yes % |
| Crop diversification | 73.3 | 33.3 | 83.3 | 62.5 | 58.3 | 62.5 |
| Contract agriculture | 36.7 | 6.7 | 53.8 | 25 | 50 | 25 |
| Marketing of inputs of products | 70 | 13.3 | 66.7 | 37.5 | 66.7 | 37.5 |
| Irrigation and drainage | 50 | 40 | 58.3 | 62.5 | 33.3 | 62.5 |
| Machinery and equipment | 43.3 | 13.3 | 66.7 | 50 | 58.3 | 50 |
| Buildings and infrastructure | 30 | 33.3 | 75 | 37.5 | 33.3 | 37.5 |
| Crop varieties and seed quality | 83.3 | 33.3 | 81.8 | 50 | 45.5 | 50 |
| Use of fertilizers | 53.3 | 35.7 | 66.7 | 50 | 66.7 | 50 |
| Weed control | 70 | 53.3 | 66.7 | 75 | 75 | 75 |
| Insect and disease control | 70 | 60 | 66.7 | 85.7 | 63.6 | 85.7 |
| Cattle breeds | 29.2 | 15.4 | 44.4 | 60 | 28.6 | 60 |
| Reproduction of cattle | 25 | 7.7 | 42.9 | 0 | 28.6 | 0 |
| Sanitary management of cattle | 45.8 | 30.8 | 57.1 | 40 | 42.9 | 40 |

Table 12.7 Farm management practices, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| | Yes % | Yes % | Yes % | Yes % | Yes % | Yes % |
| Legally registered farmers for fiscal purposes | 96.7 | 73.3 | 75 | 62.5 | 90.9 | 62.5 |
| VAT accounting and filing | 100 | 73.3 | 100 | 83.3 | 100 | 83.3 |
| Costs and income records | 30 | 6.7 | 41.7 | 37.5 | 58.3 | 37.5 |
| Holds a bank account | 30 | 6.7 | 8.3 | 12.5 | 8.3 | 12.5 |
| Legalized land titles | 63.3 | 40 | 100 | 100 | 100 | 100 |
| Legalized water titles | 80 | 96.7 | 87.5 | 100 | 88.9 | 100 |

farming systems, these households apparently are more capable of retaining their younger members, as seen, for example, in the higher number of household members who are between 19 and 30 years of age.

Table 12.8 Household composition, Golden Berries, Guaicofrut and Romefrut

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| Members of household | 5.6 | 5.1 | 5.8 | 6 | 5.2 | 6 |
| Female members | 2.3 | 2.4 | 2.3 | 3 | 2.8 | 3 |
| Male members | 3.3 | 2.7 | 3.6 | 3 | 2.3 | 3 |
| Members 0-12 yrs. | 1.1 | 0.9 | 1.2 | 1 | 0.9 | 1 |
| Members 13-18 yrs. | 0.3 | 0.4 | 0.8 | 0.5 | 0.6 | 0.5 |
| Members 19-30 yrs. | 1.7 | 1.3 | 1.3 | 2.5 | 1.3 | 2.5 |
| Members 31-45 yrs. | 1 | 1.1 | 0.7 | 0.6 | 0.8 | 0.6 |
| Members 46-65 yrs. | 1.2 | 1.1 | 1.3 | 1.1 | 1.2 | 1.1 |
| Members 66+ yrs. | 0.3 | 0.3 | 0.5 | 0.3 | 0.3 | 0.3 |
| Schooling members 7 yrs or + | 6.4 | 5.6 | 6.3 | 7.7 | 6.7 | 7.7 |
| Schooling members 15 yrs or + | 6.5 | 5.7 | 6.8 | 7.7 | 7 | 7.7 |
| Schooling members 19-30 yrs or + | 8.7 | 8.5 | 6.4 | 10.3 | 7 | 10.3 |
| Schooling members 31-45 yrs or + | 6.1 | 6.1 | 3.7 | 1.1 | 3.6 | 1.1 |
| Schooling members 46-65 yrs or + | 5.4 | 3.9 | 4 | 1.9 | 2.7 | 1.2 |
| Schooling members 66 yrs or + | 2.4 | 1 | 0.4 | 0 | 0.3 | 0 |
| Schooling of head of hh | 4.3 | 3.3 | 5.8 | 4.6 | 3.8 | 4.6 |
| Schooling of spouse | 4.8 | 3.7 | 4.8 | 1.5 | 4.1 | 1.5 |
| Schooling of sons/daughters | 6.9 | 6.1 | 7 | 7.5 | 8 | 7.5 |
| Schooling of other members of hh | 1.5 | 2 | 1.3 | 3.1 | 1.2 | 3.1 |
| Schooling female members of hh | 6.4 | 5.1 | 5.5 | 5 | 2.7 | 3.5 |
| Schooling male members of hh | 5.7 | 4.9 | 6.3 | 7.4 | 3.3 | 4.2 |
| Age of head of hh | 56.3 | 56.7 | 53.8 | 53.8 | 51.5 | 56.7 |
| Age of spouse | 42.8 | 44 | 48 | 44.8 | 40 | 42.3 |
| Age of sons/daughters | 27.9 | 25.1 | 16.5 | 18.4 | 19.8 | 20.1 |
| Dependency ratio | 0.4 | 0.5 | 0.6 | 0.4 | 0.6 | 0.6 |

### *Physical and financial assets*

The members of Golden Berries and Guaicofrut have larger farms than non-members, although the differences are not very important. As is common in this region, all the farms are almost fully irrigated (Table 12.9).

The total value of the capital assets of members of Romefrut and Guaicofrut tends to be slightly higher than non-members; these differences reflect the greater value of the land, buildings and infrastructure, and machinery and equipment. However, the differences are not that large (Table 12.10).

Table 12.9 Land assets, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| Land owned by hh (ha) | 17.34 | 12.77 | 7.54 | 9.22 | 13.88 | 9.22 |
| Land taken by hh, shareholding (ha) | 0 | 0 | 0.65 | 0.06 | 0.08 | 0.06 |
| Land taken by hh, rental (ha) | 1.64 | 0 | 0.33 | 0.19 | 0.45 | 0.18 |
| Land taken by hh, other contracts | 0.19 | 0 | 0.89 | 1.93 | 0.14 | 1.93 |
| Land let by hh, shareholding (ha) | 0.38 | 10 | 0.12 | 0.37 | 0.45 | 0.37 |
| Land let by hh, rental (ha) | 0.28 | 0.73 | 0 | 0.12 | 0.02 | 0.12 |
| Land let by hh, other contracts (ha) | 0.28 | 0.13 | 0.06 | 0.04 | 1.41 | 0.06 |
| Land under management by hh (ha) | 18.32 | 11.04 | 9.25 | 10.85 | 12.67 | 10.85 |
| Irrigated land under management by hh (ha) | 3.34 | 1.46 | 4.99 | 3.75 | 6.05 | 3.75 |
| Irrigated land owned by hh (ha) | 9.55 | 10.53 | 7.33 | 8.66 | 10.87 | 8.66 |

Table 12.10 Fixed and quasi-fixed assets, Golden Berries, Romefrut, Guaicofrut ($)

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| Value of buildings and infrastructure | 15,018 | 12,071 | 19,929 | 15,401 | 13,784 | 15,626 |
| Value of machinery and equipment | 14,188 | 4,785 | 12,578 | 4,572 | 9,464 | 4,572 |
| Value of land owned by hh | 91,709 | 84,082 | 85,028 | 74,268 | 111,016 | 73,861 |
| Value of livestock | 3,771 | 910 | 1,980 | 1,882 | 2,691 | 1,856 |
| Total value of physical assets | 112,727 | 115,132 | 118,138 | 93,967 | 133,560 | 93,731 |

Almost all the households are located within one or two kilometers of a main road, which in the three cases are paved highways to the towns of Parral (Golden Berries) or Romeral (the other two EACs), or to the major cities of Talca (Golden Berries) or Curicó. These farmers definitely do not have transportation or communication problems.

### 12.4.2 Social capital

As in the previous case studies, I will discuss the role of social capital in terms of participation in rural organizations, social norms that foster cooperation, systems of rules within the EAC, and participation of the EAC in larger networks.

*Participation in community and economic organizations*

Overall, the members of these EACs participate more than non-members in other economic and community organizations. In addition, they tend to hold leadership positions in these other organizations to a greater extent than the non-members (Table 12.11).

Table 12.11 Participation in development projects and organizations, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | ROMEFRUT | | GUAICOFRUT | |
|---|---|---|---|---|---|---|
| | Parts. | Non-parts. | Parts. | Non-parts. | Parts. | Non-parts. |
| | Yes % | Yes % | Yes % | Yes % | Yes % | Yes % |
| **Organizations or projects with economic objectives** | | | | | | |
| Irrigation or drainage | 36.7 | 33.3 | 8.3 | 0 | 8.3 | 0 |
| Marketing products or purchasing inputs | 63.3 | 6.7 | 33.3 | 12.5 | 50 | 12.5 |
| Soil conservation and pasture improvement | 10 | 6.7 | 33.3 | 12.5 | 16.7 | 12.5 |
| Storage of products | 20 | 0 | 0 | 0 | 25 | 0 |
| Youth | 10 | 13.3 | 0 | 0 | 16.7 | 0 |
| Women's | 6.7 | 20 | 0 | 0 | 0 | 0 |
| Trade Association | 17.2 | 0 | 8.3 | 12.5 | 8.3 | 12.5 |
| Cooperative | 43.3 | 20 | 0 | 0 | 0 | 0 |
| Held leadership position in any of the above | 43.3 | 13.3 | 50 | 12.5 | 16.7 | 12.5 |
| **Organizations or projects with social development objectives** | | | | | | |
| Neighborhood committee | 6.7 | 20 | 66.7 | 37.5 | 50 | 37.5 |
| Sports, culture and recreation | 43.3 | 33.3 | 41.7 | 25 | 43.3 | 25 |
| Housing or local improvement | 13.3 | 6.7 | 50 | 25 | 58.3 | 25 |

In the case of Golden Berries, there are very striking differences of opinion between the members and non-members about the perceived costs and benefits of participating in economic organizations. The non-members almost unanimously agree that an economic organization cannot have any sort of economic or social benefit. A large majority of the members, on the other hand, agree that a number of benefits are likely, although more in the social (e.g., improved relations with neighbors, better quality of life for women), rather than the economic, sphere (e.g., improved marketing and better prices). The members of Golden Berries identify the same costs already highlighted in most of the other case studies: higher debts, having to pay membership fees, and the EAC taking a share of the price paid by the buyers of their product (Table 12.12).

In the cases of Romefrut and Guaicofrut, most members and non-members have a very positive opinion of the benefits, both social and economic, that can be derived from participating in an economic organization. Their opinion is particularly strong - compared to many of the other case studies, including Golden Berries - when it comes to the benefits of participation on prices, marketing, lower production costs, crop diversification, etc. The members and non-members of these two EACs identify the same costs already noted by the members of many of the other case studies: higher debts, higher risks, and membership fees (Table 12.12).

Table 12.12 Perception of costs and benefits of participating in EAC, Golden Berries, Romefrut and Guaicofrut

| INDICATORS | GOLDEN BERRIES | | | | ROMEFRUT | | | | GUAICOFRUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parts. | | Non-parts. | | Parts. | | Non-parts. | | Parts. | | Non-parts. | |
| | Not True % | True % | Not True % | True % | Not True % | True % | Not True % | True % | Not True % | True % | Not True % | True % |
| **Benefits** | | | | | | | | | | | | |
| Improved household income | 43.3 | 43.3 | 60 | 26.7 | 20 | 60 | 20 | 60 | 10 | 80 | 10 | 80 |
| Improved yield and production | 16.7 | 56.7 | 73.3 | 6.7 | 20 | 60 | 0 | 0 | 0 | 90 | 0 | 0 |
| New crops and livestock | 33.3 | 60 | 93.3 | 6.7 | 20 | 80 | 0 | 100 | 50 | 50 | 0 | 100 |
| Improved marketing and products | 33.3 | 46.7 | 93.3 | 0 | 0 | 80 | 0 | 100 | 0 | 100 | 0 | 100 |
| Improved prices of products | 40 | 43.3 | 80 | 6.7 | 0 | 70 | 0 | 100 | 0 | 50 | 0 | 100 |
| Lowered production costs | 43.3 | 36.7 | 86.7 | 0 | 50 | 10 | 100 | 0 | 60 | 40 | 100 | 0 |
| Farm improvements | 46.7 | 53.3 | 73.3 | 20 | 50 | 40 | 0 | 100 | 44.4 | 55.6 | 0 | 100 |
| Improved quality of life for family | 23.3 | 60 | 80 | 13.3 | 10 | 90 | 0 | 100 | 0 | 90 | 0 | 100 |
| Improved quality of life for women | 26.7 | 66.7 | 66.7 | 20 | 10 | 90 | 0 | 100 | 0 | 100 | 0 | 100 |
| Improved quality of life for youth | 43.3 | 46.7 | 80 | 13.3 | 20 | 70 | 0 | 100 | 0 | 77.8 | 0 | 100 |
| Optimistic view of the future | 33.3 | 60. | 60 | 20 | 0 | 60 | 0 | 100 | 10 | 60 | 0 | 100 |
| Improved relations with govt. agencies | 40 | 43.3 | 93.3 | 6.7 | 0 | 50 | 0 | 0 | 11.1 | 55.6 | 0 | 0 |
| Improved relations with municipal govt. | 43.3 | 36.7 | 86.7 | 6.7 | 40 | 30 | 100 | 0 | 20 | 50 | 100 | 0 |
| Improved relations with neighbors | 10 | 73.3 | 53.3 | 26.7 | 10 | 70 | 0 | 100 | 0 | 100 | 0 | 100 |
| Doing better as small farmers | 20 | 53.3 | 73.3 | 6.7 | 0 | 80 | 0 | 100 | 0 | 88.9 | 0 | 100 |
| **Costs** | | | | | | | | | | | | |
| Incurring debts | 26.7 | 70 | 80 | 20 | 0 | 100 | 0 | 0 | 20 | 70 | 0 | 0 |
| Membership fees | 13.3 | 86.7 | 86.7 | 13.3 | 20 | 80 | 100 | 0 | 20 | 70 | 100 | 0 |
| Greater risks in agriculture | 23.3 | 53.3 | 53.3 | 20 | 10 | 60 | 0 | 100 | 20 | 40 | 0 | 100 |
| Loss of time in meetings | 33.3 | 56.7 | 73.3 | 26.7 | 0 | 80 | 0 | 100 | 40 | 50 | 0 | 100 |
| Share of product prices taken by org. | 26.7 | 66.7 | 73.3 | 13.3 | 60 | 40 | 0 | 100 | 40 | 50 | 0 | 100 |
| Worsened relationships with neighbors | 76.7 | 10 | 100 | 0 | 60 | 10 | 0 | 100 | 80 | 10 | 0 | 100 |
| Some take advantage of others | 46.7 | 46.7 | 66.7 | 26.7 | 10 | 80 | 0 | 100 | 33.3 | 55.6 | 0 | 100 |
| Less trust in the future | 40 | 43.3 | 73.3 | 13.3 | 60 | 20 | 0 | 100 | 55.6 | 22.2 | 0 | 100 |

The turbulence that Romefrut went through one year before this survey is revealed by both the members and non-members agreeing, almost unanimously, that two of the costs of participation are having to spend time in a lot of meetings (Romefrut was having two or three meetings per week for three or four months during the crisis), and that some of the members take advantage of others (presumably related to the fact that the external audit revealed that around 15 or so of the members,

those with closest ties to the original Chairman of the board and the first manager, had accumulated unpaid loans from the EAC for almost $ 105,000) (Table 12.12).

In summary, there are important differences of opinion between the three case studies about the costs and benefits of participation. The members of Guaicofrut and Romefrut are very positive about the economic and social benefits of participation, while Golden Berries' members underline only the social aspects. Romefrut members identify several unusual costs related to the crisis their EAC went through, while the members of Guaicofrut and Golden Berries identify those costs already seen in most of the other case studies: debts, risks and fees.

*Norms that foster cooperation*

There are no large differences between members and non-members, or between the case studies, in terms of how the farmers view issues such as trust and reciprocity (Table 12.13).

In the three cases, large majorities of both members and non-members tend to think that nowadays it is easier to work collectively than 10 years ago, that economic and social organizations are always or almost always beneficial, and that their families have benefited from participating in economic and social organizations.

However, large majorities in all groups also think that most people only care for themselves and that they will try to take advantage of the rest. The only area in which there is some difference between the members and non-members in the Guaicofrut and Golden Berries case studies, is that a majority of the non-members plainly say that you cannot trust most people.

In my long talks with leaders and grassroots members, as well as with many unorganized farmers in these three areas, I always got the impression that these farmers approached the EAC from a very utilitarian point of view. Time and again, many of them would talk about the need to be vigilant about the behavior of others, including the leadership, the other members and the management staff. Unlike some of the potato and milk case studies, I never had the sense that I was in the presence of a trustful community, and, on the contrary, it appeared that the members of these three EACs worry that it is likely that others will try to take advantage of them if they can.

In short, there is no evidence whatsoever that the members of these organizations have more or less trust in their neighbors and their partners in the EAC than the non-members.

*Networks*

There are very significant differences in the networks which surround these three EACs. I will argue that Golden Berries is an example of an EAC with very weak, often non-existent, links with many of the agents crucial to the development of a robust economic organization. Guaicofrut represents the other pole, having invested in building strong and effective links with other agents. Romefrut is in some ways similar to Golden Berries, and in others it is closer to Guaicofrut, although one can see a difference before and after its financial crisis in 1998-99.

First of all, Guaicofrut and Romefrut are embedded in a specific rural community, so that the members interact with each other not only in the EAC but in a large number of social and community organizations, and in many cases belong to the same extended families. This facilitates a more intimate knowledge of the behavior of each individual in areas that have a direct effect on the EAC, such as their complying with the rule of not selling a large proportion of their harvest through middlemen, or their capacity as leaders. Similarly, these two EACs dedicate important resources to local social activities. Finally, the political leverage and the human resources of these EACs are used to negotiate with local authorities for community benefits, such as improving the local roads, schools or health centers.

**This embeddedness of an EAC in a local community can bring benefits to both, but it can also have negative effects. For example, the internal conflicts that Romefrut has gone through have affected**

Table 12.13 Trust, cooperation, reciprocity and view of the future, Golden Berries, Romefrut and Guaicofrut

| QUESTION | GOLDEN BERRIES | | | | ROMEFRUT | | | | GUAICOFRUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Participants | | Non-participants | | Participants | | Non-participants | | Participants | | Non-participants | |
| Ease of organizing with neighbors, compared to 10 years ago | More Difficult % | Easier % | More Difficult % | Easier % | More Difficult % | Easier % | More Difficult % | Easier % | More Difficult % | Easier % | More Difficult % | Easier % |
| | 23.3 | 50 | 20 | 60 | 8.3 | 83.3 | 0 | 62.5 | 8.3 | 91.7 | 0 | 62.5 |
| Household´s degree of participation in organizations compared to neighbors | Less % | More % | Less % | More % | Less % | More % | Less % | More % | Less % | More % | Less % | More % |
| | 16.7 | 30 | 46.7 | 20 | 41.7 | 25 | 37.5 | 0 | 8.3 | 33.3 | 37.5 | 0 |
| Community and farmers´ organizations are useful | Never or Almost never % | Always or Almost Always % | Never or Almost never % | Always or Almost Always % | Never or Almost never % | Always or Almost Always % | Never or Almost never % | Always or Almost Always % | Never or Almost never % | Always or Almost Always % | Never or Almost never % | Always or Almost Always % |
| | 13.3 | 76.7 | 13.3 | 80 | 0 | 100 | 25 | 75 | 0 | 91.7 | 25 | 75 |
| For you and your family, participation in organizations is: | Waste of time % | Beneficial % | Waste of time % | Beneficial % | Waste of time % | Beneficial % | Waste of time % | Beneficial % | Waste of time % | Beneficial % | Waste of time % | Beneficial % |
| | 6.7 | 70 | 13.3 | 53.3 | 0 | 75 | 25 | 50 | 0 | 91.7 | 25 | 50 |
| Farmers´ and community organizations benefit… | Only a few or none % | The majority % | Only a few or none % | The majority % | Only a few or none % | The majority % | Only a few or none % | The majority % | Only a few or none % | The majority % | Only a few or none % | The majority % |
| | 40 | 56.7 | 33.3 | 40 | 53.8 | 41.7 | 50 | 50 | 50 | 50 | 50 | 50 |
| Can you trust most people? | No % | Yes % | No % | Yes % | No % | Yes % | No % | Yes % | No % | Yes % | No % | Yes % |
| | 50 | 40 | 73.3 | 13.3 | 58.3 | 33.3 | 62.5 | 12.5 | 41.7 | 50 | 62.5 | 12.5 |
| Most people… | Only care for themselves % | Try to help others % | Only care for themselves % | Try to help others % | Only care for themselves % | Try to help others % | Only care for themselves % | Try to help others % | Only care for themselves % | Try to help others % | Only care for themselves % | Try to help others % |
| | 76.7 | 13.3 | 86.7 | 13.3 | 75 | 25 | 75 | 25 | 91.7 | 8.3 | 75 | 12.5 |
| Most people… | Take advantage of others % | Try to be fair % | Take advantage of others % | Try to be fair % | Take advantage of others % | Try to be fair % | Take advantage of others % | Try to be fair % | Take advantage of others % | Try to be fair % | Take advantage of others % | Try to be fair % |
| | 60 | 26.7 | 53.3 | 26.7 | 66.7 | 16.7 | 62.5 | 25 | 66.7 | 25 | 62.5 | 25 |
| Has your situation as small farmers compared to 10 years ago… | Worsened % | Improved % | Worsened % | Improved % | Worsened % | Improved % | Worsened % | Improved % | Worsened % | Improved % | Worsened % | Improved % |
| | 23.3 | 60 | 26.6 | 46.7 | 0 | 100 | 0 | 87.5 | 8.3 | 91.7 | 0 | 87.5 |
| In the next 10 years, will your situation as small farmers... | Worsen % | Improve % | Worsen % | Improve % | Worsen % | Improve % | Worsen % | Improve % | Worsen % | Improve % | Worsen % | Improve % |
| | 20 | 43.3 | 13 | 46.7 | 0 | 66.6 | 0 | 75 | 0 | 74 | 0 | 75 |

local community cohesion; many farmers explained that since Romefrut's financial crisis there are now two camps within the community and the EAC, one of them aligned with the original leadership displaced after the crisis, and the other with the new leaders.

Golden Berries is a different story. Here the 10 warehouses that make up the EAC are spread over a relatively large area. Moreover, since Golden Berries is a second-tier organization, the grassroots members of the 10 warehouses rarely interact directly, since even in the General Shareholder meetings they are represented by only one or two members. Each of the 10 first-tier organizations which make up Golden Berries, however, is part of a single rural community, and at that level there are similar social interactions as in Guaicofrut and Romefrut. However, there are only very weak links between Golden Berries itself and the rural communities from which the individual grassroots members come.

Perhaps this is why the leadership and management of Golden Berries was left to the professional staff. The top managers were widely admired by both the farmers and INDAP for being the type of modern, well-trained managers that supposedly could lead an EAC trying to work in a complex market environment. However, the distance between the members and management was so large that there was no way in which the latter could be monitored, controlled or directed. The farmers of Golden Berries - and INDAP - paid dearly for this decision to rely so much on their well-trained and ambitious managers!

Golden Berries was not only a weak social organization, but it also functioned in a way that distanced its grassroots members from market agents and market signals. It used INDAP's generous subsidies and grants to try to alter the market trends and signals, for example, by strongly subsidizing the net prices received by the farmers. The EAC could sustain this strategy for about three or four years, and there is no doubt that in the short-run the grassroots members profited tremendously. But the distortion was so large that Golden Berries was unable to survive the crisis.

In my talks during and after the crisis with many grassroots members and leaders, I often heard arguments that revealed that, ultimately, they did not feel that Golden Berries was indispensable to them as raspberry producers. Since they still had the 10 local cold-storage warehouses, each group felt that they could still organize and manage the marketing of their raspberries. Moreover, leaders and many of the members of the five or six warehouses that were showing good results, actually felt that they would gain by getting rid of the other local groups. Some even told me that they would actually profit from the fall of Golden Berries, as the members of the weaker warehouses in the long run would end up selling their raspberries to them.

In short, both from the point of view of the social interactions among the members and of the relationship with market agents, Golden Berries proved to be an artificial organization, making little sense either from an institutional, economic or financial point of view. The members of Guaicofrut have strongly supported a policy of increasing integration in the value-adding chain of the raspberry national and international markets. Guaicofrut's interaction with market agents and market trends has been based on trying to build and exploit a competitive advantage that can be sustained without external support. Whilst they have not fully managed to achieve this goal, and the EAC no doubt has been dependent on public programs for funding its projects, the basic logic of their decision-making is clearly in this direction. To this end, they have been willing to explicitly sacrifice short-term gains, as for example when setting their price policy prior to each harvest. They have put considerable energy into building close ties with specific market agents, as they understand that they cannot proceed with their strategy without these relationships, especially if they are going to consolidate their capacity to export directly, thus bypassing the large commercial firms that dominate this market.

Guaicofrut has also built close links with other EACs in order to reach the international markets. It is loosely associated with other economic organizations in Region VII that are also engaged in raspberry processing and export. It has been very careful in selecting its partners, choosing only those that it feels can fulfill their obligations in terms of top quality, volume and timeliness of delivery. For this reason, it has avoided working with Romefrut.

Guaicofrut has also established working relationships with a wide range of individuals and

organizations that can provide specialized technical expertise. In contrast with Romefrut, from the start it contracted an external firm to help it with their accounting systems, in order to have permanent access to detailed information about their administration and finances. It has taken care to set up a strong technical department to give on-farm advice and support to the members, as they understand that the results of their collective activity are largely determined by what happens before the raspberries arrive at the processing plant. Finally, it has contracted, on a long-term basis, the services of some of the top Chilean experts on the raspberry international market, since members know that exporting directly requires making use of highly specialized skills. As they say, they have always been willing to *"pay expensive advisors"* and they make no pretence of thinking that they can ride these rough waters alone, as Romefrut tried to do during its first years.

However, these advisors and experts clearly do not dominate Guaicofrut's decision-making process. They explain the standards that the EAC and the farmers have to meet, based on the requirements of the international markets. With that information, the members of the EAC can decide how fast they want to approach specific goals (e.g., exporting directly or indirectly through other firms; diversifying into new berry crops to counterbalance the declining prices of raspberries; starting to process vegetables to reach totally new markets and make better use of their installed processing capacity; or setting minimum acceptable shares of the harvest that each member must sell through the EAC). That is, the technical advisors are precisely that, technical advisors.

These interactions with markets, with external intermediate agents and specialists, and with rural communities, determine the nature of the relationship with INDAP and other public organizations. Simply put, the stronger the interaction with market and technical agents and with rural communities, the less dependent the EAC is on government support. Thus, Golden Berries was always almost totally dependent on INDAP's good will, Romefrut became increasingly dependent as their financial problems grew, and Guaicofrut has always managed to have the highest independence from INDAP.

This does not mean that Guaicofrut or any of the others could have managed to get anywhere, or even be formed, without decisive support from INDAP and public funding. Very simply, no private bank in Chile would ever have dreamed of lending a group of peasants half a million dollars to start a raspberry processing plant and export firm! The relevant question is not if these EACs can make it in the absence of any external support and subsidized public funding, but whether they can manage to achieve a degree of autonomy in their decision-making, given their financial dependency. Being part of a strong network with other market agents and intermediate organizations and specialists gives an EAC greater power to negotiate the terms of their relationship with the government agencies.

### *Rules*

In discussing these EACs' systems of rules, it is important to remember that raspberry production, processing and marketing is a rather new activity in Chile, and one in which these small farmers had not previously been involved. Together with cut flower production and marketing, raspberries exemplify the boldest attempts by small farmers in Chile to become involved in the new farming enterprises that have come about through the liberalization and globalization of Chilean agriculture. The small farmers' organizational traditions, including systems of rules for decision-making in economic collective action, were developed in the '60s and early '70s in a very different context. These three case studies illustrate the extent to which small farmers have been capable of adapting that institutional tradition to the challenges and demands imposed by global markets.

It can be argued that Golden Berries was incapable of adapting its systems of rules beyond the context of traditional, government-led agricultural development programs, while Guaicofrut has successfully created rules appropriate to the new context of international markets. Romefrut is somewhere in between, with a break before and after the crisis.

Simply put, Golden Berries' members wanted their EAC to operate in the same way as INDAP had: the design and implementation of the service was left largely in the hands of professional staff, and it was assumed that the cost was to be financed by the government. The managers of the EAC were the

key players, in the same way that the INDAP consultants had coordinated the Microregional Development Project, or, previously, the private consultants who had introduced them to raspberry production. In this arrangement, the role of the farmers' leaders was essentially one of liaison between the grassroots and 'the authorities', even if they were now staff and specialists hired by the EAC. This arrangement was very convenient for the farmers, who were able to capture the full benefits of collective action (technical assistance, higher prices, greater security in marketing, and so on), without having to take responsibility for designing, implementing, monitoring, adjusting or paying for those services.

Guaicofrut is a very different story. From the start, the members and leaders understood that to penetrate and survive in the international raspberry market, they had to proceed gradually, build each successive step on firm foundations, interact with well qualified specialists who could provide the management and technical expertise they lacked, and be willing to sacrifice short-term gains in favor of securing their position in the market.

The best example of this attitude is the way they define their price policies before each harvest. They ensure they have secured the funds necessary to fulfill their commercial obligations and to launch new investment projects, always with the aim of adding value to their product before selling it. The priority given to seeking knowledge from specialists on production business management, agroindustrial processing, and marketing, and the willingness to invest important sums of money to receive this support, also demonstrates Guaicofrut's philosophy of sacrificing short-term benefits in order to build the foundations of a stronger long-term position in the raspberry market.

Most of Guaicofrut's members have always actively participated in the key decisions that affect their organization. Every person I interviewed agreed that debates have always been lively and that respectful criticism is allowed and even encouraged. While there are important leaders who play a distinct role, they have never had an overwhelming position in the organization. The external specialists play a technical role in outlining options, helping the members understand the markets in which they operate and identifying threats, opportunities and goals, but there is no doubt that decision-making remains in the hands of the farmers.

Why is it that two groups of relatively similar small farmers – those of Guaicofrut and Golden Berries – using the same set of policies, programs and instruments, arrived at such different organizational and institutional designs? I do not have a definitive answer to this question, but I believe that Guaicofrut's emergence from a serious crisis may have played a role. When, in 1997, they lost a large part of their production, they realized two things: first, how fragile their position was in the raspberry market; and, second, that once they had made a substantial investment in their raspberry orchards, they were involved in a high-stakes game in which the losses could be extremely high. Guaicofrut is the child of an event that threatened the best opportunity these farmers had of surviving as independent producers, once the macroeconomic and trade reforms ended their expectations of improving their life through traditional farming systems.

Golden Berries, on the other hand, developed along a very different pathway, led mainly by external agents. When the critical step was taken – changing from a development program into an economic organization – there was no break in the fundamental logic with which both the external agents and the farmers themselves had acted. It was a change of form, but not of substance. The old rules of the development program could not resist the test of the new circumstances that the farmers and the EAC were facing.

In the case of Romefrut we observe a change in the system of rules before and after their crisis of 1998-99. In the initial years, the rules of development programs dominated, although in this case the key role was played by a small core group of leaders, in contrast with Golden Berries where external agents were in charge. The rest of the members had great trust in this core group and in particular in a couple of its members, who had been the key players in getting the EAC started. Because they felt they were in good hands, the majority of the Romefrut members were happy not to worry about what was going on in the EAC. The leaders and the managers, who had been very effective in the past when dealing with relatively small projects, made a tremendous number of errors now that they had to

handle a much larger and complex project. They mistrusted external specialists and felt confident that they knew enough to guide the organization and its development. There was little debate among the members and few questions were asked, as the continuous growth of their processing plant, the good prices the members were receiving, and the generous credit program for agricultural inputs, were definitive proof that the leaders knew what they were doing. When INDAP pressed the EAC to hire an external firm to support management and administration, the members rallied in support of the leaders, and rejected this attempt as an unnecessary and unwelcome intrusion.

Finally, reality caught up with Romefrut. Yet, the EAC survived the crisis because of the strong bonds between the members. A new team of leaders took over, and the membership agreed to drink the bitter medicine of cutting their benefits, and even more telling, of donating a very large amount of raspberries to keep the EAC alive. This was possible in part because the farmers who make up Romefrut are not poor, and while these investments did hurt, they did not threaten their survival as independent small farmers. In addition, even the watered-down benefits provided to them by the EAC are important enough to justify the costs involved in rescuing their operation; what they value most, as many told me, is that having the EAC greatly reduces their risk as individual farmers working in a very competitive market.

However, having discussed this crisis at length with many of the members and leaders, I am convinced that Romefrut was able to sort out its problems largely because of the underlying social relationships that bind the members together. Their initial assessment of the crisis focused firstly on determining if there had been foul play by the leaders, or if they were due to 'technical' mistakes. When they were convinced that their leaders had not behaved inappropriately, their attitude immediately changed: this was a mistake, perhaps a large one, but only a mistake, not something that could split the group. It is difficult to convey the emphasis all the farmers I interviewed put on this point, stressing the great difference between 'technical' errors and simply unforgivable social behavior. One farmer's comment illustrates this point: *"when we learned that this was only a problem of money, right then we knew that we could deal with it. If the auditors had said something else, it would have been the end."* Also, by being part of a tight rural community, the members of Romefrut were also able to rapidly generate a new leadership team made up of individuals they knew and trusted to guide them through a difficult period. There is little doubt that although the crisis weakened Romefrut financially, it also strengthened the organization institutionally.

The system of rules designed by each of these EACs is summarized in Table 12.14, following Ostrom (1990; see Chapter 2, Section 2.5).

Golden Berries has almost none of the rules that Ostrom sees as important for robust organizations. There is a reason for this: for all practical purposes, the grassroots members did not see their organization as an EAC, they continued to relate to it in the same way they had approached the INDAP support programs.

In the case of Guaicofrut, all of the Ostrom rules are more or less in place. There are two rules that I would like to highlight, for they are important in giving an EAC a comparative advantage in the market place:

(a) The EAC explicitly differentiates between members and non-members in the provision of a number of support services, but not in the rules that govern its core business. All suppliers, whether they belong to the EAC or not, get the same treatment when it comes to receiving and paying for their raspberries. In this essential aspect, the EAC simply transfers to the individuals the prevailing market signals governing quality and prices. The EAC has internalized these market signals as part of its internal system of rules. In doing so, the EAC avoids the short-term costs that would result from trying to act against market trends, and it also gains long-term benefits by forcing farmers to adjust to what the market demands, or else pay the consequences. Thus, having a set of important support services, valued by the members, allows the EAC to give additional benefits to those who contribute most to the EAC (for example, by selling a larger proportion of their harvest through the organization), and to impose sanctions on those who violate their commitments and obligations, without having to distort market signals. In other words, if the EAC did not have these support services, it could only reward or

sanction a given individual by manipulating market variables, and, as we know well from the case of Golden Berries, this is an extremely dangerous game.

(b) Guaicofrut is able to monitor the behavior of each of its members in detail. On the one hand, it relies on the very close geographical and social proximity of its members to learn about such key issues as a farmer's decision to sell some of his or her crop through middlemen. Golden Berries, being dispersed over a relatively large area and not having any links with a particular rural community, could never obtain this extremely valuable information without setting up an expensive *ad hoc* monitoring system. In addition, Guaicofrut uses the information from modern accounting and information systems, such as external auditors and the Internet, to monitor daily international prices and to allow its members to monitor the organization's performance (which in practice means the performance of the board and the management). A typical commercial firm can of course have access to such monitoring systems, but it must pay a high cost to have field supervisors, lawyers and managers to monitor the decisions of its individual suppliers and to enforce their contractual commitments.

The case of Romefrut is more complex, since we have to deal with two somewhat different sets of rules, before and after the crisis of 1998-99. Beforehand, the EAC had a set of rules modeled on a typical development project. After the crisis, the EAC began to move the same way as Guaicofrut. What I would like to emphasize, though, is that this transition remains incomplete, as if there was some force preventing the EAC from learning the full lessons of the crisis, and making a clear adjustment in its system of rules, even though the members are clearly aware of this shortcoming. This issue deserves more research, but I would like to venture two hypotheses:

Firstly, based on Romefrut's experience, it appears to me that a collective action process generates an 'institutional know-how'; that is, a body of traditions, knowledge, rules, and methods that guide the individuals and the organization in their daily decision-making. When something happens that forces the EAC to change track, it still carries with it many elements of that institutional know-how, developed under different circumstances, and which cannot be discarded from one day to the next. People cannot 'reformat' their minds and the way in which they relate to each other as if they were a hard disk on a computer. If you wish, there is a path dependency in institutions and organizations, where patterns of the past continue to affect present decisions.

Secondly, when an EAC undergoes a crisis that weakens it substantially, it loses power and autonomy vis-à-vis external agents who become critical to its survival (INDAP in the case of Romefrut). These external agents attain the power to impose decisions by conditioning their continued support on the adoption of certain rules. As the external agents themselves have a stake in solving the crisis (because it would affect their own performance and expose them to the public or to other, more powerful decision-makers), there is a strong incentive for them to make decisions in their own favor. This constrains the options open to an EAC and its members. External authority becomes decisive, and it is no longer possible to say to what extent the system of rules is the EAC's or the external agents'.

Table 12.14 Rules of Golden Berries, Romefrut, and Guaicofrut (based on Ostrom, 1990)

| **RULES** | **Golden Berries** | **Romefrut** | **Guaicofrut** |
|---|---|---|---|
| Clearly defined boundaries | The members of the EAC are clearly defined. The members receive exclusive benefits in terms of preferential prices and of access to different support services. | The members of the EAC are clearly defined. The members receive exclusive benefits in terms of access to different support services, but they and the non-member suppliers receive the same treatment in terms of price, delivery and quality conditions for their raspberries. | |
| Low cost systems for monitoring compliance | The EAC totally lacked a system to monitor the performance of the different | Until this EAC's financial crisis, members lacked an effective monitoring system and | The EAC always had a strong and effective monitoring system, based both on participatory mechanisms and |

| RULES | Golden Berries | Romefrut | Guaicofrut |
|---|---|---|---|
| | members and of management. | thus they could not enforce compliance with their own rules. The system has improved somewhat after the crisis but it is still relatively weak. | on the use of specialized information services provided by external advisors. |
| Congruence between appropriation and provision rules, and market conditions | Each member received more or less equal benefits, regardless of his or her individual contribution to the EAC. This not only affected the support services, but also those related to the core business as the EAC averaged its costs and distributed them uniformly across all the members. | In terms of the core business of the EAC, the members do receive differential benefits according to their performance and contribution. However, this does not occur in terms of the different support services, where all have more or less equal access to benefits. | Each member receives benefits carefully tailored to his or her individual contribution to the EAC, both in terms of the core business and of the different support services (e.g. cash advances for labor costs or credit for agricultural inputs). |
| Graduated sanctions for non-compliance with rules | No sanctions were ever applied for non-compliance. | No sanctions are applied for non-compliance with the rules. | A system of sanctions is in place and is applied when necessary, mainly by restricting access to support services. |
| Participation of members in defining and changing rules | There was little, if any, participation of members in defining and changing the rules. This process was in the hands of the hired managers and, to some extent, a few leaders. | Most decisions were originally left to a small core group of leaders. During the crisis, INDAP imposed a number of key rules. | The members definitely play the decisive role in defining all important rules. The rules have been changed frequently to meet new conditions. |
| Low cost mechanisms for solving conflicts | Due to the lack of any significant degree of participation, there was no mechanism to deal with problems and conflicts. The EAC broke up as a result of this. | The EAC lacked a system for dealing with problems and conflicts gradually. | Conflicts and problems are approached rapidly before they grow out of proportion, and are solved through dialogue and discussions in membership meetings. The board and management have a clearly delineated authority to deal with many day-to-day problems and conflicts. |
| External authorities respect the right of members to establish their own rules | INDAP always had a great influence on the decisions of the EAC, given its extreme dependency on public funding. | During the EAC's crisis, INDAP intervened and forced a number of key decisions. | The EAC has always had a large degree of autonomy in managing all of its affairs, including the definition of rules. |