

Central American Melon Exporters. 22 Case Studies to Accompany
"From Melon Patch to Market Place:
How They Learned to Export a Non-Traditional Crop"¹

by

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BIOGRAPHIES

JOHN GUY SMITH^{1 2}

When this case study was prepared, John Guy Smith was working as postharvest handling specialist on the USAID/ROCAP Non-Traditional Agricultural Export Promotion (PROEXAG) project. His contribution to the development of the melon industry in Central America had its origins many years ago in Chicago where he grew up. Smith had an uncle who owned a farm in Minnesota. The uncle wanted Smith to work on the farm but Smith's father would only approve of this if he promised to earn a college degree. After getting out of the military following WWII, Smith operated his uncle's farm for one year and then went to Iowa State University, where he earned a degree in agronomy. Following graduation, Smith worked five years as an extension agronomist for the U.S. Department of the Interior in the U.S. Pacific Trust territories. On returning to the States, Smith ran his own farm for six years in southern Minnesota, planting commercial corn belt crops. Smith then worked for five years with the Peace Corps, first as Associate Director in Ecuador, later as Director in the Dominican Republic. He learned to speak Spanish during this period.

In 1968, Smith established a consulting firm (Básico) in Washington, D.C. Básico sought to take a systems approach to improving small-scale agriculture in Latin America, focusing the firm on small-scale agriculture in the Caribbean and Central American regions. While Básico was active in consulting over eight years, in 1972 the firm began to diversify into risk ventures in agriculture in the Central American region.

By 1975, Smith stopped bidding on consulting contracts. Over time, Smith had come to believe that there was no future for his company in consulting. First, the training package offered by Básico to the Peace Corps was tailored to the Corps' needs. But the contract had to be rebid every few years, and eventually it was lost to a firm that submitted a lower bid.

Second, Básico defined its market niche as that of focusing on a specific sector (small-scale agriculture) in a specific region (Central America). At the time, however, A.I.D.'s priority was not Latin America but rather Africa, with A.I.D. focusing on specific crops rather than on an integrated approach to solving the problems of small farmer agriculture. Básico was ahead of its time, as A.I.D.'s emphasis on farming systems research and extension did not appear until the mid-1970s.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information in this biography is based on interviews of John Guy Smith during the period that he was the PROEXAG postharvest handling specialist.

Third, it was difficult for a small company like Básico to compete with larger consulting firms contracting with A.I.D. Viewing these factors, Básico decided to rechannel its resources into risk ventures in agricultural production.

During this period, Básico had won a USAID/Guatemala contract to train extension agents in the operation of a supervised credit program. Smith hired Ignacio Gonzalez to work as the project's credit and rural development specialist. Also, Gonzalez became Básico's vice president and represented the firm in dealings with USAID/Guatemala. Smith originally met Gonzalez in Honduras in connection with one of the contracts that Smith had with the Peace Corps. At the time, Gonzalez was working for Agriculture Cooperative Development International. But even as Básico continued its consulting work Smith and Gonzalez were searching for opportunities to invest in agricultural ventures.

The choice of melon growing/exporting came about in the following manner. Activity under the Guatemala contract provided a lot of exposure to agricultural problems and potential in that country. During this period, Smith looked around at various possible ventures (cattle feeding, sesame processing) but his analysis of the market indicated that growing honeydew melon in Guatemala for export was the most promising venture to pursue.

The decision to grow honeydew for export was made after having seen a small patch of honeydew that had been planted by a Catholic priest near the town of Estanzuela in Zacapa. That small patch, in spite of not being well cared for, still looked pretty good. This provided evidence that honeydew could be grown in this area. However, as Smith notes, "none of us (the us being mostly me) had any experience with horticulture crops." During the period that Básico was gearing up to grow melons for export, the fact that Básico already was established in Central America as an operational business made it possible to split the firm's overhead between the consulting work and development of the risk venture.

Smith knew that melons were grown in California and he decided that he would go there to learn about the technology required to grow melons. During 1972, Smith made a tour of California's melon growing area, and consulted with scientists at the University of California at Davis. On returning to Guatemala, he planted his first melon trials during the 72/73 season.

Virtually 100% of the postharvest technology (classifying, grading, packing, boxing, shipping, etc.) Smith had learned in California was applicable in the Guatemala context. Hence there was almost a complete transfer of technology. Smith did introduce some modifications (e.g., less mechanization). However, the flow of melons was no different in the packing plant that Smith put up than it was in a sophisticated California packing plant. Smith realized that he would need somebody to run the packing plant. Gonzalez knew of a Mexican, Ricardo Frohmader, that he thought would be the right man for the job. On Gonzalez's recommendation, Smith contacted Frohmader who agreed to take the job. Smith sent Frohmader to California to take a crash course on managing a packing shed and packing melons.

On the harvesting and postharvest side, everything worked and Smith was able to put out a good product, as was attested by the high quality of the melons on arrival in their destination markets. In the early stages of exporting, he did experience some losses with fruit that arrived overripe. But he never had any major catastrophes on the marketing side. "Our product," Smith recalls, "always had a good reception, and this later proved to be our salvation, enabling Básico to turn things around when we ran into problems on the production side."

Smith found that the imported California technology for growing melons was not appropriate for the growing conditions in Zacapa. Some of the problems were obvious. For example, fungus is not a big problem in the desert areas of the U.S.; however, in Zacapa, fungus became a problem when Smith did not spray on a tight schedule. Smith learned to adjust the spraying technology during the latter part of that first (72/73) season. By the first year's end, and with the adjusted spraying schedule, yields increased. Smith attributed the good yields in the latter part of the first season to the changes he had made in the spraying schedule.

But Smith was not aware then that Zacapa does not have a single season during which melons can be produced across a six-month window. In Zacapa, there are subtle changes of temperature between seasons. With these temperature changes, Zacapa has two short seasons rather than one long season. Not realizing this, Smith went into the second growing season (73/74) thinking the new practices he had applied in the latter part of the 72/73 season would bring the same results if applied throughout the total season. However, by second season's end, Smith realized there was a period of time in Zacapa during which melons should not be planted. If melons are planted from September through early October, one gets reasonably good yields and size. But melons planted between mid-October to mid-January risk producing small fruit and small yields because of sporadic cold weather. In short, after the experience of the 72/73 and 73/74 seasons, Smith learned to plant melons only on the two sides of the risky time; Smith estimates this less cost Básico \$50,000 to learn.

The experience gained during the first two seasons provided the basis for adapting the planting schedule and technology for growing melons in Zacapa. Financing for the upcoming (74/75) season was obtained through a loan from the Latin American Agribusiness Development (LAAD) corporation, using Básico's equipment and the assets of the parent company in the U.S. as collateral. Básico also received advances from brokers who wanted to buy the high quality melons from Zacapa. Also, at that time in Guatemala, sellers of inputs (fertilizers, boxes, etc.) were more generous on their credit terms (30-70 days) than is now the case. Finally, Básico had entered into a joint venture agreement with a European firm that wanted to buy melons; and this firm advanced \$50,000 to Básico.

While Smith and his Básico associates had some training in agriculture, they recognized that they were not experts in how to grow melons under the conditions of Zacapa and that they would need to learn fairly rapidly. Reflecting back on that time, Smith notes that there were two reasons why Básico was able to survive: (1) on the production side, Básico was quick to make corrections; and (2) Básico had good postharvest technology.

The first year (72/73) was a breakeven year. However, by the end of the second (73/74), Básico had lost about \$105,000, about half from production losses and the other half from transport losses. The transport problem occurred because the shipping lines were having problems, beyond their control, with getting fuel. During the height of the fuel crisis, some of Básico's shipments took as long as 52 days to get to Europe and the melons were lost. Also, the European partner made a profit collecting on the insurance, and then sued Básico for faulty quality control.

With these financial losses, the firm's equity was down to about zero. Básico was able to continue because the firm had paid its bills on time. Thus, Básico had a line of credit with suppliers; also, the three principal brokers to which Básico had consigned melons were willing to extend advances. Thus, between the loans Smith and the shareholders made to Básico, and advances (\$40,000) from the three brokers, Básico was able to plant melons in the third season (74/75). That season as well as the 75/76 season were profitable.

In the first (72/73) season, Básico planted 100 manzanas (mza). In the second (73/74), Básico planted 400 mza., while in the third season (74/75), plantings were cut back to 200 and after that time have never been over 300. During this period, Básico also diversified into okra and cucumbers.

Then, in 1975, the Mediterranean fruit fly (medfly) problem appeared and a ban was placed on import of fruit to the southern United States. During a two-year period, Básico had to move all its product into Miami for trans-shipment under bond to New York (i.e., north of the Mason-Dixon Line). While growers accepted the ban passively, Dave Warren, who had worked in ROCAP and was starting up his own melon sourcing operation (CAPCO) in Zacapa, hired an entomologist to look into the problem. Warren was able to make a convincing case that the medfly was not problematic in melons; as a result, the U.S. lifted the medfly ban on import of melons to the States.

Básico followed a strategy of trying to increase profit margins and reduce risk by becoming very diversified (melons, table cucumbers, kosher cucumbers, and okra). This went against the idea of economies of scale, since this strategy complicated the management process by having four sub-enterprises. But this was both a blessing and a burden, since the strategy made it more difficult for Smith to free himself from the daily operational problems of Básico in Zacapa and prevented him from doing what he really wanted to do--get into the Pompano Market to do Básico's own selling. By working with three-four commodities, Básico was reducing the risk but increasing the demand on management.

During the last two seasons (78/79 and 79/80) that Smith grew melons for export, he had his own salesman in Pompano but little direct control over him. Smith's desire was to get more growers to sell to Básico. The strategy was to increase profits and decrease risk by increasing the product line and productivity without expanding area planted. In other words, Smith had learned not to put all of his land into a single crop. He gradually increased contracting, although at first he had to overcome a problem of lack of confidence in "gringos" (many lower growers had been stung by "gringos" on cucumber export deals in 71/72).

Smith's original objective was for Básico to do most of its melon sourcing (procurement) by contracting rather than by production. This was the direction which Básico had begun to move in by the late 1970s. However, Smith found that, rather than becoming less active, he was becoming more involved in production and working harder. The problem was increased because, as he said, "I wasn't able to develop anybody to replace me." Even today, over 16 years after Smith began growing melons, he feels that one can count on two hands the number of persons in Central America who can manage melon production successfully.

By that time, Básico was controlling sales on half of the melons grown, with the other half being sold under contract to Chiquita. Beginning in the 77/78 season, Smith also sold to Chiquita and sales to Chiquita continued through the 78/79 and 79/80 seasons.

During the years that he grew melons, Smith used riego por gravedad (gravity irrigation). But this technology increases the need for a top notch field manager. Further, the technology increases costs and risk. It is less risky to produce where melons can be grown under siembra de humedad (growing under residual moisture). If he had it to do over again, Smith says, he might have gone to Honduras, where the humedad system of growing predominates. Honduras accounts for half of the volume of melons exported from Central America and most of these melons are grown under humedad.

In 1980, Smith sold Básico to Chiquita and returned to the U.S., where he joined Appropriate Technology International (ATI) as a field officer. He later became ATI's Director of Latin American programs in Washington, D.C.

During this period, Smith also did consulting and entered into a contract with a broker (Peter Buffone International) in Pompano to source product (snowpeas, melons, cucumbers). This involved traveling part-time in Central America. However, he was only able to source products from Guatemala. He was paid a finder's fee based on volume. However, Smith wasn't happy with the way this firm was handling the agreement, and he decided to end his association with this broker.

Then Smith shifted his consulting focus to a Guatemalan co-op, known as "4 Pinos," the world's largest exporter of snowpeas. He served as an advisor on marketing, earning 2% on gross sales in 1984 and 1% in 1985. This work is what got Smith involved again with Guatemalan agriculture.

In 1986, Smith's name was proposed for a position with the USAID/ROCAP Non-Traditional Agricultural Export Promotion (PROEXAG) project. In October, 1986, Smith joined PROEXAG, where he played an advisory role in support of the development of several NTAE crops. In the case of melons, he provided technical assistance to support a pilot melon growing and exporting project in Costa Rica³ and, to a lesser extent, in the other Central American countries in which PROEXAG has worked.

³See Box 1 of case study on Alfredo Apéstegui.

RICARDO FROHMADER^{1 2}

Ricardo Frohmader, a Mexican, was born in El Paso, Texas. His parents (the mother American and father Swiss) live in Mexico. He went to elementary school in Mexico and high school and college in the U.S. After three years at Harvard, he returned to Mexico City to teach American history and French at the American School and American history at the Autonomous University; then he returned to Harvard to finish his B.A. (history and literature).

In 1969, Frohmader went to Perú to serve as the country director for Church World Services (CSW), working on earthquake relief and community development. From August 1971 to January 1972, he conducted CWS assignments in Colombia, Ecuador, and Panamá, returning to Mexico in March 1972. Later that year, he was contacted by John Guy Smith, an entrepreneur who had formed Básico, Inc., a Washington, D.C.-based consulting firm operating exclusively in Central America. Básico held a contract to conduct Peace Corps training in Costa Rica. When the contract ended, Smith decided to go to Guatemala and rent land in Zacapa to grow melons for export; it was Smith's search for someone to manage Básico's melon packing shed that led Smith to contact Frohmader.

At the time, another Mexican, Ignacio Gonzalez put Smith in touch with Frohmader. Frohmader had met Gonzalez in Mexico during the period when he and Gonzalez's wife were teaching at the American School. Gonzalez subsequently went to Honduras to work with Agriculture Cooperative Development International (ACDI). At the time, Smith was serving as an advisor to Peace Corps directors in various Latin American countries; during one of Smith's visits to Honduras, he met Gonzalez. Gonzalez subsequently left ACDI and became a partner with Smith in Básico. When Smith began searching for someone to manage Básico's melon packing shed in Zacapa, Gonzalez recommended Frohmader who, at the time, was in Mexico.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information in this biography is based on interviews with Ricardo Frohmader, PROEXAG marketing specialist.

Smith contacted Frohmader who agreed to take the job. Smith sent Frohmader to California for a two-week crash course on managing a packing shed and packing melons. Frohmader worked in Zacapa as Básico's packing shed manager during the 72/73 season. After one year with Básico, he decided to go on his own, forming a partnership with two Guatemalan farmers to grow oriental vegetables and melons for export by air to Los Angeles, Miami, and New York. He exported during the 73/74 and 74/75 seasons.³

In May 1975, the Mediterranean fruit fly (medfly) was discovered in Guatemala. The U.S. Government banned or restricted imports of a large variety of fruits and vegetables to the United States. Frohmader, knowing that Belize did not have the medfly problem, went to Belize in late 1975 to see about growing fruits and vegetables for export. However, he ran into labor problems; while he considered importing labor from Guatemala, this was not possible at the time because of difficult relations between the two countries.

Frohmader returned to Guatemala to raise fruits and vegetables for the local market.⁴ But the February 4, 1976 earthquake made these intentions academic. In the month prior to the earthquake, United Fruit had contacted Frohmader, offering him a job in Choluteca, Honduras as production manager of a recently formed melon growing and exporting company, Productos Acuaticos y Terrestres (PATSA), a subsidiary of United Fruit (Chiquita). The recommendation was made by David Warren, then ROCAP's marketing adviser in Guatemala, and later a successful grower, shipper, and distributor of offshore produce. Frohmader began working on March 1, 1976, as PATSA's production manager.⁵

³It was during this period that Frohmader met Dave Warren who was working in Guatemala as a marketing specialist with ROCAP. Warren had worked in the produce business prior to joining ROCAP.

⁴During this period, Frohmader married a Peruvian of Japanese descent, Meriko Tamashiro (Nelly), whom he had met when he worked in Perú.

⁵It was also during 1976 that Dave Warren left ROCAP in Guatemala and formed a produce importing company called Central American Produce Inc. (CAPINC).

During 1978, Frohmader was promoted to the position of general manager of PATSA.⁶ After working with United Fruit for over seven years, Frohmader left PATSA in November 1983, to accept a job working as technical director for David Warren's Central American Produce Inc. (CAPINC) in Pompano Beach, Florida. Frohmader, who had met Warren when he (Frohmader) was working on his own in Guatemala, started with CAPINC in December 1983.

While working with CAPINC in 1984, Frohmader arranged for hiring three technical specialists (who came to be known as "the three wise men") to visit CAPINC melon growing operations in Guatemala and the Dominican Republic. During these visit, the specialists provided technical assistance to the farmers who were growing melons. Frohmader worked with CAPINC for a little over a year.

In February 1985, United Fruit (Chiquita) rehired Frohmader as Director of Sourcing, in charge of melon growing in Honduras, reopening melon growing operations in Guatemala,⁷ and starting melon growing in the Dominican Republic. Frohmader moved his office from Pompano Beach to Miami. In 1986, Frohmader hired Dale Krigsvold to go to Guatemala to reopen Básico. Also, he hired Mark Smith, a Texas extension agent, to take on melon growing operations in the Dominican Republic.

Frohmader worked with Chiquita until July 7, 1987. On July 15, 1987, he returned to Guatemala to work for Chemonics International as marketing advisor on ROCAP's Non-Traditional Agricultural Export Support Project (PROEXAG).

⁶This position included responsibility for managing a melon production contract with one grower--Básico's John Guy Smith--in Guatemala; Smith later sold Básico to United Fruit in 1980.

⁷United Fruit had lost money on its Básico operation during the first season (80/81) the company owned Básico. Also, United Fruit had lost money during 80/81 in the company's banana operations; so United Fruit decided to shut down Básico in 1981.

ROLANDO PRETTO^{1 2}

Rolando Pretto was born in Panamá, his family originally having come from Sicily. In 1903, his grandfather came to Panamá from New York to work on the Panamá Canal project as chief accountant to the Atlantic side of Panamá Canal Company. His grandfather on his mother's side was chief lawyer for United Brands in Panamá. Both of his parents were born in Panamá, where his father worked for many years as the southern hemisphere manager for Coca Cola.

Pretto studied in a U.S. environment most of his life, completing grade school and starting high school in the Canal Zone school system, finishing high school at the Georgia Military Academy. Then he attended a business school in Georgia for four years, studying summers, and completing an M.B.A. in 1964. On returning to Panamá, Pretto became a Diputado Suplente (senator) at the age of 26. Active in the Arnulfo Arias government, Pretto had to flee the country following the Torrijos coup in October 1968.

He went to Costa Rica to work for 1.5 years as planning director for a company importing and assembling completely knocked down land rovers. He then came to Honduras as an assistant to the general manager of an industrial plant in San Pedro Sula, where he worked for two years. Then he became general manager of a television station, when the channel was just beginning to put up its tower and transmitter. After about six years in this job, he decided to go back to Panamá. He found that his brother had run down the family's business in French perfumes and cosmetics. So Pretto took a job as marketing director for a Russian company selling vehicles, where he worked for 2.5 years.

In this job he made many contacts, one of which led him in 1976 into starting an importing business to supply consumer goods (whiskey, canned goods) to the Ecuadorean navy and Venezuelan national guard commissaries. When both countries were hit with currency devaluation, Pretto was caught with a lot of money tied up in commissary inventory, a situation that translated into a \$250,000 loss. This experience led Pretto to get out of importing and into exporting.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Rolando Pretto, general manager, APROEXMEH (Honduran Melon Growers and Exporters Association).

With the cash left after paying debts, Pretto began to look into what products he might export to the U.S., realizing that there was little or no potential for exporting finished goods from Latin America to the U.S. but that there was export potential for fresh produce. This idea was reinforced in 1978 when he attended a conference in Miami on the Caribbean Basin Initiative (CBI).

While looking into the U.S. fresh produce market, Pretto met John Williams, a salesman for Sun World, a United Brands subsidiary. Sun World was importing melons from Honduras, where another United Brands subsidiary, PATSA, was buying melons on a fixed price basis from farmers in Choluteca and Valle. Williams had been talking with Stephen Tavilla about the possibility of importing melons from Honduras. Pretto had met Tavilla at the 1978 CBI meeting. Paul Tavilla, Steven's son, already was importing fresh produced from the Dominican Republic.

John Williams (who doesn't speak Spanish) asked Pretto if he could go to Honduras to develop a source of melons for export to the States. In 1979, Pretto went to Honduras to look for an old Italian friend living in Choluteca. This friend introduced Pretto to Miguel Molina, a Nicaraguan farming in Honduras. Pretto talked with Molina about the idea of growing and exporting melons to the United States. But rather than exporting melons directly, Molina began to grow melons under contract with PATSA. At the time, he had 12 manzanas (mza.) of land planted to melons.

At this stage, PATSA was shipping 30 to 50 containers of melon per year to the States and had a tight hold on the melon growers. However, when Pretto read a copy of the grower contract with PATSA, he realized that the melons rejected by PATSA remained the grower's property. This led Pretto to look into the quality of the rejects. At the time, PATSA was rejecting about 40% of the melons delivered by each grower. While Pretto felt that at least 15% of the rejects were in good enough shape that they could be exported to the States, it would take several years for Pretto to convince Molina to ship a trial container of rejects to the U.S.

Growers did not believe that the rejects were of a quality that could be exported. So Pretto ran an experiment during the 83/84 season. After PATSA had rejected a given grower's melons, Pretto used another farmer's truck to pick up the rejects, drove the truck away from the packing shed, added some top quality melons, and drove the truck to the start of the packing line. This load was run through the same packing operation, with the result that a high percentage of the fruit previously rejected by PATSA was now found to be acceptable.

This, Pretto explained, showed PATSA was grading the melons not by quality but by rejecting a percentage (about 40%) of the melons delivered by each grower. As any grower could see, the melons sorted as rejects the first time through the line suddenly became melons of export quality.³

Pretto continued to urge Molina to export the melons rejected by PATSA. He reports having placed 10,000 Lempiras on the table, telling Molina that he could use the money to buy boxes to pack the "rejects" for export and that, if he did, Pretto would arrange for containers to ship the melons and pay the freight. He added that the melon growers co-op (CREHSUL) also was planning to send a trial container.

Pretto arranged for Molina to export a trial shipment in early 1984. As Pretto recalls, when PATSA's management realized that Pretto and Molina were packing the rejects and loading them on a container for export, the packers were given an order to ease up on the quality control (i.e., not to reject the larger, less than top quality melons, only the small ones). This incident helped the growers to realize that the melons that were being rejected really were valuable.⁴

Molina and Pretto then struck a deal for the upcoming (84/85) season. The deal involved having Pretto assist Molina in obtaining financing from the U.S. as well as technical assistance on production and post-harvest technology. Further, Pretto agreed that he would remain in the U.S. during the season to keep an eye on the broker receiving Molina's melons.

Pretto recalls that getting money from a broker was a nightmare, and that he must have visited 40 brokers. One broker, Othal Brand (of Griffin and Brand, McAllen, Texas) listened to Pretto's proposal. Pretto referred Brand to Tavilla who told him that they had sent three trailers. This proved to Brand that Molina could grow and export melons. Brand struck a deal with Molina to provide financing and to receive 50 trailers of melons in Plant City, Florida (through Miami).

³Ricardo Frohmader (personal communication) reports that this story has the status of a myth which he remembers having heard for the first time as early as 1977. Thus, it is not clear exactly when this incident occurred, if it ever really did.

⁴That season, Molina shipped two containers and CREHSUL one, both to Tavilla, although it may have been the CREHSUL container that was first shipped, followed by the two Molina containers at a later date. See the case study on Cooperative Regional de Horticultores Sureños (CREHSUL).

The financing included \$80,000 for a slush ice cooler, generator, melon seed, and other essentials for growing and packing melons for export.⁵ Further, Brand had recently dismantled a plant in San Pedro Sula; Molina was able to purchase a lot of the plant's machinery for 4,000 Lempiras. This machinery was used by Pretto to design a packing line for Molina. While the cost of the packing line came to 60,000 Lempiras, the line was evaluated by the bank at 250,000 Lempiras.

The financing provided by Brand was only part of the money that Molina needed to raise; getting the other part was another nightmare. Pretto had a paper corporation (Basic Foods International, Inc.) registered in the States. Under the name of this corporation, Pretto did a feasibility study of Molina's export potential, binding the study in a cover having the corporation's letterhead. The study, while staying close to reality, showed good prospects and impressed bank officials at BANADESA. As a result, Molina was able to get money from BANADESA as well as from family members and relatives.

Pretto also assisted Molina in acquiring technical information on melon growing. Some of the information came from Brand who grows melons in Texas. Also, Pretto spent four months in Beltsville, Maryland, taking courses and talking with experts, to learn as much as he could.

For 84/85, Molina planted 150 mza. and harvested an average of 350 boxes per mza. This production level allowed Molina to ship the promised 50 trailers, plus some to build a track record in the States.⁶ The cif Miami per box cost of the melons was \$8.50 and the per box selling price was \$22.50, giving a profit of \$14.00 per box on 50,000 boxes (about 1,100 boxes per trailer). Molina made enough money to pay back all lenders plus a good portion of his BANADESA debt. Further, BANADESA agreed to restructure Molina's debt and gave him a new loan to plant melons in the 84/85 season. This, plus additional loans from family and relatives, allowed Molina to be able to expand his operation.

In early 1987, Ricardo Frohmader Central America Produce Inc. (CAPINC) sent Garrett DenBleyker to see Molina's melon operation; and Molina and Pretto went to Florida to talk to Warren. After four or five visits, Warren advanced \$150,000 for installation of a cold storage facility and purchase of inputs. That season plantings increased to 350 mza. and yields to 450 boxes per mza.

⁵This financing was crucial because Molina was deeply in debt with BANADESA because of losses in growing cotton.

⁶If a grower can build a track record with a broker, Pretto told Molina, he can get all the financing he needs from the States and disregard local banks.

The yield increase was achieved, in part, through the technical assistance provided by melon specialists working on a retainer with CAPINC. Known as "The A-Team" in Honduras, otherwise as "Los Tres Sabios" (in Guatemala and Costa Rica), Drs. Simons, Wolf, and Cox) visited Molina's farm during the 85/86 season, as part of their round of visiting other growers exporting to CAPINC (e.g., CAPCO in Zacapa, Guatemala and EXPORPACK in Costa Rica). Generally, they came as a team, although sometimes individually. Also, Pretto and Molina would consult by phone with these specialists as well as by visiting them in the States. Molina did not have a FAX machine at the time although he now does.

Pretto notes that he also spent a lot of time in the States getting in touch with melon specialists and has corresponded with specialists at the University of California. Further, Pretto subscribes to a number of agriculture-related magazines that provide information about developments in agriculture that bear on melon growing. Pretto also visited other grower' projects, in order to learn from other growers' experience. "One can learn more about farming by looking at what other growers do than one can by reading about agriculture." Further, Molina sent several employees to every course to which they could be sent because "we believe in training our people." When Molina began exporting melons, 6 persons worked full-time, now 80-100 full-time.

Pretto reports that he would sit down each season with Molina and develop a plan for the coming season, noting that "I've been a counselor as well as partner to Miguel." As Molina expanded his melon growing operation, he had to revise the logistics of the operation.

"Growing 300 manzanas is very different from growing 700 manzanas. Logistics change altogether and a grower must change the organization of his operation. If we had 700 manzanas in one area it would be easy as hell but not so if you are spread out over 150 square kilometers. You have to keep a skeleton maintenance staff to back up your agronomists who are monitoring the fields; and you must keep your staff the year around. From the last day of harvest, we give them 3-4 weeks vacation. As soon as they return, the agronomists start giving maintenance to the fields--levelling, drainage, plowing weeds back in before they seed. When you are not growing melons, you must be doing maintenance--stripping down equipment, attending to repairs, ensuring an adequate spare parts inventory, and making sure every bloody tractor is in complete operating condition. One cannot afford to have stoppages during the growing season. The melon plants don't wait and it is difficult to get spare parts. Each year one must go to the States with a big shopping list.

Pretto's outlook on business, he notes, is completely different from Molina who was raised in the traditional agricultural environment of rural Honduras. Having studied accounting, Pretto notes, "I had a different orientation to commercial agriculture." Despite very different backgrounds, Pretto feels that he and Molina have always hit it off well, their relationship being one of trust and respect--"We both know what it means to make money and to lose money."

Pretto reports that he had to learn the tricks of operating in an agricultural region like Choluteca. For example, he recalls the "The A-Team" coming in to look at some problems in one of the fields. The specialists told Molina's agronomist that he should have followed a particular practice to avoid the problem that was apparent. But the Honduran agronomist said this was his field and that he would do whatever he wanted to in it. From such encounters, Pretto learned to compromise. He recalls that he would say: "Let's do one field the gringo way and the other field the indio way." As a result, he says, "we generally came up with a hybrid solution, what we called a 'grindio.' In effect, we developed our own melon growing technology."

As another example, Pretto notes that when he started to tighten up on quality one time, Miguel's brother-in-law came into the packing shed totally irritated. "He couldn't understand why we were tightening quality." Pretto explained that the rejects (culls) were going to be packed under another brand which would command a lower price but still could be exported and sold at a profitable price. However, Pretto adds, "what I learned that day is that even though you have explained it once or twice, you need to explain it a 100 times to really get it to sink in."

Pretto also assisted in the development of Molina's business by assisting Molina to put sound business and marketing practices into the packing operation. During the first year (84/85) of operation of the packing plant, Molina's packers had started to select for quality. Pretto explained to Molina that a grower should never say that he is sending both grade 1 and 2 melons; he should instead pack and ship his best melons as grade 1 under one brand name, and pack and ship the grade 2 melons under another brand, being more flexible on the terms that will be acceptable. "If the grower is facing a \$22 market on grade 1, he can loosen up on the quality and pack one or two lower quality melons. But when the market tightens, the grower must tighten the quality control."

During these years, Pretto received a commission each year on Molina's export sales. However, Pretto had a desire to become independent again and make more money. He wanted to get back into something that would be profitable but that would have a lot less risk than is the case in growing and exporting melons. In 1987, Pretto left Miguel to start up a NAPA distributorship in partnership with his in-laws. This business, he felt, would provide him a way to earn dollars, not directly, but by earning enough Lempiras that he could invest in the development of a firewood exporting operation. He notes: "There is a lot less risk in exporting firewood than in exporting melons." But a bad turn of luck resulted in the loss of this distributorship, leaving him severely strapped for capital.

After wandering around for a couple of months, Pretto managed to get some investors in Choluteca interested in making frozen melon balls for export. A contact (a broker) in the States had given him an order for 5,000,000 pounds of melon balls. The resources for this venture were right at hand. First, there were a lot of non-exportable melons (rejects) available locally. Second, there was an old meat packing plant only needing to be rehabilitated in order to make it a functioning frozen melon ball plant. But the equipment Pretto had to work with turned out to be in really bad shape. The operation had just gotten underway. The first week's melon balls were in the plant freezer, ready to be loaded on a trailer. He had the truck and trailer ready for loading but he had not been able to get any diesel fuel to run the truck's motor and thereby power the trailer's refrigeration unit.

Then at 4:30 a.m. on Sunday, a transformer blew and the freezer's temperature began to rise. "When that transformer blew," Pretto recalls, "I was out of business." As the temperature rose, the melon balls started to thaw. By the time the electricity was reinstated, the melon balls had thawed--"and you can't refreeze a melon ball!" Pretto called up a local radio station and, that day, gave away 600 boxes of melon balls.

Why couldn't Pretto get the needed fuel? A budget had been set up for the startup of the melon ball operation. Pretto started setting up the plant on November 25 and completed the job in 27 days. While the job was budgeted to take 3 months, the investors couldn't believe that Pretto had used up the money so quickly--the money was supposed to last for the three months they thought was needed to put up the plant. As a result, the investors would not give Pretto any more money.

Pretto called Molina to see if he would be interested in helping to get the melon ball operation going again. But Molina had no money because he was tied up in the middle of the melon growing season. And Pretto had no money to travel to the States to raise funds. There was no point turning to the local banks, as the banks have always been ultra-conservative and are afraid to risk money in agriculture. Projects may get to the board of directors but that is where "they are killed off."

Any agricultural project to promote exports, in Pretto's view, needs the following:

- Land with good farming conditions, with the land cleared, levelled, good textured soils, drainage, and a capability to irrigate;
- Good equipment (tractors, plows, chisels, etc.);
- A good packing shed and cold storage; and
- Working capital.

But, in Honduras, Pretto emphasizes, the banks (and even A.I.D. projects) will not give a grower money to buy land; and to buy equipment, the grower generally has to borrow. However, the grower in Honduras has extremely limited borrowing power.

A grower cannot get a loan unless he can offer collateral. For every 100 Lempiras a grower can offer in collateral (e.g., land), the bank will send an evaluator to assess the property. But the evaluator evaluates everything at 75% of its value. Thus, if your property is worth 100, the bank evaluates it at 75 Lempiras. However, the bank will only lend you 60% of that 75 Lempiras or 45% of the property's original value, thereby leaving you with a very small value to put up as collateral.

Further, there used to be a credit line supported by A.I.D. that a grower could access through FEPROEXAAH. However, this credit line has been passed on to the banks. A grower used to be able to borrow from this credit line, with 60% of the loan value guaranteed by A.I.D., 40% guaranteed by the grower's collateral. Now this policy has been reversed, with A.I.D. only guaranteeing 30% of the loan value and the grower having to put up collateral equal in value to 70% of loan. At this rate, only those who are already wealthy will be the ones who are eligible for credit. Here Pretto asks: "Who is this credit line supposed to benefit?" He notes that, of the 48,000,000 Lempiras set aside in the credit line, 25% (12,000,000 Lempiras) were borrowed by Seaboard Marine, a large multinational, to finance non-traditional agricultural export development projects. In the meantime, he reports, Molina's brother applied for a 200,000 Lempiras loan under this credit line, provided the required collateral, and was denied the loan. In short, as Pretto reads the situation, "the money is not getting to the grower but to those who are the rich people who have capital. In the meantime, the grower is getting squeezed."

Pretto is concerned that managers of A.I.D. projects and A.I.D. personnel are too slow in responding to the problems that must be addressed if investors and growers are to succeed in developing non-traditional crops for export.⁷ When bankers and project managers do approve loans, it often means lending money to "buddies and friends."

In 1987, Pretto gave up on the melon ball idea. After a short period of consulting, he got a job with the USAID/Honduras-funded FEPROEXAAH, a project to support promotion and development of non-traditional agricultural exports. During early 1988, this project had gone through a reorganization that included mandatory resignations and selective rehiring of personnel. In the wake of this reorganization, Pretto was hired on June 15, 1988; he worked with FEPROEXAAH for eleven months until FEPROEXAAH asked for his resignation.

At the time Pretto joined FEPROEXAAH, he served as manager for Export Development (now Product Development). He developed programs in cucumber and ornamentals and assisted in the development of the projects for melon and shrimp. At the time Pretto joined FEPROEXAAH, Medardo Galindo (current FEPROEXAAH Product Development manager) was working as the melon project coordinator for the Cooperativa Agropecuario del Valle Limitada (COAGROVAL)⁸ in Nacaome. Galindo earlier met Pretto when he was trying to get the melon ball plant going; now Pretto was his boss.

Pretto relates that, in a meeting with the U.S. embassy commercial attache, Pretto told "the golden chariot" story. The attache asked Pretto if he thought Pretto's boss was a jackass. Pretto replied: "I'm not telling you what I think, I'm telling you how it is."⁹ Then the attache asked: "What about A.I.D.?" Pretto replied that more non-traditional export crops had been developed in Honduras "without A.I.D. than with A.I.D."¹⁰ Three days later (5/3/89), FEPROEXAAH asked for Pretto's resignation.

⁷Pretto comments that he has often told A.I.D., to no avail, that "what A.I.D. that what generally does with these projects is build a big golden chariot with six white horses and then put a jackass to drive it."

⁸See case study on Cooperativa Agropecuario del Valle Limitada (COAGROVAL).

⁹The individual in question subsequently was removed from the position of general manager of FEPROEXAAH.

¹⁰Pretto's views square with the conclusions of a recent A.I.D.-sponsored evaluation of the Agency's experience with crop diversification projects in the LAC region (Box 1).

Following a month's vacation, Pretto was back working on melons. He always had advised melon growers that they needed to get together and form an association. The growers face a number of problems in common that no one grower can solve. For example, where growers attempt to deal individually with the ocean freight companies, their problems fall on deaf ears.

Box 1. Some Conclusions on A.I.D.'s Experience with Crop Diversification in the LAC Region.

Pretto's views square with the conclusions of a recent A.I.D.-sponsored evaluation of the Agency's experience with crop diversification projects in the LAC region.

"that most successful agribusiness and agribusinessmen have very little, if anything, to do with A.I.D. or A.I.D.-sponsored projects.it was learned from the 'successful' that in their view A.I.D. tends to complicate things, is bureaucratic and rarely provides adequate long-term technical assistance from professionals with real 'hands-on' experience. . . . A starting point for improvement...is for A.I.D. to seek out, learn from and work with more of these agribusinessmen than it has in the past." (III-17-18)

"As in other Central American Countries, the private sector [in Honduras] has managed to export non-traditional crops largely without A.I.D. assistance. 'Non-A.I.D.' projects have been very successful. ...approximately 2,000 containers of melons were exported last year from Honduras; only some 140 containers were shipped by A.I.D.-supported CREHSUL and COAGROVAL." (IV. H-19)

Source: Lack, et al., 1989.

Then, during the 88/89 season, right between the first and second cycle melon crops, USDA found a larvae in a trailer of melons (cantaloupe) from Honduras. The larvae could not be identified. USDA threatened to stop all melon exports from Honduras unless the larvae could be identified as a non-threatening species vis--a-vis the production of any crop grown in the U.S. With "5,000 mza. of melon growing and millions of Lempiras invested," Pretto recalls, "all the growers were scared stiff. They were about to lose the crop which is where they really make their profit."

On February 18, 1989 (prior to the departure of Pretto from FEPROEXAAH), Galindo brought the larvae problem to the attention of Pretto. Pretto knew that FEPROEXAAH needed to move quickly. FEPROEXAAH arranged to bring Dr. Raymond Gagne, a prominent USDA insect specialist, to Honduras, with the objective of catching the larvae here and growing them out to adulthood. This would provide a means of identifying the exact species. Dr. Gagne identified the insect as one of the 30-40 species of sorghum midge (gall midge) that already existed in the States.

Pretto notes that FEPROEXAAH also had another motive in bringing Dr. Gagne to Honduras; only in this way could he become conscious of the social repercussions that would happen in the southern area of Honduras if the growers were not allowed to export melons. There was a need to get Gagne involved enough to see the importance of melon as a labor intensive crop that is the main source of income in an area surrounded by communism and guerrillas in Nicaragua.

This resolution of the matter quieted the situation but it also did one other thing. It demonstrated to the growers the importance of having an association to look after their common problems. The growers had tried to work on the larvae problem, but they had not made any progress. Everyone was working on the problem in an individual manner--PATSA, CAPCO, etc.--"cada uno por su costal sin cualquier coordinación" ("each one doing his own thing without any coordination"). However, FEPROEXAAH was able to get the problem resolved rapidly. "We convinced the growers," Pretto observes, "that with unity they could solve problems of common concern." That, in Pretto's view, was the beginning of the melon growers association.

Over the next few months, the growers talked about forming an association. In June 1989, they formed an association (with a contribution of 500 Lempiras each). On June 14, the association called Pretto in to consult on what he thought the association should do. Pretto called a meeting in Choluteca at which he asked the growers what they saw to be their problems. He wrote these on the blackboard and asked them to quantify how much each problem would hurt their pockets. On seeing the magnitude of the problems, the growers decided they needed a stronger association than originally envisioned. The growers met on June 26 and asked Pretto to become the association's manager (a salaried position). The association rented space in a building (shared with the shrimp growers association) and FEPROEXAAH's local office.

The growers asked Pretto to work on their main problem--transport. The transport problem was acute in 85/86 and again in 88/89, with growers losing thousands of boxes of melon for lack of trailers and/or space on carriers. The growers recognize that no one country in the Central American region can solve the transport problem. To solve this problem vis-a-vis the carriers, the growers have to be able to guarantee volume. This requires the involvement of all of the melon-producing countries in the region. Pretto started by calling the Dirección General de Promoción de Exportación e Inversión (DGPEI), an AID-sponsored initiative in the Government of Honduras. The association got an excellent response from the present general director, Gilberto Well. Pretto also contacted Heriberto Garcia, Consejo Hondureño de Usuarios de Transporte Internacional (COHUTI), and Mario Barboza, FEDEPRICAP (Federación de Cámaras de Empresas Privadas de Centro America y Panamá).

Once the growers began talking to these officials, they concluded that the best thing to do was to arrange a meeting of the growers, user councils, and local transportation companies, to discuss the issues. The meeting was held on July 20, 1989, in San Pedro Sula, Honduras. This meeting was followed by additional meetings in Guatemala in August, leading to a series of meetings with potential new carriers that the Hondurans had identified and with the Central American Liner Association (CALA). The growers met with the shippers on September 18-20, and with CALA on September 20. Based on these meetings, CALA agreed to rescind the 10% increase in transport rates that had been put in effect in June. Further, the growers were able to negotiate lower rates with the new carriers.

To export to the States in competition with Mexico, the growers need to produce melons of higher quality and be more efficient in growing and packing. Above all, Pretto notes, "they must be very cost conscious." The only way that the growers are going to be able to control their own future and shipping rates in the area is when they control 50% of the volume of freight being carried by the commercial carriers. This will require a large volume of produce, with the objective of being able to reach a volume of produce where the growers can afford to do their own chartering. This will require the development of cold storage facilities at the port as well as a fleet of refrigerated trailers ("reefers").

A step in this direction will be to develop "control over our own banks," Pretto argues. With the credit constraint, the melon growers are looking for investors and bankers who have money and are looking for opportunities to invest. Pretto feels that Honduras need investors from countries like Korea, Taiwan, and the Philippines, countries that have gone through a process of developing agribusinesses, people who understand agricultural development and who are looking to invest and take risks.

Another area in which the association can work is research on melons. Pretto notes that FEPROEXAAH and FHIA (the Fundación Hondureña de Investigación Agrícola) are beautiful organizations in theory. He argues that many scientists, when they get into research, have a tendency to do pure investigation. Science has a way of detaching the scientist's attention from pressing problems, so that he (or she) wants to go deeper into a subject. In Pretto's view, FHIA has turned increasingly into a purely investigative organization that has lost track of the necessity of adapting what it learns into practical application.

FEPROEXAAH and the melon growers have been trying to get FHIA to conduct research on melon problems (irrigation, fertilization, post-harvest physiology, insect/disease control, integrated pest management, post-harvest physiology, and so on). But FHIA has maintained that it has already defined its research program on cacao, etc. FHIA, the growers feel, is not fulfilling the growers need for research support, and research is not within the mandate of FEPROEXAAH. In the absence of support from FHIA, the growers feel that they may have to contract the research. They are apprehensive about this because research is costly. But the growers are considering the possibility of support of a limited research program, if they can get some matching funds from an organization such as A.I.D. The growers feel that FEPROEXAAH, with the technical assistance FEPROEXAAH has been providing, is more responsive on this issue than has been FHIA. In the grower's view, FHIA has become an elite group, unresponsive to the grower's problems and needs. This heightens the growers' need for and desire to obtain A.I.D. support on this problem.

Pretto recalls that FEPROEXAAH was born in a conversation he had with USAID/Honduras' Felipe Manteiga. At the time, Pretto was doing the research to start an export operation after the loss of his commissary trade. He proposed that A.I.D. fund an association of producer and business federations to help entrepreneurs learn how to export. FEPROEXAAH was launched in 1984. But one thing began to wrong with FEPROEXAAH, recalls Pretto, "it was becoming an alphabet soup thick with organizations that were not even exporting!" Over the past year or so, FEPROEXAAH has undergone a number of changes (e.g., a change in its statute, a new board, incorporation of independent growers who are exporters, etc.), with an aim to increasing the involvement of exporters who know the business and can help orient FEPROEXAAH's program on problems that need to be addressed. "FHIA," Pretto adds, "needs a dose of the same medicine."

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CASE STUDIES

HONDURAS

PRODUCTOS ACUATICOS Y TERRESTRES S.A. (PATSA)^{1 2}

PATSA (Productos Acuáticos y Terrestres, S.A.), a subsidiary of United Fruit (Chiquita), opened in Choluteca, Honduras in 1975. PATSA was part of a crop diversification program initiated by United Brands in 1974. For many years, United Fruit had grown bananas in Honduras for export under the Chiquita label. During the early 1970s, the government of Honduras undertook an agrarian reform. When much of the land that previously had been used for cattle and sugar cane was divided into agrarian reform cooperatives, the question arose of how the agrarian reform lands would be used. According to USAID/ROCAP's Ron Curtis, the chairman of United Fruit had the idea that the company could help Honduran small farmers to grow melons for export.

United Fruit was aware that melons were already being grown for local consumption in Comayagua and in Choluteca, in the south of Honduras. In 1974, a United Fruit employee, Bill Bolton, was given the task of organizing a Honduran melon production and exporting operation that came to be known as PATSA. Under this operation, PATSA would not own its own land but would organize production by working with the agrarian reform cooperatives.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this summary of PATSA was provided by PATSA's current general manager, Jesus E. Coto V., a Honduran who has worked during the past six years as PATSA's general manager, since this position was vacated by Ricardo Frohmader. (Some additional points on the early history leading to PATSA's creation were provided by Ron Curtis of USAID/ROCAP.)

Coto grew up in the shadow of Chiquita, his father having worked 45 years in the irrigation department of United Fruit in La Lima, Honduras. Coto planned to study at Zamorano but missed the date for the Zamorano entrance exams. He looked around and decided to attend the Tecnológico de Monterrey in Mexico. After graduating, Coto returned to Honduras to join Dole, where he worked for three years (1973-75). Dole transferred Coto to Costa Rica in 1975, to work in the company's banana operation there. In 1976, Coto left Dole and took a job with Chiquita, La Lima, where he worked on irrigation, fertilization, and drainage. He worked as a zone superintendent of half of Chiquita's banana lands, until 1981.

In 1981, Coto left Honduras for two years. During this period, he worked in Mexico for six months for a private business. Returning to Honduras in 1983, he worked for seven months in the Government of Honduras agricultural planning section of CONSUPLANE; in November, he returned to Chiquita to become PATSA's general manager. Coto speaks some English which he learned working with Chiquita.

By the mid-1970s, PATSA had initiated a program of research on melons in Choluteca and on cucumbers and tomatoes in Comayagua, managed by Chiquita's Department of Tropical Research in La Lima. This unit, Tropical Agriculture Research Services (SIATSA), had melon trials underway in the field as early as the 75/76 season. Choluteca's agriculture had primarily been cotton, cattle, sugar cane, and corn. But this started to change when PATSA began to contract with farmers to produce melons for export. Chiquita's research program continued through the 78/79 season, defining a melon growing technology for the Choluteca region. An example of this research, published by Dr. Ton D. Le, reported on 77/78 crop trials--"Muskmelon Variety Trials and Fertilizer Experiments in Choluteca."³

In 1975, PATSA entered into a convenio (agreement) with the Ministry of Natural Resources (MRN), Banco Nacional de Desarrollo (BANADESA, then called BANAFOM), and Instituto Nacional Agrario (INA). BANADESA agreed to provide the money farmers needed to finance growing melons, MRN agreed to provide technical assistance, and INA agreed to guarantee the BANADESA loans to agrarian reform farmers and to build a packing shed. PATSA agreed to provide the growers with technical assistance on melon growing, to equip the packing shed, and to buy the melons under contract with growers. This commitment by PATSA was important because farmers, in previous years, had exported melons to brokers who did not return any money to the farmers.

Farmers had begun planting and selling melons to PATSA as early as 1976. To facilitate this, PATSA put up a packing shed on a site owned by BANADESA.⁴ This was arranged by having BANADESA transfer ownership of the property to INA, and PATSA purchasing the machinery needed to pack melons and installing this equipment in a packing shed that actually was built by INA. For 11 years (1976-1987), the melons were packed in a wood box, topped by crushed ice, and then loaded onto containers.

As part of the convenio, the responsibility for running the packing shed was to be transferred from PATSA to INA in 1980. The objective was not only to teach farmers how to grow top quality melons for export but also to reach a point where the farmers themselves could pack the melons and sell them to PATSA.

³Dr. Le, a Vietnamese had earned a Ph.D. in horticulture from a U.S. university. When the war broke out in Viet Nam, he left Viet Nam to take a job with United Brands conducting research in La Lima on banana and crop diversification.

⁴The site on which PATSA set up that original packing shed is the same site on which the current packing plant of the Cooperativa Regional de Horticultores Sureños (CREHSUL) now stands. (See the case study on CREHSUL.)

To move in this direction, PATSA assisted the farmers in getting organized into a cooperative (which today is called CREHSUL). As previously noted, the original convenio provided for operation of the packing plant to be turned over from PATSA to INA in 1980. However, with the formation of the cooperative (referred to here as CREHSUL), which included melon growing farmers in the private and agrarian reform sectors, a decision was made to turn the plant over from INA to CREHSUL, with CREHSUL then giving PATSA a five-year concession to operate the plant, since CREHSUL did not have the capability to run the packing plant on its own at that time. In 1984, CREHSUL took back the plant and began to export directly to a U.S. broker.⁵

PATSA currently works with 90 farmers or co-ops from both the private and agrarian reform sectors. PATSA provides technical assistance to the farmers. The company buys inputs in volume and sells them to the farmers at cost. The farmer signs a contract with PATSA to sell the melons he grows at a fixed price to PATSA.

Each season PATSA checks the farmer's soil and makes an investment plan. When the farmer goes to the bank for a loan, he takes his contract with PATSA, soil certificate, investment plan, and collateral. If the bank approves the loan, the bank completes the loan papers in triplicate--one for the bank, one for the farmer, and one for PATSA. Machinery and irrigation pumps are provided by PATSA and charged to the farmer.

Each week the farmer brings a record of his field costs to the PATSA agronomist assigned to the farmer's field. If the record is consistent with the farmer's investment plan, the agronomist approves the record. The farmer takes the approved record to the bank, and the bank gives the farmer sufficient funds to pay his workers. For inputs, the PATSA agronomist gives the farmer a prescription that he takes to PATSA's input store. The store manager gives the inputs to the farmer, and an invoice that the farmer signs in triplicate--a copy each for the farmer and PATSA, and a copy which PATSA sends to the bank. On receipt of the invoice, the bank issues a check to PATSA in the amount of the inputs purchased by the farmer. In this way, there is little need for the farmer to handle any money.

Each time the farmer delivers melons to PATSA, the farmer and PATSA count the number of boxes of melons, with PATSA and the farmer each keeping a copy of the number and their total value. PATSA does not pay the farmer but rather sends a check to the bank. For each payment made by PATSA to the bank in behalf of the farmer, the bank credits 80% of the amount to the farmer's loan and pays the farmer the remaining 20%.

⁵Details on this period are covered in the case studies on CREHSUL and Ricardo Frohmader.

This process continues until all of the farmer's loan is repaid. Once the loan is repaid, if the farmer still owes the bank for past loans (which the farmer couldn't repay because of a failed crop such as rice or cotton), then the bank withholds 50% of the payment balance (to credit against the old loan), with the farmer receiving the remaining funds.

Until 1984, the limiting factor on melon production was rainfall. At the time Coto became PATSA's general manager in 1983, almost all of the farmers were growing melons under "humedad" (residual moisture) and using open pollinated varieties. Further, PATSA had only one packing plant in Cholulteca, one in San Bernardo, and one in Agua Fria. With melon growing was limited to these three areas, productivity and production levels were relatively low.

In 1984, PATSA took three steps that would affect dramatically production levels: (1) PATSA began to organize gravity irrigation production systems in three new melon growing areas; (2) PATSA built three new packing plants in the same areas where the gravity irrigation systems had been installed; and (3) PATSA introduced hybrid varieties. This technology made it possible both to increase the number of growers and the level of productivity, production, and exports. The impact of the change in technology is illustrated by Figure 1, which shows the dramatic increases in production of cantaloupe melon that occurred beginning in the 84/85 season and which have continued ever since.⁶

From 1976 to 1979, PATSA marketed its melons under the Chiquita brand. Then, from 1980 to 1984, PATSA exported the melons to California to Sun World, another United Brands subsidiary. Sun World received the melons in boxes that were labelled with the Sun World brand. PATSA exported under this mode until 83/84, although United Brands had sold Sun World two years before. During the last two seasons (82/83 and 83/84) of the partnership, Sun World was only a broker for United Brands.

⁶The process of technology development, adaptation, and transfer is also occurring across national boundaries. During 1989 the Costa Rican farmers who are selling to Chiquita sent a Costa Rican (Guillermo Enrique Solano Coronel) to study melon growing technology for one month at PATSA. He will return to Costa Rica to work with the melon growers there.

In the 84/85 season, PATSA again marketed its melons under the Chiquita brand. In 1986, United Brands established a Fresh Fruit and Vegetable Division to be in charge of sale and distribution of all fresh fruits and vegetables, except bananas, marketed under the Chiquita brand. PATSA's melons are shipped in United Brands trailers (70%) and in commercial trailers (30%) (i.e., CCT, Sea-Land, and SeaBoard). Since 1988 United Brands added a second boat to carry trailers. The boats are primarily banana boats but, during the melon season, the company makes trailers available for melons. Bananas displaced during the melon season are shipped under an alternate system (break bulk).

COOPERATIVE REGIONAL DE HORTICULTORES SUREÑOS (CREHSUL)^{1 2}

Prior to 1973, farmers in Choluteca, Honduras only grew melons for consumption and sale in the local market. Then, during the 1973/74 season, several farmers attempted to export melons to the United States. But they never received any proceeds from the melons exported and believed that their broker had stolen the proceeds from the liquidation. Alternately, the broker may have received poor quality fruit because the growers had not properly handled (packed) the fruit after harvest, with the result that the melons reached the U.S. in poor quality, with the broker not being able to sell them at a good price. As a consequence of this episode, the local banks became reluctant to lend money to growers who wanted to plant melons for export.

In 1974, United Brands started a subsidiary exporting company in Choluteca called Productos Acuáticos y Terrestres S.A. (PATSA) to source melons for United Fruit (now United Brands). PATSA placed a deposit in BANAFOM (Banco Nacional de Fomento (now BANADESA) as a guarantee that the company would buy the melons grown by farmers. With this guarantee, farmers were able to obtain production loans from the bank. The farmers sold their melons at a fixed price to PATSA, and PATSA packed the melons and shipped them to the U.S. to another United Fruit subsidiary known as Sun World.

During 1975, the key parties formed an inter-institutional convenio (agreement) in which each party had a specific role:

- The Ministerio de Recursos Naturales (MRN) would provide technical assistance on melon growing to farmers;
- BANAFOM would make production loans to farmers for growing melons;
- The Instituto Nacional Agrario (INA) would guarantee loans made to agrarian reform farmers who grew melons and provide technical assistance to them; and

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²This history of CREHSUL is based on interviews with Oscar Narvaez (incoming general manager, CREHSUL), Reina Bernarda Moreno (Vice-President, Board of Directors, CREHSUL), Carlos Rodriguez (former general manager, CREHSUL), Ricardo Frohmader (former general manager, PATSA, during CREHSUL's formative years), Richard Clark (member of the ACDI team that provided technical assistance to CREHSUL), Barry Lennon (who worked with USAID/Honduras during the period in question); and Ricardo Frohmader (who worked with Chiquita/PATSA during this period).

- PATSA would buy the melons, export them, and also provide some technical assistance.

Under this agreement, to last five years, each grower would produce melons under contract with PATSA. While specific arrangements (e.g., the fixed price to be paid by PATSA to the growers were to be worked out by a Comité Interinstitucional (or interinstitutional committee), the growers were not happy with the convenio or the committee because there was no representative of the growers on the committee. This was an important factor in stimulating interest among the growers in the idea of forming a melon growers cooperative (which came to be known as CREHSUL).

The convenio provided for the establishment of a packing shed on a piece of land that was owned by BANAFOM but would be donated to INA. Per agreement, the land was to be used for a joint venture between INA and PATSA, with INA building the packing shed and PATSA equipping and operating it. At the end of five years, PATSA was to turn the building over to INA, at which time the growers were to assume responsibility for packing the fruit, with PATSA buying the packed fruit and exporting it.

In the midst of the five-year period of the convenio, the growers began to take steps to organize themselves into a cooperative; they had come to realize that success in melons did not come from producing the melons but rather from selling them. At least two factors motivated the growers to organize themselves into a co-op: (1) to have a single agent representing them in the sale of melons (rejected by PATSA) in the local market; and (2) to have a united front in negotiating the fixed price the growers would receive when they sold their melons to PATSA. Over time, the growers also would come to see that they, through CREHSUL, potentially could earn higher returns by selling their melons on consignment through a broker rather than by selling melons at a fixed price to PATSA.

In 1978 (or 79?), 37 growers formed themselves into a cooperative Cooperativa Regional de Horticultores Sureños (CREHSUL), although the co-op did not obtain personeria juridica until 1980 (or 81?). Several factors motivated the farmers to form CREHSUL: (1) to have a single representative to act in their behalf in selling melon rejects in the local market; (2) to have a united front in negotiating the fixed price the growers would receive when they sold their melons to PATSA;³ and (3) eventually to get a higher price by selling directly to a broker rather than to PATSA.

³Ricardo Frohmader, manager of PATSA at that time, recalls that various government entities previously had each advocated a different farmer as the one who was the true representative of the growers.

But CREHSUL was organized without any management or administrative support. During the co-op's first two years (78/79 and 79/80), the growers continued to sell their melons to PATSA at the fixed price agreed to under the convenio by the interinstitutional committee. In 1980, CREHSUL began to negotiate this price directly with PATSA, and continued selling melons under this arrangement during 80/81, 81/82, 82/83, and 83/84.

The time period during which CREHSUL was being organized was also the period during which the convenio was coming to an end. At the time, the growers came to learn that a local politician had plans, once elected, to get INA to sell the packing shed to him. The growers viewed this possibility as very disturbing, as also Ricardo Frohmader, PATSA's general manager. Frohmader recalls that he decided to assist the growers to organize a meeting of national leaders of several cooperative groups (e.g., ANACH) and CREHSUL. At the meeting, the following proposal was advanced: (1) that, at the end of the convenio, PATSA would turn the packing shed over to INA; (2) that INA would turn over the ownership of the packing shed to CREHSUL; and (3) that CREHSUL would give a five-year concession to PATSA to operate the shed. In this way, control over the shed could be kept out of the hands of both "greedy politicians" and the state (the government); the parties agreed to the proposal and it was implemented.

Thus, just as the first five-year convenio was nearing its end, which convenio had provided PATSA access to the packing shed, PATSA was able through this second agreement to extend control over the packing shed for another five years (1980-1984), inclusive of the four melon seasons (80/81, 81/82, 82/83, 83/84) in this period. However, CREHSUL eventually would decide by the end of the second period (during the 83/84 season), to go independent and not to sell to PATSA during the 84/85 season. Key events leading to this decision are now related.

CREHSUL's negotiations with PATSA, over the price farmers would be paid for their melons, had started in 1980. This arrangement would continue for three or four seasons (80/81, 81/82, 82/83, and 83/84). But CREHSUL, as a fledgling co-op, began to run into financial problems early on. The co-op's first president had obtained loans from BANADESA to finance melon growing by the co-op's members. Also, CREHSUL incurred debts for buying inputs from suppliers on credit and then selling the inputs to farmers. But the co-op had few revenue-earning activities and soon had a debt in excess of 200,000 Lempiras. The only revenue the co-op was earning was from the sale of pachanga (rejects) in the local market, but this did not even cover the co-op's administrative costs.

By 1982, the cooperative was in financial trouble and turned to USAID/Honduras for assistance. Ricardo Frohmader, as general manager of PATSA, indicated that his interest at the time was to strengthen the ability of CREHSUL farmers to be efficient suppliers of melons to PATSA. At the time, the Mission was seeking to use the Mission's "model co-op" project as a vehicle for developing the ability of two Honduran cooperatives to grow and export non-traditional crops.

The Mission selected CREHSUL as one of the co-ops to be strengthened. As part of this strengthening initiative, the Mission required the co-op to develop and submit an administrative plan (in which none of the cooperative's management personnel were growers). Also, A.I.D. arranged for CREHSUL to receive technical assistance from Agriculture Cooperative Development International (ACDI). A.I.D. support to CREHSUL began in July 1983.

During the 82/83 season, the growers continued to sell melons to PATSA, with the melons packed by PATSA. However, it was becoming increasingly clear that CREHSUL was not going to be able to solve its problems simply by giving credit to its members. The growers realized that they needed to give more emphasis to the problem of generating income. Under the convenio, they only were selling melons at a fixed price to PATSA; in their view, PATSA was just a packer, not a broker representing growers' interests. They felt that PATSA simply passed the melons on to a broker (Sun World), another subsidiary of United Brands.

The move toward independence from PATSA began to unfold in 1983. First, during this year, the co-op hired a new general manager, Carlos Rodriguez.⁴

⁴Rodriguez is the son of a local farm family. He studied for one year at Zamorano but because of asthma was forced to transfer to the University of Honduras in La Ceiba, where he earned a degree as an Ingeniero Agrónomo. On graduating in 1976, he went to work one year as an extension agent in the Unidad Tecnica de Melon of the Ministerio de Recursos Naturales (MRN). In 1977, Rodriguez went to the U.S. (Gasden, Alabama) to take a six-month intensive English language course. Then he studied agricultural economics for two years (1978-80) at Mississippi State University. However, he left the university two course short of earning his M.S. degree and returned to Honduras. From 1980 to 1982, he worked as an extension agent for the Instituto de Café. In 1982, he left this job and returned to work on his father's farm, raising cattle, sugar cane, and melons. Then, in 1983, he became the manager of CREHSUL, where he worked for four years (1983-87). He is currently working on a personal project to grow and export melons.

Second, the possibility of CREHSUL exporting melons to a broker was given a boost when the Caribbean Basin Initiative (CBI) was announced. But the original convenio with PATSA contained a clause that the melons that were not of export quality could only be commercialized in Honduras. There was apprehension among the growers that this clause could restrict the growers from exporting their melons (even melons rejected by PATSA). Accordingly, prior to the 83/84 season, CREHSUL met with the Comité Interinstitucional and managed to get the restriction removed.

In September 1983, Rodriguez attended a CBI meeting in Miami. He met John Williams, a broker working with Tavilla, a Florida-based trading company. Williams previously had worked for Sun World (the United Brands subsidiary receiving the melons packed and exported by PATSA). Rodriguez discussed with Williams the possibility of the growers exporting their fruit directly to a broker like Tavilla.

It is important to note that Tavilla had been purchasing fruit from Turlock Fruit Company in California. As part of ACDI's technical assistance to CREHSUL, ACDI arranged for Turlock's manager, Steve Smith, to visit Honduras in early 1984 to teach the growers how to grade and pack melons. It was during this process that the growers realized that much of the fruit that PATSA was rejecting as not being of Chiquita (United Brands) quality actually was of adequate quality for export. Since these rejects belonged to the growers, they decided that they would try to export this fruit directly through CREHSUL to a broker. But to which broker?

Smith spoke favorably of John Williams and Tavilla, Rodriguez talked with Williams by phone, and Smith vouched for the quality of the melons that the co-op could supply. An agreement was reached that Rodriguez would send a melon sample by air freight to Tavilla. The sample, on reaching Tavilla, was found to be satisfactory and Williams instructed Rodriguez to ship one container as a trial. CREHSUL arranged for a container on which they could load the best of the melons that were being rejected by PATSA. It was during the loading of this container in early 1984, that PATSA's management realized the growers were taking their first step toward becoming exporters. Cooperative representatives maintain that PATSA issued an order for PATSA's packers to lower the packing quality standards to the point where PATSA would accept the melons (rejects) the growers were packing for the container.

As a result, CREHSUL was only able to load 539 boxes on the container (a little over half of the full capacity of the container). After the container was shipped, Rodriguez went to the U.S. in February 1984 to await the arrival of the container and to inspect the quality of the fruit. When the container arrived, the fruit was in perfect condition; and Tavilla was able to sell the fruit at a good price. With this success, the growers decided that they would export directly to a broker during the 84/85 season, and that they would again use Tavilla as a broker.⁵

In 1984, CREHSUL signed a contract to sell its melons to Tavilla (in Florida), in effect throwing PATSA out of the packing shed. However, during the 84/85 season, a marketing debacle occurred.⁶ Melons were beginning to come into the market from the Dominican Republic. Further, Mexico's melon production was up, albeit the quality of the melons was poor. These two factors combined to drive melon prices down. CREHSUL attempted to respond to this situation by "tightening the pack" (i.e., by packing only the highest quality melons). This, however, meant that the grower's own cooperative, CREHSUL, was rejecting smaller-sized melons that otherwise would be of export quality. Many of CREHSUL's members, particularly farmers affiliated with small agrarian reform co-ops, were upset to see that exportable quality fruit was being thrown out (the same problem they had over the years with PATSA). As a result, many of these farmers decided that they would take their melons to PATSA to see if they could get a better deal.

⁵But Miguel Molina, the largest melon grower in Honduras, went even a step further, deciding that he would export directly without going through the cooperative. Molina established a contact with another broker, Griffin and Brand, for the 84/85 season, planted 50 mza. to melons, and exported directly that season to Griffin and Brand. See the case study on Agropecuaria Montelibano.

⁶Frohmaner recalls that the decision by CREHSUL in 1984 not to sell to PATSA during the 84/85 season actually did PATSA a favor. The packing shed PATSA had been using was large and centralized, and had to be fed a large volume of melons to be run efficiently. One of the facility's problems was that a significant percentage of the melons being packed were coming from as far away as 15-25 kilometers, with growers losing 15%-20% of their fruit between the time the fruit was picked and its arrival at the shed for packing. This motivated PATSA to build smaller packing sheds in the more distant growing areas. This, in turn, led to an increase in the quality of the melons delivered to these packing sheds and an increase in packable yield, meaning reduced cost to the grower.

By this time (early 1985), Frohmader was working in Miami as Director of Sourcing for United Fruit, and PATSA's general manager was Jesús Coto. Frohmader recalls that Coto telephoned Frohmader in Miami to report that many of CREHSUL's members wanted to sell their melons to PATSA. When Coto asked if PATSA should buy the melons, Frohmader gave approval for PATSA to buy the melons, if the growers would immediately sign a contract to sell their melons to PATSA during the following (85/86) season. Frohmader estimates that PATSA lost about \$60,000 on some 10,000 boxes bought from the farmers. But the arrangement also resulted in 50-60 members of CREHSUL returning to the PATSA fold.

Frohmader adds that the growers selling to PATSA during the 84/85 season gained several advantages over CREHSUL farmers who were trying to export their melons directly to brokers via commercial ocean freight companies. First, losses on commercial carriers were running at 25%, whereas losses on United Fruit vessels were less. Indeed, it was reported that CREHSUL sent 12 containers to New Orleans in late January 1985; however, by the time the melons reached the broker, they were all rotten as a result of delays in shipment and poor packing. Second, commercial carriers charged a higher rate for cargo than the rate charged by United Fruit. Third, United Fruit (Chiquita) had in-house marketing capability. These factors, combined with the fall in melon prices during the 84/85 season, spelled disaster for the growers who attempted to market their melons through CREHSUL. CREHSUL lost a reported \$750,000.

Since the disastrous 84/85 season, CREHSUL has been recovering, with financial support and technical assistance provided by USAID/Honduras. The co-op is slowly reducing its debt, at the same time strengthening its ability to grow, pack, and export melons. The co-op now runs three packing operations--one in Choluteca which packs for melons grown on 4,000 mza., one in San Bernardo for melons grown on 4,000 mza., and one in Orocuina for melons grown on 100 mza., with about 60 farmers actually growing melons for the co-op. Melons are graded, run through a hydro-cooler, packed in boxes with slush ice, loaded on trailers, and hauled to port for shipment to a broker in the States.

The most difficult problem that the cooperative's members have had to learn to solve has been that of marketing the melons, both in terms of finding transport and getting a good price. The three Central American Liner Association (CALA) or so-called conference carriers (Crowley Caribbean Transport, Sea-Land, and Seaboard Marine Ltd.) all tend to arrive in southern Florida on approximately the same day. As a result, melon prices fall and brokers have a difficult time selling the melons at a good price.

Growers are trying to deal with this problem through their "Asociación de Productores y Exportadores de Melon de Honduras" (APROEXMEH), which was formed in July 1989. This association, in conjunction with other transport user groups in the region, recently negotiated a rescinding of the 10% increase in freight rate CALA had put into effect in June 1989. The association is also working to enlist carriers to transport melons on new routes (e.g., the Pacific route to Los Angeles).

The other big problem that has faced and continues to face the co-op is the limited availability of credit. CREHSUL is carrying a large debt and was subsidized at 1 million Lempiras per year by USAID/Honduras until 1985 (or 86?). USAID/Honduras is working with the co-op to overcome this debt problem via a range of assistance activities, including lines of credit with BANADESA and the Banco Mercantil. Also, brokers give advances.

Generally, experience has been the best source of information in learning how to export, learning from the mistakes that have been made. However, it should be noted that the growers and their co-op (CREHSUL) learned a lot about exporting through their early dealings with PATSA, then with various brokers over the years, and more recently from A.I.D.-funded technical assistance sources such as ACIDI and FEPROEXAAH.

For example, Oscar Narvaez, CREHSUL's general manager, reports that he recently attended a talk by FEPROEXAAH that informed him (and growers) of the U.S. law (PACA) that requires that growers be paid within 30 days of a broker's receipt of a shipment. Narvaez says that because the growers did not know about this law, they always signed contracts that left them without any protection under the law, allowing brokers to take 45 days or longer to make payments.

The data in Box 1 summarize CREHSUL's exporting history.

Box 1. Melon Exporting History of CREHSUL.

<u>Season</u>	<u>Boxes</u>	<u>Comments</u>
mid 70s- 1983/84		Individual growers sold on a fixed price basis to PATSA until 1980; in 1980, growers began selling to PATSA through CREHSUL at a fixed price that was negotiated by CREHSUL (80/81 to 83/84).
83/84	539	Sold to Tavilla (balance of melons sold to PATSA under the prevailing system).
84/85	---	Figures not available; a reported 10,000 boxes were lost because of lack of transport. Also, this was the year when market prices were down and CREHSUL "tightened the pack," with many growers becoming upset and deciding to try for a better deal by selling to PATSA. A reported 10,000 boxes were sold to PATSA by CREHSUL members.
85/86	45,000	Exported to Tavilla.
86/87	53,000	Exported to Tavilla. Also tried to export sesame.
87/88	61,000	Beginning this season, growers did not plant honeydew, only cantaloupe and watermelon. Switched to cantaloupe because this earned more money than honeydew; also there is no national market for honeydew. Exported to Tavilla but also to Turlock Fruit Company; tried to export watermelon to third broker but melons not of acceptable quality and had to be donated to charity; since has not tried to export watermelon.
88/89	142,000	Exported to Tavilla and new broker (CARBEN); switched from Turlock to CARBEN because the farmers felt that Turlock was selling the melons at too low a price and was taking too long to pay.
89/90 (est.)	260,000- 350,000	Planning to ship to Tavilla and CARBEN, possibly also to a third broker.

AGROPECUARIA MONTELIBANO S.A.^{1 2}

Miguel Molina, a Nicaraguan, is Honduras' largest independent melon grower. He was born into an agricultural family in that country's Choluteca region. His family raised cattle and, beginning in 1973, grew cotton until around 1982. However, with falling international cotton prices and a lot of unsold cotton in some years, the family was going from making money in one year and losing it in the next. As things were going, the Molina family began to see the need to diversify its land into other crops. As Molina puts it, "We were obliged to change."

The family began to plant grain crops such as sorghum, rice, and some corn for the local market. But farmers like Miguel who were growing grain crops ran into the problem of commercializing their harvest, since intermediaries such as millers capture the major share of the profits involved in marketing these crops. Molina reached the conclusion that being a grain farmer is not a good business unless one controls all aspects of a crop's production and commercialization. If the farmer cultivates rice, he should also control the mill that processes and sells rice to buyers.

Another problem is instability in the price the farmer gets for his crop. Molina recalls that, in one year, he sold each quintal of rice at 32 Lempiras but got only 16 Lempiras per quintal in the next year. Why? A lot of rice was produced the second year and this forced the market price down, to the benefit of the intermediaries who bought the rice, milled it, and sold it at the same price as the previous year. When a lot of rice is produced, there is no place to sell it. The government's marketing agent (IHMA) will buy rice at a stated price but the government doesn't have enough money to buy all the rice that farmers offer to sell when the market price falls because of surplus production. So farmers fall into the hands of the intermediary. The same problems are faced by farmers who produce other agricultural commodities such as sorghum and grains produced as feed for poultry and swine.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Miguel A. Molina Piñeda, general manager of Agropecuaria Montelibano S.A.

In the face of this problem, Molina decided that growing grains was not a money-making proposition. Being a grain producer, Molina feels, only makes sense for small family farms, where the family members contribute to and depend for their survival on the cultivation of a grain crop. For a firm to prosper in grains, the firm has to work the whole process--producing, processing, and selling the grain. When all was said and done, Molina stopped planting grains in 1984, although he is planning to plant some corn in the coming year to sell to his workers at cost.

Molina abandoned grains to plant melons for sale to PATSA, the Cholteca-based subsidiary of United Brand (Chiquita). PATSA was promoting melon production by local farmers. In 1981, Molina began planting melons for PATSA, selling the melons to PATSA at a fixed price for packing by PATSA.

Molina operated on this basis for three seasons--81/82, 82/83, and 83/84. However, because PATSA was very exigent on quality, the level of production per manzana (mza.) of exportable melons was very low, with a great quantity of rejects (culls). But melon growers could sell the rejects in the local market, thereby making it possible to earn a modest profit; thus, the grower always came out ahead.

A Panamanian entrepreneur (Rolando Pretto) who knew Molina had tried for several years to convince Molina to export, as a trial, one container of the melons rejected by PATSA. Finally, during the 83/84 season, Pretto was able to persuade Molina to export two containers of melon rejects to a U.S. broker (Tavilla), with the understanding that Pretto would earn a commission on the net profits from the deal.

Molina recalls that when he had his containers ready to load the rejects, PATSA suddenly stopped rejecting his melons. "Chiquita suddenly was finding that all of our melons could be exported by them." As a result, it took 12 days to load each container and the condition of these (honeydew) melons was not very good when they were shipped. However, the trial proved successful in that Molina was able to earn a profit of \$.50 on each box. Even though Molina had exported "rejects," the trial was a success.³

³A version of how this trial came about is presented in the biography on Rolando Pretto.

Molina was intrigued by the trial because it provided a basis on which to evaluate costs and potential earnings, and to begin to make decisions about what he would do in the upcoming season. He decided to plant 160 mza. (cantaloupe) for export directly to a broker. He planted only cantaloupe because it also has a good local market. To support an exporting operation for cantaloupe, Molina put up a small packing shed that would allow him to cool down the melons using ice. For shipping, he made arrangements to have CCT and Seaboard containers available to use as cold storage until full, at which point the container would drive to the port.

Molina arranged the financing for this venture through a contact that Pretto had made with Othal Brand of Griffin and Brand in McAllen, Texas. Brand had been looking around to find farmers who would grow melons for Griffin and Brand. He came to Honduras in 1983, saw the melon potential of Molina's farm, and invited Molina to visit McAllen to see his importing operation. After a period of negotiations, Molina signed a contract to export to Brand all of Molina's production on consignment.

Brand provided financing, reported by Molina to be \$52,500. Molina used these funds to buy the packing plant equipment, including an ice making machine (\$25,000) for pre-cooling the melons, a generator (\$10,000) since there was no electricity where Molina wanted to put the plant, seed (\$5000), a harvester (\$10,000), and a number of used motors (\$2,500) which Molina obtained from the Citrus Development Corporation (another Griffin and Brand investment) in San Pedro Sula. Molina put up the packing shed during 1984, and it was ready to go for the harvest of the 84/85 season. During this process, Molina received assistance from Brand.

During the 84/85 season, Molina planted 160 mza., harvested an average of 300 boxes/mza., and exported 54 containers. But he had a lot of problems with transport, including disease problems en route, the result of a lack of experience in knowing how to pack melons properly. The melons did not arrive in the condition that Brand had expected; as a result, Brand did not want to make any further advances for the following season.

In 1985, a Pompano Beach broker (CAPINC⁴) sent a company representative (Garrett DenBleyker) to visit Molina's farm. Also, Molina went to see CAPINC's melon growing operation (CAPCO) in Zacapa, Guatemala, and CAPINC's headquarters in Pompano Beach. Dave Warren, CAPINC's president, agreed to a deal whereby CAPINC would advance \$100,000 for inputs and equipment. That season Molina planted 200 mza., increased productivity, and shipped 110 containers on consignment to CAPINC. The productivity increases were achieved through technical assistance from melon specialists that CAPINC sent to work with Molina at different points during the season; the cost of the assistance was included as part of the 12% commission that CAPINC earns on the melons it sells.

During the 86/87 season, Molina planted 320 mza. and exported 160 containers. As a standard practice, CAPINC provides an advance of \$1 per box on the estimated number of boxes to be exported. Molina used this advance during 1986 to install a cold storage unit in his packing shed. Also, during the 86/87 season, Molina began exporting melons of second quality under another brand. His primary brand is "Mike's Melons."

During the 87/88 season, Molina planted 500 mza. and exported 250 containers. In other words, his productivity was averaging about one container for every two mza. planted. Also, during 1987, he installed his second cold storage unit. During the 88/89 season, Molina planted 600 mza., harvested 500-600 boxes/mza., and exported 330 containers. During this season, he sold both to CAPINC and to Chiquita. The Chiquita deal was not with PATSA but directly with United Brands, whereby Chiquita agreed to pay Molina a fixed price in dollars for the melons that he delivered to PATSA.

As Molina's operation has grown, he increasingly placed himself at risk relative to limited transport available in the region. He stopped selling solely to CAPINC because of the difficulties involved in arranging transport. He started selling to Chiquita because Chiquita guaranteed that transport will be available.

Molina is now starting to diversify his melon growing operation. He is planting about 60% of his land to cantaloupe, 20% to honeydew, 15% to an experiment with seedless watermelon that he will export to Sun World, under a deal facilitated by USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project. About 5% of his land is planted to Mickilee watermelons for export to Europe, the balance of the melons to be shipped to the States. During 89/90, he will plant 1,250 mza. and export 650 containers, and will again sell to both CAPINC and Chiquita. He also is planning to ship a small quantity of melons via a Pacific route to Lindemann Produce in California.

⁴See case study on CAPCO S.A.

The Honduran melon grower, in Molina's view, faces two major problems--one external (transport), the other internal (credit). Molina identifies transport as the most serious external problem. The growers face a common problem that the vast majority of their product is shipped into southern Florida. The ocean freight carriers leave Central American ports on the Atlantic on Saturday and Sunday and arrive within two to three days at southern Florida ports, with two or more boats arriving at approximately the same time. From Monday to Wednesday, there is a surplus of melons, while on the other days there is only a small supply and prices rise. Thus, Florida is subject to a cyclical saturation of melons and resulting low prices. This creates a surplus of melon containers relative to the limited supply of trucks available to move this freight. There are not enough trucks to move all the containers on the same day to buyers in the north. Thus, a bottleneck is created and brokers are forced to lower prices to find buyers, because the clock is ticking on the shelf life of the melons. The problem is aggravated to the extent that ten or more days already may have passed since the melons in a container were picked. Thus, by the time a container of melons reaches New York, there can be serious complaints about the quality of the melons, resulting in a further decline in prices.

Molina says that the melon growers must break the monopoly that CCT, Sea-Land, and SeaBoard have on the Central American shipping routes, by finding alternate means to ship to the northern part of the U.S. (Philadelphia and New York), where the primary area of melon consumption is located. The statistics show that the northern markets will absorb an increased supply of melons if the melons can only reach these markets. With the volume of melons that Central American growers are producing, Molina feels that it should be feasible to get a commercial carrier to go to a variety of northern markets, including New York, Philadelphia, Florida, New Orleans, and California.

Molina feels that the Central American melon industry has only been able to survive, in the face of the high transport costs, because the Mexican growers have been having production problems (pests but particularly diseases). Yet last year four of the newer melon growers (Pexatlan, Rimex, Prodensa, Orocuina Farms) went broke, much of their demise being caused by the transport problem. Molina notes that the experience of the growers who have gone broke trying to solve the transport problem on their own shows that the problem can only be solved if the growers collectively work together on the problem. Only the growers can do this; it cannot be done by A.I.D. or the government. But, Molina argues, if the growers can solve the problem, they will benefit by cheaper freight rates as well as by penetrating to markets that the growers have not previously reached.

Molina speaks favorably of the work that Rolando Pretto is doing for the melon grower's association. At the same time, Molina is the president of the association and is placing primary emphasis on working to solve the transport problem. Molina notes that, if the growers do not solve this problem, they will lose out to multinationals like Chiquita. Chiquita is now shipping only 20% of its melons to Florida, while 40% are shipped to Philadelphia and 40% to New Orleans.

Molina does not report having problems with brokers. Often, Molina argues, the problem is not the broker but the poor quality melons that he must try to sell. As Molina notes: "He can be the best broker but if you send him poor quality what can he do?" Molina emphasizes that one needs to see all the steps necessary for a successful export project. He describes a new project that his farm is launching. Getting this project going successfully will require a lot of capital to create the conditions that will enable the project to compete and earn a profit. He notes that, to date, in Honduras only four firms are exporting successfully: PATSA (owned by a multinational, United Brands), Agropecuaria Montelíbano (owned by Molina, an independent private grower), Hondex (the Israeli-owned operation with capital provided by a broker), and Sur-Agro (a fully integrated private firm owned by the SeaBoard corporation). Molina estimates that these four firms now supply 80% of the melons being exported from Honduras.

Molina asks why the other six firms growing melons in Honduras are having difficulty in developing their export operations. It is, he says, because of the credit situation in Honduras. To be successful in developing a successful melon exporting business, a grower needs to have access to capital which he can pay back over the long term. The capital is needed for all of the following:

- To clear and level the land;
- To buy and install the machinery required for the irrigation system to be used;
- To buy the other agricultural machinery that will be needed (tractors, plows, planters, sprayers, harvesters, etc.);
- To buy the inputs that will be needed (seed, fertilizer, pesticides, herbicides, etc.);
- To have the working capital needed to pay field workers; and
- To put up and operate the packing plant (including the plant's pre-cooling and cold storage facilities).

To put all of these factors in place, the grower needs timely and rapid access to credit adequate to cover all expenses involved given the project's size. Small investors and grower are weak in their financial capacity to attend to all critical elements. Yet failure to address adequately any of these elements will mean failure either in growing, harvesting, packing, or exporting the melons. As a result, production and productivity fall, losses increase, profits fall, and the project fails.

In light of these considerations Molina argues that the most serious internal problem facing the Honduran melon grower is difficulty in accessing credit. There is, Molina says, an ideal set of conditions that must be in place for a grower to have the incentive and ability to export melons. One of these conditions is access to credit, with the credit for a crop being structured in a manner that is consistent with the nature of the crop. In other words, credit needs to be structured around each crop's cycle, taking into account when the crop is planted and harvested and when growers gain access to the profits earned by exporting and selling the crop. But growing melons is not like growing permanent crops such as coffee or even basic grains. Molina feels that, in Honduras, credit for non-traditional export crops is poorly structured, being managed as if melons were a crop like coffee. There is, Molina argues, a need to reorient the bankers who manage the credit lines available for investors interested in developing melon growing and exporting ventures. However, Molina says, if the management of these credit lines does not change, Honduras will not get new melon growing and exporting businesses, and the old ones will fall by the wayside. Only the few larger firms who have access to resources will survive. "If we don't change the credit structure," Molina urges, "all we'll have is a lot of talk about non-traditional agricultural exports."

The growers were enthusiastic about the 48 million Lempira credit line established by USAID/Honduras under FEPROEXAAH. Under this program A.I.D. would guarantee 60% of the loan, with the grower guaranteeing (providing the collateral) for the balance (40%) of the loan. But growers have had difficulty in gaining access to these funds, this difficulty often including extended delays in getting approval for release of the requested funds. Further, the terms of loans made under this credit line were recently changed, such that A.I.D. now guarantees only 30% of the loan, with the grower being responsible for providing collateral to cover 70% of the loan. Molina asks: "If it is difficult for an established grower to accept such a risk, how can one expect a new grower to be able and willing to take on the same risk?"

Molina explains that in borrowing funds, the grower must assess the acceptability of the terms of the loans. First, there is the consideration of whether the credit will be available on a timely basis (very critical in the case of growing melons). Second, there is the question of the size of the loan (even if the farmer is only planning to plant a small piece of land, he still needs a lot of capital to cover fixed costs and operating expenses). Third, it must be possible for the borrower to be able to make a profit given the interest rate and length of time allowed for repayment of the loan.

Of these various conditions, the question of the size of the loan becomes perhaps the most critical for the prospective melon grower. Large loans require that the borrower be able to offer an adequate level of collateral as a guarantee. However, it is difficult for the small grower to translate the limited capital that he owns into an adequate level of collateral to guarantee the amount of capital needed to finance the startup and operation of a melon growing and exporting company. This is because the banks will only assess a capital good (land, machinery, etc.) at 75% of its market value and will only loan at 60% of the assessed value. Thus, a market value of 100 Lempiras will be assessed as being worth only 75 Lempiras, and the farmer can only borrow 60% of this amount or 45 Lempiras. Thus, if it was difficult to line up adequate collateral when the farmer only had to guarantee 40% of a loan under the FEPROEXAAH program, it becomes even more difficult, if not impossible, to line up adequate collateral when the borrower must now guarantee 70% of the same loan.

Finally, Molina notes that he cannot understand why his brother's loan application for 200,000 Lempiras under the FEPROEXAAH credit line was not approved even though the brother had put up adequate collateral. Yet, he adds, a large multinational like Seaboard has been able to get loans totalling 25% (12,000,000 Lempiras) of the total credit line of 48,000,000 million Lempiras. Molina feels that there is a definite bias in this program against the small- to medium-sized grower in favor of the multinationals.

SUR-AGRO^{1 2}

Sur-Agro, established in June 1987, is a relatively new player in Honduras' melon export industry. Yet in two seasons the firm's exports have grown rapidly, from 150,000 boxes during the 1987/88 season to 382,000 boxes in 1988/89. An estimated 900,000 boxes will be exported during the 1989/90 season. The firm's general manager, Andres Lardizabal, used to own of the land which Sur-Agro currently uses for the firm's melon growing and packing operation.

Lardizabal speaks English which he learned, at the age of 17, in St. Louis, Missouri, where he studied English for eight months in 1967. Then he attended Zamorano for three years to become an agronomist; he then returned to Choluteca to work on the family farm. The family had a large business in cotton and rice but, for financial reasons, the business went bankrupt. The firm lacked adequate long-term financing, and was trying to get by on short-term credit totalling 11 million Lempiras. Then interest rates went from 11% to 19%, and finally to 21% when a loan was in default. Lardizabal tried to work on this basis for four years. USAID/Honduras offered to extend a loan of 3 million Lempiras but BANADESA would not accept issuing the loan unless the bank became the owner of the enterprise. As a result, Lardizabal could not meet his loan obligations and was forced in April 1985 to shut down a 1,000 manzanas (mza.) operation that was employing 800 persons during the peak of the crop season. Without the income from this farm, he was unable to pay the interest on the loan obtained by mortgaging 300 mza. of his farm land. This was the land that he had mortgaged to obtain the funds to operate the balance (1,000 mza.) of his farm. The private bank that had issued the loan finally took possession of the 300 mza.

When Lardizabal shut down his farm, one of his workers (Vernan Perez, also a graduate of Zamorano, where he and Lardizabal had been roommates) eventually travelled to Comayagua, where he found a job as an agronomist with Agro-Internacional, a subsidiary of Seaboard Corporation. Agro-Internacional was planting melons in Comayagua and was looking for other land on which melons could be planted. Perez told Agro-Internacional's general manager, Derald Smart, that he knew of a good piece of land in Choluteca. Smart went to Choluteca to look at this piece of land, specifically, the land that Lardizabal had lost. Agro-Internacional decided to start a melon growing and packing operation on this land and to buy the land from the bank.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Andres Lardizabal, general manager of Sur-Agro.

The idea for ventures like Agro-Internacional and Sun-Agro, both subsidiaries of Seaboard Corporation, grew out of the decision of Seaboard's owner, Harry Bresky, to produce non-traditional crops that could be shipped from Central America and the Caribbean to the U.S. in boats owned by Seaboard Marine, another subsidiary of Seaboard Corporation. Otto Stalinsky, a promoter of agribusiness projects, proposed to Bresky that Seaboard launch a series of non-traditional export crop projects in Central America and the Caribbean.

Seaboard Corporation launched several non-traditional agricultural export projects, including papaya in Jamaica; shrimp in Venezuela and Honduras; cucumbers and frozen strawberries in Comayagua, Honduras; and melons in El Salvador, the Dominican Republic, and Honduras (Comayagua and Choluteca). In the case of Choluteca-based project, Seaboard built Sur-Agro's packing plant with the company's own funds.

While Sur-Agro has not encountered financial problems, management problems during the first crop season (87/88) resulted in losses. During that season, Sur-Agro was run by two managers who failed to pack some 100,000 boxes of melons, resulting in an estimated loss of 1,000,000 Lempiras. This problem arose, in part, because Seaboard was starting up so many projects at the same time in the Central America that it was difficult to find the trained manpower required to manage the projects. Sur-Agro hired Lardizabal to run the company's growing operations. He realized that the two managers were getting the company into trouble. He brought this problem to the attention of Derald Smart, country-level manager of Agro-Internacional. The two managers were fired and Lardizabal became the new general manager of Sur-Agro.

Sur-Agro's melon growing technology was developed through an adaptive process, building on melon growing technology that was being used in the region, supplemented by technology imported from other locations. Lardizabal has worked in agriculture (rice and cotton) for 18 years in the southern part of Honduras. In the first cycle of the 87/88 season, Agro-Internacional brought in local agronomists (two had been working with Miguel Molina)³. For that first crop, a number of ideas were contributed about the melon growing production system to be followed. Then the crop was closely watched to identify the corrections that would need to be made. For the second cycle, Lardizabal designed a new system. However, Lardizabal notes, "the two agronomists who had worked with Molina for five years did not accept the new system at first, only after 45 days when they saw the melon harvest."

³See case study on Agropecuaria Montelibano.

The following provides an idea of how this adaptive research process has impacted on melon yields. The technology followed by Molina's two agronomists yielded 400 boxes per mza. But during the first cycle of 87/88, it was not possible to measure yields because of problems of theft. Also, 80% of the fruit was too large (size 9 or 9 melons per box) and would only command a low price. However, with the adjustments made by Lardizabal in the technology used during the second cycle, only 20% of the melons were too large, with 80% being of a size (12, 15, 18) that would bring a good price. During that second cycle, a yield of 550 boxes per mza. was achieved.

During the 88/89 season, yields continued to increase--830 boxes per mza. during the first cycle, although only 500 boxes per mza. in the second cycle; the reduced yield was due, in part, to climatic factors but also to inadequate control of insects and diseases. Also, there was poor management of beehives during this second cycle. As a result of this problem, Sur-Agro hired a bee expert from El Salvador to work on beehive management during the whole year. In fact, this expert is developing a completely separate bee project, involving 3,000 beehives, to ensure the availability of pollination as Sur-Agro increases the area planted to melon.

For the 89/90 season, Lardizabal is estimating a yield of 950 boxes per mza. during the first cycle (under irrigation), and 550 boxes per mza. during the second cycle (under irrigation). He expects that this yield level can be increased to 600 boxes per mza. through the use of better insecticides, better foliar and granular fertilizers, better management of the beehives, and use of more machinery. Thus, the process of adapting the technology will continue based on the experience gained each season.

Sur-Agro is expanding the land planted to melons and increasing the productivity. Indeed, some of the commercial plots being used by the firm have yielded as high as 1,050 boxes per mza. in areas as large as 18 mza. Other areas, totaling some 330 mza. yield 830 boxes per mza. These fields benefitted from better protection from the wind and better pollination, among other contributing factors (e.g., fertilizing and irrigating at the optimum time). Sur-Agro is seeking to establish comparable growing conditions on the fields where yields were lower for the lack of these beneficial conditions. For example, Sur-Agro has taken steps to increase availability of water for irrigation during the second cycle. They dredged an area 500 meters long, meters wide, and 20 feet below the water table to create a holding pond for irrigation water used during the second cycle.

The melons shipped by Sur-Agro are received in Miami, by Chestnut Hill Sales, a subsidiary of Seaboard Corporation. Sur-Agro only exports to the U.S. at this time. The fruit already is sold before it reaches Miami and is sold under the Chestnut Hill Farms label. Rejects (15-20%) from the packing line are sold locally.

Sur-Agro has a 10-year development plan that involves adding no more than another 500 mza. of melon. The company is attempting to achieve an optimum utilization of all of its fixed capital. This can be achieved by following a system of planting 100 mza. per week for 15 weeks during the first cycle, thereby providing 18 weeks of harvest. During the second cycle, the plan requires five weeks of planting and eight weeks of harvest. Taking into account the overlap between seasons, this system will provide a total of 23 weeks of harvest. With 100 mza. being harvested each week, the packing plant can operate at 60% of capacity with a yield of 600 boxes per mza. throughout the season.

Sur-Agro is only growing melons and has not yet had a chance to explore the potential of alternate crops during the invierno (rainy season).

Lardizabal feels that the policy environment for growing and exporting melons in Honduras is favorable. The regimen de importación temporal allows the grower to import production inputs and machinery used in growing export crops without having to pay an import tax on these inputs; and these inputs can be paid using the cetras (issued by the government in a dollar amount equivalent to 50% of the import dollars earned). This provides the investor and/or grower a means whereby he (she) can access dollars earned through exports to pay for inputs. The debts incurred by Sur-Agro for inputs, machinery, etc. are registered in the Banco Central by Seaboard. Sur-Agro uses the cetra as a form of dollar account, against which the Banco Central can issue checks in dollars to pay for the inputs that Sur-Agro has imported. Also, the cetras can be sold for Lempiras on the open market.

He also notes the benefit of the "cefex" (certificado de fomento a las exportaciones). With the classification under which melons fall, the exporter can receive a bond equivalent to 14% of the value of the melons exported. The "cefex" can be used to pay customs taxes or can be sold for Lempiras on the local market for 96% of their face value.

Sur-Agro does not contract with other growers. The company tried this system with two growers during the first season but they did not follow Sur-Agro's production recommendations. As a result, Sur-Agro had a problem with the quality of the melons produced.

The Sur-Agro melon project has not received any technical assistance from FEPROEXAAH, although the other Seaboard projects (in shrimp, citrus, green pepper, strawberries, etc.) have received technical assistance from FEPROEXAAH as well as credit under a 48,000,000 Lempira credit line. (Seaboard, borrowed 12,000,000 or 25% of the line's available credit.)

Lardizabal notes the difficulty of trying to work with the banks in Honduras. He says that "one cannot do a project like Sur-Agro with a Honduran bank." Sur-Agro is only able to get loans from local private banks (Banco Sogerin, BAMER, and BANCASA) because Seaboard provides a corporate guarantee on the loan. Lardizabal notes that one bank can't meet all of a firm's financial needs because any one bank cannot loan more than 20% of its liquid capital to any one client. Sur-Agro's loan is a rediscount loan at 13%, where the regular interest rate is 17%. The bank is interested because it can earn 3% on the loan, given that the bank borrows the funds at 10%, with the loan being guaranteed 100% by Seaboard. Also, the lending bank is entitled to receive a dollar amount from the Banco Central equal to 20% of the value exported, which dollar amount can be used to issue letters of credit. The banks also earn 5% on the "cetras."

COAGROVAL^{1 2}

The Cooperativa Agropecuario del Valle Limitada (COAGROVAL) is located in the Department of Valle, Honduras. COAGROVAL was formed in 1985, to assist the farmers in exporting their melons. Prior to the cooperative, the farmers grew melons under contract with Productos Acuáticos y Terrestres (PATSA)³, selling melons to PATSA at a fixed price, with PATSA packing and exporting the melons. This mode had been followed by the farmers since PATSA's creation in 1975/76. While some of the Valle farmers may, at one time or another, have been members of a Cholutecan cooperative (CREHSUL)⁴, they left CREHSUL when there was an opportunity to join a cooperative located in their own department. All of the co-op's members are private farmers.

During the 85/86 and 86/87 seasons, COAGROVAL negotiated a fixed price for the melons they sold to PATSA. At the time COAGROVAL was selling to PATSA, yields were 150 boxes per manzana (mza.). Valle farmers felt that, at the fixed price they were receiving, they were not getting a high enough return on the melons they sold to PATSA. This motivated a decision by the growers to get into exporting the melons themselves, which they began to during the 87/88 season.

They first approached government institutions such as BANADESA, seeking assistance for developing an exporting operation, only to find that the government could not or would not help. Then they approached the Federation of Agricultural and Agroindustrial Producers and Exporters of Honduras (FEPROEXAAH). FEPROEXAAH was contacted through family connections with Ilsa Diaz Zelaya who was, at the time, President of FEPROEXAAH.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Medardo Galindo of FEPROEXAAH Director of Product Development. Galindo originally joined FEPROEXAAH to serve as advisor to COAGROVAL in the development of the cooperative's melon exporting initiative. Additional information was provided by the cooperative's Operations Manager, Melido Reyes.

³See case study on Productos Acuáticos y Terrestres (PATSA).

⁴See case study on Cooperativa Regional de Horticultores Sureños (CREHSUL).

At the time, there was a fever upon the land with entrepreneurs seeking to cash in on the non-traditional agricultural export fever triggered a few years before by the announcement of the Caribbean Basin Initiative. Also, FEPROEXAAH's mode of operation at the time was to identify and bring together potential partners for joint ventures. It was within this context that FEPROEXAAH was "instrumental" in bringing COAGROVAL into contact with the Agro-Business Corporation of America (ACA).

ACA came to Honduras as one of the many firms that FEPROEXAAH had identified as potential investors in non-traditional agricultural export ventures in Honduras. The company already had invested in a plantain project and had a letter of credit. However, ACA had lost a reported \$80,000 in that venture which had been conducted in partnership with ANAPLAH (Asociación Nacional de Plataneros de Honduras).

Galindo had been working on non-melon projects for United Fruit at the time he joined FEPROEXAAH. By the time he was on board in his new job, FEPROEXAAH already had negotiated with ACA and COAGROVAL. The growers originally had proposed that they would do the packing but this was not acceptable to ACA. The president of ACA, Richard Smith⁵, came to Honduras to talk with COAGROVAL's farmers. He finally agreed for ACA to be the broker but imposed as a condition that the farmers bring their melons to the packing shed of a Jim Brock⁶ who would pack the melons and ensure that only melons of adequate quality were packed for export. However, the farmers had reservations about this condition because they previously had experienced problems in getting their melons packed by Brock. Also, Brock's shed was 18 km. away from where the farmers grew their melons in Agua Fria.

Despite these problems, FEPROEXAAH proceeded to put together a proposed deal with the following provisions:

1. COAGROVAL's farmers would produce and deliver melons to Brock's packing plant.
2. Brock would set up a new packing and cold storage plant in Agua Fria, would pack the melons, and would provide technical assistance for field work.

⁵Richard Smith previously was the head of USDA's Foreign Agricultural Service.

⁶Brock originally had been a California asparagus farmer. He and his father had a melon growing, packing, and exporting operation in Nacaome (Valle); and some of the Valle farmers previously had sold melons to Brock. Brock also had worked for the Foreign Agricultural Service and, in the mid-1970s, had been stationed in El Salvador.

3. FEPROEXAAH would provide a coordinator and would assist Brock and COAGROVAL in obtaining the "eligibility certificate" that the farmers needed in order for the bank to be able to make production loans to farmers against an A.I.D.-financed line of credit.
4. ACA would put a letter of credit as a guarantee for 40% of the loan and would sell the melons on consignment.

The three parties--COAGROVAL, ACA, and FEPROEXAAH--found these terms to be acceptable and a marketing contract was signed. (After the contract was signed, FEPROEXAAH requested USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project to provide assistance. PROEXAG's marketing specialist, Ricardo Frohmader⁷ visited Honduras to review the deal and recommend that FEPROEXAAH and COAGROVAL pull out of the deal. However, these two parties proceeded with the deal and without PROEXAG involvement.)

At the time, Melido Reyes was the president of the cooperative. Reyes approached the Banco de los Trabajadores. The bank agreed to provide production loans to the farmers but required that the financing for the packing plant be provided to Brock under a separate loan. FEPROEXAAH had given an eligibility certificate for Jim Brock but the certificate was not approved by the Central Bank because the production credit and packing shed loans had been presented separately rather than as one project. However, Brock was finally able to get the loan from the Banco de Los Trabajadores.

With these problems out of the way, Galindo started to organize the project. The technical assistance that Jim Brock was going to provide came in the form of two of his technicians who knew how to grow melons; also, he was going to hire another in order to have three field technicians.

COAGROVAL's farmers started to plant melons, with productivity increasing each season, as follows: 200 boxes per mza. in 87/88, 254 boxes per mza. in 88/89, and an estimated 300 boxes per mza. in 89/80.

However, at the end of the first season (87/88), COAGROVAL came to believe (based on reported prices other brokers were receiving) that the average selling price (\$13.50 per box) reported by ACA was below the actual selling price. Galindo, as coordinator, went two times to Miami to check on the quality of the fruit upon its arrival; in both instances, the melons were found to be in good condition.

⁷See biography on Ricardo Frohmader.

Richard Smith came to Honduras in January 1988 to meet with the bank, COAGROVAL, and FEPROEXAAH. The project did not have any idea what the liquidations had been. ACA maintained that the firm could not give the farmers this data because, Smith said, liquidations had not been finalized. ACA gave an estimate of what the co-op's final net return would be, based on an average price per box. However, the bank (which had done its own checking) felt that this figure was not acceptable, being considerably below what the bank knew market prices had been.

After that meeting, the project's coordinator and COAGROVAL's president went to the hotel to meet with Richard Smith. The project representatives told Smith that the figures that ACA had given the bank would not be sufficient to pay the loan and that, if the loan was not paid, the whole project would come to a halt. Smith asked what amount was required so that the project would not fall through. The group did a quick calculation and gave him a figure. He told them not to worry since the last 20 containers that had arrived had come to the market when the prices were high and that there would be sufficient money.

During the harvest, which lasted three weeks, COAGROVAL packed and exported a total of 50,000 boxes. Yet, for that year, the co-op was only able to break even financially.

FEPROEXAAH had designed the deal based, in part, on the fact that ACA was listed in the Red Book and the Blue Book. While the listing of ACA did not include a rating, FEPROEXAAH felt that ACA had come to Honduras with a sincere interest in helping growers to export melons. Also, ACA had agreed to put up a letter of credit, required by the bank as a condition for making production loans to farmers. Thus, there was reason, FEPROEXAAH felt, to decide to work with ACA. The firm appeared to be one that could be trusted.

Now, ACA was not just a group of lawyers in Washington, D.C. The company had established an agri-business section that had entered into a joint venture with a Miami-based broker, Alan Brentenson. This joint venture was called ACA Trading Company. COAGROVAL made an agreement with ACA to ship the melons to ACA Trading.

During the first year, COAGROVAL didn't have a problem with transport. However, the co-op did have problem with transport during the second year. While the co-op shipped 116,000 boxes to ACA Trading and 10,000 to another broker, one or two containers were lost for lack of transport.

Brock assigned one of the technicians working as the manager of his company (La Careta) to spend most of his time building the packing plant. According to Galindo, Brock did not put up any money in the deal in question, working only with money from the packing shed loan. He changed some of this money to dollars to buy equipment.

According to the contract, Brock was to build the new packing shed near the area where the farmers would be growing melons. However, Brock already had another plant 20 km. away in Nacaome. After a few months, the growers realized that the construction of the new packing shed was progressing very slowly. Soon there was only one month left before the time of harvest, when the packing shed would be needed.

The equipment which Brock had purchased for the packing shed happened to be old equipment. Galindo recalls that, when he saw this equipment, he realized that the packing shed was not going to be operational. Galindo and COAGROVAL began to get ideas about how to get La Careta out of the picture. By the time the melons were ready to be harvested, they had made an agreement with Miguel Molina, Agropecuaria Montelibano⁸, to use his packing plant (with cold storage) about 20 km. from COAGROVAL's planting area. The co-op's members had decided that they preferred to pay Molina for the packing services rather than risk putting the melons through Brock's packing shed.

When COAGROVAL started packing, the packing shed being built by Brock was at least two months short of completion. Further, the growers realized that the plant that was being put up did not comply with the terms of the contract. There was no cold storage room and the equipment was too old. Brock had maintained that there would be no problems with the cold room. He refused turning the cold room on for 15 days as a test, so the growers realized that Brock was trying to get them locked into using his packing facility in order to later be able to claim a breach of contract. They made an agreement with Brock that they would pack their melons at Molina's facility until Brock was ready to go, that is, until he could prove his facility was in working condition. But he was never able to get the plant into working order.

⁸See case study on Agropecuaria Montelibano S.A.

Financially, the growers only made a small net profit (40,000 Lempiras) that first year. However, the growers were spared the problem that arose between the bank and Brock on the packing shed loan. The bank had given the packing shed loan to Brock but he was never able to prove the real cost of the equipment he purchased. The bank had a problem because they had made a loan to Brock but the packing plant wasn't ready to be used to pack melons; hence Brock could not generate funds to repay the loan. Based on this experience, the growers realized that the only way the project could succeed was for the growers to have their own packing plant. A grower cannot operate if he (she) does not know where the harvested melons are going to be packed.

By the second year, COAGROVAL was looking to have its own packing plant and not to do business with Brock. Then the bank came forward offering to pass Brock's debt on to COAGROVAL. While Brock's equipment was old and in need of repair, the growers realized it would be easier to take over the plant and put the equipment into shape than to build a new plant from scratch. They already had seen how long it had taken La Careta to put up the existing shed. Thus, there was only one decision that they could make. The co-op assumed Brock's packing plant loan, took possession of the plant, and began packing its own melons during the 88/89 season.

On the marketing side, ACA Trading was importing the melons and giving them to another broker to sell. The growers began to see that money was lost every time the melons changed hands. By the first season's (87/88) end, ACA Trading was selling the melons directly to a firm called Great American Farms. Galindo recalls that Great American Farms recognized the good quality of the melons and was selling them for as high as \$30.00 per box. During the second season (88/89), ACA teamed up with Great American Farms to form a joint venture called ACA Produce Services.

After the first season (87/88), the cooperative's president, Melido Reyes, was appointed as the project's Operations Manager. Galindo recalls that Reyes was instrumental in making the project more efficient. A decision was made to establish a committee of representatives from FEPROEXAAH, ACA, COAGROVAL, and the bank, with a report being made on a monthly basis on the problems being faced and the decisions being made. COAGROVAL had decided to include ACA on committee because ACA had given a letter of credit which was three times that given in the previous year, since the second year's planting was to be triple that of the first year.

After the first season, Alan Brentenson, the president of ACA Trading, was fired and replaced by Fred Schwartz. COAGROVAL held several meetings with Schwartz. Schwartz explained that the agreement with Great American Farms had only been to handle the melons on arrival, and that in the future Great American Farms also would help with the selling of the melons.

During 88/89, COAGROVAL's farmers planted 570 mza. In view of the co-op's financial situation and ACA having given a \$270,000 letter of credit, the co-op agreed that ACA would continue to be the broker. Also, FEPROEXAAH had taken steps to improve the export control system, whereby FEPROEXAAH would track the prices that ACA was reporting against USDA prices. From this tracking system, FEPROEXAAH realized that, after the 44th container had been sent, there was a difference of \$70,000 just because of the difference between the prices being reported by ACA and USDA.

Then COAGROVAL ran into a problem that the co-op could not get enough containers on a timely basis. While COAGROVAL continued to send melons, ACA started reporting back that the melons that were arriving were of second quality. COAGROVAL began to suspect that ACA was influencing the inspectors, trying to get the melons downgraded because of a quality problem.

(Galindo notes that a quality problem may have arisen because of the delays in getting containers. In terms of quantity, about 20 containers of melons had to be held in cold storage until transport was available, and the cold room was holding more fruit than its designed capacity, with melons being stored under less than ideal conditions.)⁹

Also, with the lack of transport, COAGROVAL, had to send 20 containers with a new company (Fourchon) that was handling melons through New Orleans. However, ACA would not accept having the fruit sold in New Orleans, and sent trailers from Pompano Beach to New Orleans to bring the melons back to Pompano Beach rather than selling the melons directly to the north from New Orleans.

Galindo states that it might have been fair, in view of the above problems, to have downgraded 20,000 boxes but not all 50,000 boxes. Galindo had traveled to New Orleans and Great American Farms' inspector had said that the melons were arriving in good condition. Yet the very next day ACA reported that the melons were no good. The lesson here, Galindo notes, is that the co-op did not have a person working in their behalf, full-time, to receive melons. Lacking such a person, the growers were in the hands of the brokers.

⁹PROEXAG marketing specialist Ricardo Frohmader notes that the cold room at COAGROVAL never worked properly, with the melons never being cooled below 54°F, when 38°-42°F was necessary.

In view of the problems that COAGROVAL has had with ACA beginning with the first season (87/88), the co-op is considering taking legal action against ACA. This desire was reinforced by the fact that ACA didn't send any liquidations to COAGROVAL during the second season (88/89). But the co-op's members recognize that this would be very expensive, especially with the co-op trying to go up against a law firm (ACA).¹⁰

¹⁰Another interview with Tico Melon in Costa Rica, a firm that also had problems with ACA, revealed that ACA may have closed its offices in Washington, D.C. If this development is true, it is not clear what legal action can be taken against ACA. However, it is understood that COAGROVAL and FEPROEXAAH continue to look into the matter. See case study on Tico Melon.

GUATEMALA

SR. A - AN INDEPENDENT GROWER IN GUATEMALA¹

In terms of number of years exporting melons, Sr. A. is one of the oldest melon growers in the Central American region. He is the general manager and one of the stockholders in Company X. The company produces various crops, including melons which are packed under various labels. Over the years, Sr. A primarily has exported honeydew but also at times has exported cantaloupe and Mayan Sweet. For 89/90, he is expanding his mix of melon exports to include seedless watermelon.

Sr. A comes from a coffee and dairy cattle family in another Central American country. Most of his family from his father's generation have been educated in the United States. In 1961, Sr. A ventured into growing cantaloupe and watermelon for local consumption in his native country. Sr. A continued with this until 1968.

During this period, a cousin was trying to grow and export vegetables (cherry tomato, bell pepper, eggplant) through a company called Jetway. Having problems with this venture, he asked Sr. A for help. Through this connection Sr. A met a Chilean working with Jetway as a Spanish-English interpreter. The Chilean suggested that Sr. A try growing honeydew melon for export to importers he knew in the States; further, an American farmer working with Jetway had experience in growing melons. Sr. A., who had money available to invest in such a venture, already had experience with growing melons for the local market. For Sr. A, this combination of factors developed into an interest in growing melons for export to the U.S., with the idea that Central America could be the "fresh fruit basket" of the States.

In 1968, Sr. A began to try to export melons, working with two of his brothers. In the first year (68/69), they could not get enough packing boxes and were only able to export a small quantity of melons. In the second year (69/70), they held off planting until they were sure that they would have packing boxes. But they waited too long and planted too late, with the result that the quality of the melons harvested was not good enough to compete with the quality of the melons in the market at that point. The venture lost money in both years and the two brothers turned their attention to other pursuits. But Sr. A continued to stick with it. In the third year, the rains were prolonged and the melons suffered a fungus attack. Sr. A didn't have the right spraying equipment and, as a result, had only a small operational profit. It was not until the fourth year that Sr. A. turned a profit from exporting melons.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

Table 1 gives an idea of the level of melons exported by Sr. A between 1969/70 and 1979/80. But in 1979 there was an agrarian reform in his native country, and Sr. A's family lost much of its land. The reform created instability in the country's economic and political situation that made it difficult for Sr. A to grow and export melons. For example, he couldn't get reliable transport. His last export shipment from his native country was in 1979/80.

Table 1. Sr. A's Melon Export from Country X (69/70 - 79/80).

<u>Year</u>	<u>Boxes</u> (rounded)
69/70	11,000
70/71	34,000
71/72	25,000
72/73	48,000
73/74	69,000
74/75	88,000
75/76	98,000
76/77	105,000
77/78	166,000
78/79	111,000
79/80	178,000

With the problems in his native country, Sr. A decided to come to Guatemala, in order to continue growing and exporting melons. Between 80/81 and 88/89, his melon exports continued to grow as indicated in Table 2.

Table 2. Sr. A Melon Exports from Guatemala (80/81 - 80/90).

<u>Year</u>	<u>Boxes</u> (rounded)
80/81	162,000
81/82	189,000
82/83	156,000
83/84	125,000
84/85	126,000
85/86	195,000
86/87	270,000
87/88	257,000
88/89	275,000
89/90	400,000 (estimated)

Over the years Sr. A built up business relationships with several importers in New York, Miami, and California. He is now working on developing an overland route through Mexico to ship into McAllen, Texas, and from there to midwest markets.

Sr. A's contacts with stateside brokers facilitate the access of Company X to needed machinery and production inputs, as these companies help to expedite the purchase and shipping of goods to Sr. A, with the cost of the goods being deducted from the net returns on the brokers' sales of Sr. A's melons.

Sr. A gains access to credit for fixed and working capital from the bank by mortgaging the land of his farm for five years, and using the funds to establish a revolving fund.

On a scale from one (very difficult) to 5 (very easy), Sr. A thinks the policy environment of Guatemala is very difficult. The philosophical attitude of the government is that "everybody is a thief" and this makes it difficult to do business in the country. He says, "I'm not saying that the government's policies are a hindrance but they are a handicap."

Asked why he doesn't expand the production of melons, Sr. A replies that expansion of production depends on the level of market development. Also, he doesn't want to put all his eggs in one basket; thus, he also produces other crops. He says it is better to produce high quality in lower quantity than high quantity in low quality. He would rather ship fewer melons to a market where the price is high than to ship a lot of melons to a market where the price is low.

This, in part, owes to the fact that, at higher volumes, the actual cost of producing melons becomes a very small percent of the total cost of delivering the melons to the consumer. In other words, a major portion of the cost becomes that of shipping the melons, for which there are no economies of scale as compared with those possible by increasing productivity and lowering per unit production costs. Thus, if the price of melons falls in the market, the grower/exporter runs a risk of not making a profit relative to the costs of getting the melons to market.

Asked what is currently the biggest problem facing the business with respect to exporting melons, Sr. A notes that there are two problems. First, the U.S. market is insecure in that the market could dry up overnight if there were any evidence of tampering with melons from Guatemala (e.g., lacing of melons with some contaminant). Second, the changing technology of melon growing in California is redefining what constitutes an acceptable use of pesticides. This process is reducing the range of pesticides approved for use; this, in turn, raises the cost of producing melons for export. This, plus the high fixed costs involved in shipping, makes exporting melons less attractive.

Nevertheless, Sr. A sees potential for expanding production for export to new markets in the U.S., Europe, and possibly Japan, if regulations on import to this latter country are eased. However, a problem in breaking into new markets occurs when there is a lack of consumer acceptance for the type of melons which Sr. A. is growing. Accordingly, he is adapting his planting practices to meet the consumer preference of the European market. The major obstacle, however, in reaching new markets is the distance to the markets and availability of proper, reliable, and timely transport.

Sr. A sees the future export market for melons as positive and does not see the window for selling melons to the U.S. as being small or limited. The window opens, he says, whenever there is a scarcity of melons in the market; and the window's size can be increased by selling through several receivers, and by producing a high quality melon. He says that "quality is defined as what any given market will accept at any given time." If there is a shortage, the market will accept a lower quality melon. If there is a glut in a market, a high quality melon will still be in demand and command a premium price. Yet he always keeps in mind that "it is cheaper to throw a bad melon away here than having to throw it away in the States."

He feels he can export melons from late November to late April and early May, playing the market by keeping in touch with his importers as to projected market conditions. If there is a shortage of melons in the market, he can ship lower quality melons under another brand and/or ease up on quality control during packing.

Sr. A does not feel that he has to compete for the attention of buyers/importers. If you have a high quality product, he notes, buyers will beat a pathway to your fields. He is not currently looking for additional receivers and finds it difficult to say how he would assess the reliability of a potential new receiver. Basically, he says, it comes down to how much you feel you can trust the receiver.

He is currently holding contracts to supply melons to four brokers in four regions. The destination and quantity shipped depend on the market information he gets from his buyers. Sr. A feels that to deal credibly with brokers in the U.S., one must know the "American psychology," that is, know how to deal with Americans; just knowing English is not sufficient.

Over the years, Sr. A has found that experience is the best teacher; he learned the melon growing and exporting business, he says, in the "school of hard knocks." However, Sr. A frequently has hired consultants from other countries. Generally, it is the nature of the problem that determines where he will look for consulting help. At the same time, Sr. A notes that he carries on an adaptive research program. "We grow slowly," he says, "because we do our own experiments. We can't count on the government."

The records of USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project indicate that PROEXAG has played an active role in helping Sr. A to make contacts with, evaluate, and negotiate potential deals with melon buyers (e.g., developing a contact with SunWorld as a source of seedless watermelon seed).

Organizations seeking to promote the development of melons need to work on raising the consciousness of growers about the need to produce good quality in order to get return buyers. "The damage done by a bad melon is greater than the good done by a good melon." The melon producer needs to learn that "you don't sell once, you sell over a long period of time." Melon growers can prosper, Sr. A says, by improving the quality and productivity of the melons they produce. The key factor that buyers are looking for is consistency in the quantity and quality of melons that the grower can supply, and how long the grower can provide consistent product.

Sr. A stresses the need to keep export promotion organizations in private hands and out of the hands of the government; he stresses the need to train more people in how to grow and market melons.

PROMOTORA AGRICOLA BASICO LTDA./CHIQUITA^{1 2}

Promotora Agrícola Básico (Básico), a subsidiary of United Brands (Chiquita), was started by John Guy Smith³ in 1972. However, in 1980, Smith sold Básico to Chiquita. At the time, Ricardo Frohmader⁴ was general manager of PATSA⁵, Chiquita's Honduran affiliate. During the early 1980s, Chiquita ran into problems producing and/or exporting melons from Guatemala and Básico was shut down.⁶ After the Básico shutdown, Frohmader's duties at PATSA were expanded to include managing a melon production contract with several Guatemalan farmers who were growing melons for Chiquita. After an interim period (12/83-1/85), during which Frohmader worked for CAPINC⁷, Chiquita rehired him as Director of Sourcing in February 1985; it was during this period that Chiquita made a decision to station a full-time manager in Guatemala.

Accordingly, in 1986, Frohmader hired Dale T. Krigsvold⁸ to come to Guatemala to restart and manage Básico. Chiquita already was managing contracts with and providing technical assistance to two large Guatemalan farmers who were growing melons for export. The job of Krigsvold was to take over management of these contracts and increase the number of farmers, particularly small farmers, growing melons for Chiquita.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Dale T. Krigsvold, general manager of Básico.

³See biography on John Guy Smith.

⁴See biography of Ricardo Frohmader.

⁵See case study of Productos Acuáticos y Terrestres, S.A. (PATSA).

⁶Ricardo Frohmader (personal communication) reports that Krigsvold was the first to say in the 80/81 season that a virus was causing problems in melons. This virus was a contributing factor in the decision to shut down Básico. Krigsvold was working at that time in Chiquita's banana research facility in La Lima, Honduras.

⁷See case study CAPCO, S.A.

⁸Krigsvold was trained as a plant pathologist. Earlier in his career he had worked with United Fruits' banana research station in La Lima, Honduras. When the company shut this station down in the early 1980s, Krigsvold took a job with Winrock International in Bangladesh.

Before each season, Krigsvold contracts with farmers to produce melons for Chiquita. Básico only buys melons from farmers who grow under contract with Básico; melons are never purchased on a "spot" basis in the local market due to quality problems (e.g., the possibility of pesticide residue). Nor does Básico produce its own melons, thereby avoiding taking the full risk involved if Chiquita were to both grow and export melons. In other words, production and marketing risk is shared between the farmers and Básico.

Básico exports both cantaloupe and honeydew, and only cantaloupes that have received proper post-harvest handling (i.e., pre-cooled within a short time of being harvested) are accepted for export. In the last four to five years, farmers growing cantaloupe have changed from open-pollinated varieties to hybrid varieties. The hybrid variety produces a melon that is firmer but which has less of a cantaloupe taste. This type of melon was developed for improved shipping quality.

At the time Chiquita bought Básico, the company already had years of experience exporting banana. During the 1970s, Chiquita made a corporate-level decision to push for a more diversified product line in tropical fresh fruit. Chiquita already was diversifying its product line in Honduras, where the company had started, in the early 1970s, a subsidiary (PATSA). PATSA had achieved a measure of success in exporting melons. Thus, the decision to export melons from Guatemala basically was a decision to build on a company strength and a strong export market for melons.

The following provides information on the level of exports over the last three seasons:

<u>Season</u>	<u>Boxes Exported</u>
86/87	123,000
87/88	254,000
88/89	655,000
89/90	745,000 (est.)

During each of these seasons, both cantaloupe and honeydew were exported. Krigsvold reports that climatic factors (e.g., too much rain) have kept the level of exports of melons at about 85% of projected levels. However, with cotton prices down in the south of Cuatemala, farmers have had an incentive to plant an alternate crop. The farmers are interested in the possibility of growing melons because of Chiquita's interest in exporting melons and the farmers confidence that Chiquita is a company they can trust. As a result, production of melons increased as new growers contracted with Chiquita and old growers brought new land into melon production.

While Básico provides partial loans to farmers against their earnings from melons exported by Chiquita, Básico will not loan all the money growers need because of the risk to Básico and Chiquita. Básico does obtain local currency (Quetzales) loans to assist in expanding operations. However, because money is very tight and the banks are very conservative (requiring double collateral in land, buildings, etc.), it is difficult to obtain loans for fixed capital investments.

Krigsvold notes that it is almost impossible to obtain loans for working capital; this used to be possible but some banks got burned. In Honduras, A.I.D. put money for production credit into the country's development bank. The bank agreed to work with PATSA to provide growers production loans (financed by A.I.D.), with PATSA paying back the loans before paying the growers for the melons they had exported. This model has not functioned in Guatemala because A.I.D. money goes to cooperatives and not to private growers.

Chiquita generally purchases melons from growers on a fixed price basis. But, during this past year, two growers sold their melons through Chiquita on consignment. They were not fully satisfied with the arrangement because their melons hit the market at a bad time (i.e, prices were below what growers could have received had they decided to sell to Chiquita on a fixed price basis). Other than this instance, growers have generally been, in Krigsvold's view, 85-90% satisfied with Chiquita's marketing of melons, the 10-15% dissatisfaction reflecting concern that Chiquita sometimes is not able to move the melons fast enough to ensure top quality or to hit the market in time to earn top dollar.

There has not been a more rapid expansion of land planted to melons because of limited transport availability. Many growers prefer to market their produce through Básico because of the company's access to Chiquita-owned transport facilities. Also, the number of hectares (ha.) planted to melons is a function of the demand, with orders received by Chiquita sales agents becoming market signals guiding the quantity of melons that Chiquita seeks to source through contracts with farmers.

Básico is facing three major problems: (1) with rising transport costs relative to market prices, how to make a profit within an acceptable level of risk; (2) with increasing restrictions on the use of pesticides and the number of legal options decreasing, how to control pests; and (3) with continuous production one year to the next, how to control the spread of virus problems. Also, Guatemala growers are facing a problem that growers in other countries benefit by subsidies (e.g. the CAT in Costa Rica).

Krigsvold sees potential for the expansion of melon exports to Europe (in terms of both volume and variety of melons). Chiquita also is working to get permission to ship melons to Japan from Guatemala (Chiquita already is sending melons to Japan from Mexico). However, the principal constraint to expanding exports is the length of time it takes for transport to reach the market. Another important factor is consumer acceptance of the type of melon that can be exported to the country of consumption.

Another avenue of expansion for Básico would be to capture the production of other growers and to sell through an increased number (3 or 4) brokers, each of whom would have its own outlets. This latter option, however, is not feasible for Básico because the firm, being owned by Chiquita, sells only to Chiquita. However, Krigsvold notes that organizations like PROEXAG can play a very important role in helping buyers/importers in identifying potential growers/exporters. He also notes the utility of an export data service called DATEX.

Reflecting on the relative importance of six criteria that may be used by buyers/importers in selecting growers/exporters, Krigsvold suggests the following ranking of importance:

1. Quality of the product;
2. Price of the product;
3. Consistency in providing quality and desired quantity;
4. Quantity;
5. Ability to supply product in time of shortage; and
6. Length of time during which product can be supplied.

Generally, Krigsvold reports that Básico has not had difficulty in obtaining technology, technical assistance, or information needed by the firm. He reports that he did have some problems in obtaining historical price trends in potential markets but that he was able to obtain this information from USDA and Chiquita statistics. Generally, he has found his most useful information sources to be the following, in order of importance;

1. Krigsvold's ex-boss (Ricardo Frohmader);
2. Files of United Brands in La Lima (Honduras) and Cincinnati; and
3. Other exporters.

He reports that he has made use of the post-harvest handling and marketing specialists of USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project. When asked how organizations such as A.I.D. could be more helpful in providing information useful to exporters, Krigsvold replies that A.I.D. could really assist exporters by doing more to help the small farmer in the private sector and cooperatives in obtaining financing for their operations. Generally, Krigsvold feels that A.I.D. is working along the right lines in supporting initiatives such as PROEXAG and producer organizations (e.g., the GREMIAL). In the area of assistance to the development of cooperatives, Krigsvold feels A.I.D. has not been as successful.

The successful development of other non-traditional crops will very much depend on the extent to which this is pushed by private enterprise. Generally, Krigsvold observes, the melon business in Central America has basically been an initiative of private enterprise, driven by private enterprise, even where A.I.D. has assisted. But projects like PROEXAG can help if their staff have production and marketing expertise, and if they maintain a realistic view of life--what is feasible, what the market will accept. Assistance to cooperatives can play a role where members are willing to work together, but such cooperation can't be forced, it must be internally generated. A.I.D. needs to reassess its support for cooperative development, either making the needed adjustments in the program or terminating support altogether. Finally, there is a need to foster the development of trained personnel within the university so that they can give practical research services to support the technology and information needs of growers of non-traditional export crops.

CAPCO S.A.^{1 2}

CAPCO, S.A. was started in Guatemala by Dave Warren during 1976. Prior to this, Warren had worked for four years (from 1972) on a personal services contract with A.I.D./ROCAP in Guatemala. His work focused on developing non-traditional agricultural export (NTAE) crops (fresh fruits and vegetables). ROCAP wanted Warren to go to each of the countries in the region to develop contracts for growing and exporting NTAE crops. However, Warren had reservations about the viability of such an approach given the complexities involved in growing and exporting crops successfully. His own view was that someone first should prove that a given crop can be successfully grown and exported on a limited scale. If this can be proven, then the venture can be expanded. Warren decided to take on this challenge. When his contract with ROCAP ended in 1976, he started CAPCO in Zacapa (in northern Guatemala) to grow melons and export them to the States.³

Earlier in his career Warren owned three produce companies in the U.S. northeast (Providence, Rhode Island; Boston, Massachusetts; and Hartford, Connecticut). He had retired but subsequently was persuaded by ROCAP to come out of retirement to work with ROCAP. But he had been frustrated in his position with ROCAP. For one thing, at the time A.I.D. prohibited travel outside Guatemala City. But Warren would rent a car on the weekends and travel to production zones such as Zacapa. Eventually, he decided that, rather than working within ROCAP to stimulate market development, he would go out and do it on his own.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Garrett DenBleyker, general manager of CAPCO, S.A., and Dave Warren, President of Central American Produce, Inc. (CAPINC).

³Warren played a major role in getting the U.S. to lift the duty and the Mediterranean fruit fly ban (imposed in 1975) on the import of melons to the United States. While working with ROCAP, Warren visited Holland to seek out an expert on cucurbits (melons, cucumbers, and squash). The expert provided scientific testimony that there was no evidence that cucurbits are a host to the medfly. Warren persuasively argued that the duties on melons unnecessarily raised melon prices to an extent that was unfair to the American consumer and the Central American melon grower. In March 1977, the U.S. lifted both the duty on melons and the medfly ban on melon imports.

Warren conducted melons trials during the 74/75 and 75/76 seasons, with the objective of nailing down the technology needed to grow melons in Zacapa. Warren worked closely with an agronomist on loan to Guatemala's Agricultural Science and Technology Institute (ICTA from a U.S. university. Trials were conducted both at ICTA's experiment station and subsequently at the farm level. To facilitate adaptive research and the transfer of technology to growers, Warren hired ICTA agrónomos (agronomists) to work part-time.

To be able to export melons, Warren needed access to a packing shed in Zacapa. He saw that he could gain such access via a facility previously used in a failed private sector venture to freeze yucca and meat. ICTA had gained control over the plant and had rented it to a co-op (La Fragua) for a cucumber exporting project financed by USAID/Guatemala. But the project already had lost 1 million Quetzales.

Under the arrangement that Warren worked out with the co-op and the growers, Warren would sub-lease the packing plant from the co-op for the packing of melons. Warren would buy melons from growers on a low fixed price, and would cover all of the costs involved in packing, exporting, and importing the melons. To get the melons to the U.S., he contracted commercial carriers such as CCT and SeaBoard. The melons were loaded on refrigerated trailers; these trailers were then hauled to port, loaded on ships, transported to Miami, offloaded, and hauled to Pompano Beach by a local transport company.

Once the melons had been shipped from the Guatemalan port, Warren flew to Florida (where he had a home in Hollywood) to receive and broker the melons. If storage was required, Warren would contract commercial companies (e.g., Green K in Pompano Beach) for warehouse space. Working out of his garage for several years (into the 1980s), he actually went around and promoted sales to potential buyers. As sales were made, Warren arranged and paid for trucks to ship the melons to the buyer's destination. Then, after the melons had been sold, he would deduct incurred costs and split the profits 50/50 with the growers. The first year that Warren operated on this basis was the 76/77 season, with about 12 to 16 farmers growing melons, some farmers being co-op members and some being independent growers.

To further develop the production technology for growing melons, Warren hired an outside consultant, Dr. Mayo Correa, a plant breeder from Texas A&M University. Much of the melon trials that the earlier mentioned U.S. university agronomist had conducted actually were varietal trials being developed by Dr. Correa. One of the varieties developed by Dr. Correa was a cross between the Tamdew (also developed by Correa) and the Cassaba. Warren named this cross the Mayan Sweet, a play both on the breeder's name (Mayo) and the Mayan Indian. (This is Chiquita's "Honeyismist.")

In December 1979, Warren hired Garrett DenBleyker to be packing shed foreman.⁴

⁴Denbleyker, the current general manager of CAPCO S.A., was born in New Jersey and raised in Rhode Island. He studied resource management at the University of Rhode Island. In 1974, he joined the Peace Corps. After training in Costa, Rica, where he learned basic Spanish, he served two years as a Volunteer in Nicaragua, working in basic research (corn, beans, and vegetables) and doing extension work for a local bank and the Ministry of Agriculture. He learned to speak Spanish fluently by living with the Nicaraguan people and not speaking English. When he completed his two years of service, he stayed on six months with the Peace Corps as Program Manager for Agriculture and Resource Management. In 1977, he went to work with INCAE in Nicaragua as a case writer.

When the Sandinista Revolution broke out in 1979, DenBleyker and his Nicaraguan wife were evacuated to Panamá. For the time being, he sent his wife to live with his mother in Florida and he began looking for a new job. Getting low on money, DenBleyker remembered that, just before the revolution had broken out, he had given his last pay check to an INCAE colleague (a Guatemalan) who had gone to Guatemala to cash the check but had not, because of the revolution, been able to return to Nicaragua. This man also had been the best man at DenBleyker's wedding.

So DenBleyker decided he would go to Guatemala to claim the \$500 from his paycheck. In Guatemala, the "best man" had two brothers-in-law who were growing tomatoes in Zacapa. On a previous trip to Guatemala, DenBleyker had visited them and had provided technical assistance on tomato growing. These two Guatemalans had a third partner, an ex-Peace Corps Volunteer from Nicaragua. One thing led to another and DenBleyker became the fourth partner in the venture. One partner had gone to the States to buy a precision planter for the direct seeding of tomato. At the time, Dave Warren of CAPCO had learned, through his contacts with ICTA, of the tomato work and approached the partners to ask if the planter could be adapted to plant boiler onions. The partners felt that this would not be a problem, only that some adaptation of belts and openers would be needed. Warren purchased the needed equipment and the partners adapted the planter; then they started planting onions as growers for Warren and providing planting services for other onion growers.

Subsequently Warren offered DenBleyker a job as packing shed manager. At the time, the tomato venture had run out of capital and the other American partner had returned to the U.S. The bank repossessed two tractors on which the Guatemalan partners had not paid a loan (because they had lost a lot of money trying to grow cotton on Guatemala's south coast). So DenBleyker decided to start working for Warren.

As Warren moved into that third season (79/80), CAPCO's growers were raising cantaloupe, honeydew, Mayan sweet, and boiler onions. But the plant's cooling facility was not designed for cantaloupe, and Warren had not been able to get it to operate properly. By 1981, Warren gave up on trying to export cantaloupe and decided to concentrate on honeydew and Mayan sweet.

But there also were production problems in the field. DenBleyker recalls that, by January 1979, few, if any, melons were coming out of the fields, indicating some type of production constraint. Warren contracted Dr. Correa to come to Guatemala to take a look at the fields. Correa observed many production problems (e.g., one of the problems was that the farmers were placing the melon seed deeper than the fertilizer). But ICTA's agronomists didn't take to Correa's constructive criticism about their practices for growing melons. After Correa's departure, a falling out occurred between Warren and the agronomists; Warren turned to DenBleyker and asked him if he would also like to be in charge of production.

DenBleyker accepted this position but found ICTA's agronomists were not willing to follow Correa's recommendations. In the midst of planting melons in January, Warren fired the ICTA agronomists. However, the changes in production practices resulted in a doubling of production, with bigger size melons, this in part because of good weather (rain at the right time).

Warren and DenBleyker continued to make adaptations in the technology during the following season. Over the summer (1980), they made a trip to look at melon production areas in California, Arizona, and Texas. Based on their observations, they made changes in production and packing practices. For example, for the 80/81 season, CAPCO's growers began to use machine planting, and this technology spread to other growers over the years. With the adoption of more expensive hybrid seed since 1985, there has been a return to hand seeding to ensure more precise seeding (i.e., one seed per hill because of the high cost of seed). Also, CAPCO began to use mechanical sprayers as opposed to back pack sprayers. These examples illustrate ways in which CAPCO continually has adapted melon production technology over time. Some technological changes were innovations. For example, CAPCO developed an offset planting system. With the scarcity of water, this offsetting keeps each plant closer to the irrigation furrow.

In late 1984, Othal Brand of Griffin and Brand, McAllen, Texas, visited Guatemala. Wayne Showers, a Griffin and Brand employee, had gone to school with the Guatemalan who at the time was the Minister of Agriculture. The Minister of Agriculture gave Warren a 30 day notice to evacuate the packing plant because the government was going to turn the plant over to Griffin and Brand. But Warren managed to get an extension to allow CAPCO to finish packing the melons already planted (the December-January harvest). This incident made Warren realize that he had to make a capital investment in his own packing facility. He bought land and built his packing shed, and had it up and running by the harvest of March 1985.

For the following year (85/86), Warren decided to get back into growing cantaloupe for export. He bought a cantaloupe packing line (cleaning, waxing, grading,) from Southern Automatics (in Florida) and bought a slush ice machine (from Semco in Texas). With white melons (e.g., honeydew), Warren's workers often didn't finish packing some nights until 5:00 a.m., because they didn't have enough space. So he built a large packing shed that would allow more mechanization and two packing lines.

The switch to the new hybrid varieties exposed the growers to new production problems. Dr. Correa had been very helpful to CAPCO in terms of introducing new varieties and overcoming production constraints. But Warren felt that CAPCO's growers needed more specialized knowledge than could be provided by one expert. In December 1983, Warren hired Ricardo Frohmader (who had been the general manager of PATSA in Honduras) to be a technical advisor to CAPCO in Florida. Frohmader established a system to provide the growers with access to specialized expertise in the form of a soil scientist (Dr. Wolf), an entomologist (Dr. Simons), and a plant pathologist (Dr. Cox). This team of specialists began visiting Guatemala during the 84/85 season, sometimes as a team, sometimes individually. Generally, before the start of each season, a plan would be developed outlining a schedule of visits. But the specialists also could be called in on demand as special problems arose.

Other technological changes in packing were introduced once CAPCO began to pack cantaloupe in a new packing shed during the 85/86 season. When CAPCO began packing cantaloupe in slush ice, it was found that the wire-bound boxes CAPCO had been using couldn't keep ice in a box. This forced CAPCO to switch over to a waxed cardboard box, with small drain holes. CAPCO went through trials with four different box designs (e.g., hole placement location) before developing the right box.

In 1985, hybrid cantaloupe varieties started to become available. These melons provided a better fruit set (i.e., more fruit per plants) and higher yields. But the problem of high production levels reached a point that the workers in the packing line didn't have adequate space to put all of the melons that were rejects. This led Warren to make a deal with the growers, where the rejects would become CAPCO's property in exchange for not charging growers for certain services. For example, the going rate on beehives was 40 Quetzales per beehive per manzana. Under the arrangement, whereby CAPCO became the owner of the rejects, CAPCO provided the grower with free access to the beehives which remained the property of CAPCO. Also, the cost of freight from the grower's field to the packing was absorbed by CAPCO. This gave CAPCO better control over the whole process of coordinating the harvest and transporting the melons from the grower's field to the packing shed. CAPCO would sell the melons to a local freezing plant to compensate for expenses incurred by providing the free services to farmers.⁵

During the 88/89 season, CAPCO went to palletizing, with each pallet containing one size of melon. The use of pallets makes it possible to unload a trailer in 40 minutes rather than 3 or 4 hours. CAPCO hopes a palletization technology can be a point of negotiation with the shipping lines. With the reduced time it takes to unload a trailer in Pompano Beach, it is possible to get a refrigerate container ("reefer") back to a ship before it leaves port. If this can be achieved, an importing operation would need only two reefers rather than three.

While CAPCO started with 12 to 16 growers, the firm now works with 47-48 small growers (up to 7 mza.), 8 mid-size growers (20-40 mza.), and 2 large growers (100-125 mza.). The cost of technical assistance to growers is an important factor. Where two technicians can cover 100 mza. spread over 40 growers, one technician can cover 250 mza. spread over two growers.

⁵CAPCO found that the packing plant cannot operate efficiently if rejects start to get in the way. If growers retain ownership of rejects, there may be delays in getting the rejects out of the way. Growers become more conscious of their reject sales than their export sales. Often they feel they don't have anyone that they can trust to handle their reject sales. As a result, growers would spend all day trying to sell their rejects instead of spending the day in the fields, where they are needed to supervise management of the crop that is being harvested or which is still in production. Where production and harvest were not properly managed, CAPCO found that the reject rate rose from 10% to 25%. Consequently, CAPCO now requires, as a condition of the grower's contract, that rejects become the property of CAPCO.

With larger growers, CAPCO operates on a joint venture basis, paying the grower a lower fixed price (e.g., \$4.00) but splitting the profit 50/50 on returns after marketing costs. With smaller growers, CAPCO pays a higher fixed price (e.g., \$6.00 per box). The largest grower deals directly with Dave Warren's U.S.-based marketing firm, Central American Produce, Inc. (CAPINC).

To supplement this brief history of the development of CAPCO S.A. in Guatemala, it is useful to outline Dave Warren's philosophy on the development of NTAE crops. First, to develop these crops, the investor/grower/exporter must identify the complete system in which the crops are to be grown and marketed, the production and marketing problems or constraints in the system, and how these are to be overcome. The investor/grower/exporter needs to list all the steps required to produce and market the crop, and identify all of the problems that can arise. These steps are like the links in a chain; if any one link is broken (i.e., if any step is not completed), the product will not be what it should be on reaching the buyer--and the buyer will not purchase the product. Further, the investor/grower/exporter must remember that each crop is produced in a specific micro-climate and that the micro-climatic conditions will vary from one production site (region) to another, even within the same farm (e.g., variation in soils within the same field). The problems on the marketing side (e.g., transport) must also be addressed.

Developing a NTAE crop requires not only top-notch technical people and appropriate machinery, it also requires a heavy financial commitment. Thus, a mistake can lead to a production disaster or a marketing catastrophe--in either case to financial ruin. Hence it is essential that the investor/grower/exporter start on a small scale, prove that the technology works for a given crop, and prove that a product of acceptable quality can be delivered to buyers in a destination market. Once these conditions have been met, then it is time to expand operation and make the business grow.

Despite all of the potential problems, all of which are of much greater magnitude than faced by any investor/grower in the U.S., Warren feels there is great potential for NTAE crops. But reaching this potential depends on whether investors/growers/exporters can deliver an excellent product at the final destination.

PRODUCTOS FRESCOS S.A.^{1 2}

Productos Frescos S.A. is a private venture started by Chuck Chambers, a retired U.S. civil servant (Chambers had been working four years as an administrative officer in the U.S. embassy in Guatemala).³ As retirement neared in 1976, he made a decision to "retire" in Guatemala. On retiring, he worked for a food service operation that catered the oil fields in the Petén. On the side, he started growing tomatoes for export. But, after a year, his exporting venture was hit by the Mediterranean fruit fly (medfly) problem. He continued to work in the catering business until 1981, when he took a contract with Texaco to cater oil camps in Ecuador. He worked in Ecuador from 1981 through January 1984, at which time he returned to Guatemala.

In 1984, Chambers started an ornamental plant business with a Guatemalan partner. The company was looking to expand and decided to get into exporting melons ("because [one partner] happened to have a little expertise in the field").⁴ The partners started growing melons in 1984 but, after one year, there was a falling out and the Guatemalan partner left.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Chuck Chambers, president of Productos Frescos S.A.

³Chambers is originally from Louisiana. He started to study business administration at the University of Maryland but, before finishing, joined the Air Force. After basic training in Texas and flight schooling in Wyoming, he was assigned to Spain. There he learned to speak Spanish, while continuing to take college courses by correspondence. When he had accumulated enough credits to be eligible for a transfer to Germany, he moved to Germany, where he finished his degree at the University of Maryland's extension campus at Heidelberg. Then he went back to Spain to finish his tour of duty. One day he saw an ad in the Stars and Stripes for the Foreign Service exam. He took the exam, passed it, and was admitted to the Foreign Service. During his career with the Foreign Service, he served in Germany, Italy, Thailand, Viet Nam, Turkey, and Guatemala.

⁴The Guatemalan partner had grown melons off and on over the years, growing for other companies (MAMSA, no longer exists; never to Chiquita or CAPCO).

Chambers' first season on his own as a melon grower was the first season of 85/86, there being two distinct seasons per year in Zacapa.⁵ He planted 130 manzanas (mza.) of Mayan Sweet. That first season Chambers shipped boxes of 37,000 melons to a Florida broker (Tavilla). Chambers had met John Williams, a Tavilla broker, at the Caribbean Basin Initiative (CBI) meeting in New Orleans in August 1985. Chambers had set up a booth on ornamentals at the meeting. At the time, most ornamentals were being exported to Europe, and Chambers wanted to get into the U.S. market. Thus, at the CBI meeting, Chambers was looking for a broker and went by Tavilla's booth. Chambers didn't firm anything up at the meeting, not until he came back and put the deal together. Tavilla provided a \$50,000 advance for boxes and Chambers exported the melons to Tavilla on consignment. The yield that first season, Chambers recalls, "was awful."

Chambers accessed the technology for growing melons by hiring two agronomists who had a good background in growing melons. One was working for Chiquita (Básico), the other for CATISA (the melon exporting operation of Carlos Jirón). The biggest problem that first year was that everything was too undercapitalized and too hastily done. Chambers had to rent all the land preparation equipment. For his packing shed, he purchased a shed that was already on a nearby site. Because he was growing Mayan Sweet for export, he did not need pre-cooling technology.

For the second 85/86 season (beginning in January 1986), Chambers planted 150 mza. and exported 66,000 boxes of Mayan sweet. Yield had improved because of better technology. Also, Chambers had bought some cultivation equipment that allowed him to get into the fields sooner than otherwise would have been the case. He again exported to Tavilla, and continued doing so until 1989.

86/87 (Season 1): This was the first season that Chambers produced both Mayan Sweet and cantaloupe, the latter planted in a very small quantity, more as trial to see if he could handle both growing and packing this type of melon. He built a pre-cooling unit--using bulk ice that would melt and drip over cantaloupe that had been packed in wooden crates. He shipped via one or more of the commercial carriers (CCT, Sea-Land, and SeaBoard). Going into the season, he informs these companies of estimated transport needs; about a month before harvest, he gets back in touch with the companies to reconfirm his transport requirement.

⁵The average start of planting for the first season is September 1 through October 15-20, with harvest starting the first week of November through December 15-20. Planting for the second season extends from January to the end of February, with harvesting done by the first week of May. Everything depends on the weather and what happens in Texas (in terms of the weather there).

That season Chambers planted 200 mza., about 150 mza. to Mayan Sweet, 50 mza. to cantaloupe. He shipped 80,000 boxes of Mayan and 15,000 boxes of cantaloupe. Yields of Mayan were up to 550-560 boxes per mza, with about 400 boxes per mza. of cantaloupe. The smaller-sized cantaloupe require more melons than the Mayan to fill a box, hence fewer boxes per mza. of cantaloupe.

86/87 (Season 2). This season Chambers planted 200 mza. of Mayan but no cantaloupe. His yields was 111,000 boxes per mza. With a yield of 550-560 boxes per mza.; Chambers recalls that this was "the best year we ever had."

87/88 (Season 1): During the off-season, Chambers bought a slush ice machine. Asked how he acquired this technology, he chuckles: "When CAPCO wasn't around, I learned."⁶ With this improvement in packing technology, he planted 200 mza., 120 mza. in Mayan and 80 mza. in cantaloupe, and exported 65,000 boxes of Mayan and 30,000 boxes of cantaloupe.

87/88 (Season 2): Chambers again planted around 200 mza., with about 120 mza. in Mayan and 80 mza. in cantaloupe. That season he exported about 70,000 boxes of Mayan and about 30,000 of cantaloupe. He got his Mayan yield up by switching from using solely a commercial foliar; he started mixing in some Potassium Nitrate and urea. As a result, he wasn't losing as many flowers and got a better fruit set.

88/89 (Season 1): Asked about how this season went, Chambers replies: "That's when we learned about the melon business. It's not all profit and gain." He planned to plant 300 mza. but, due to an extended rainy season, the season soon was half over and only 180 mza. had been planted. By early September, Chambers had only been able to plant 28 mza. of cantaloupe, and was not able to plant again until October 8.⁷ He recalls saying to himself: "I'm getting my graduate degree right now. Once in the ground and planted, you can fight everything else. But if you can't prepare the land, you can't plant."

That season's yields were very low and he exported only 24,000 boxes of cantaloupe and 32,000 boxes of Mayan. Chambers grimaces: "I don't care to think about it now. It was awful. [The fields were so wet that] I was fertilizing with a stick in my hand." While the fields can be irrigated by gravity flow, he jokes: "That season we didn't have to use a lot of that."

⁶See case study of CAPCO S.A.

⁷PROEXAG's John Lamb notes that Frohmader had advised Chambers not to plant in Zacapa after October 6.

88/89 (Season 2): Chambers was still packing melons from the first season into January 1989 because much of the land had been planted so late. For the second season, he planted about 210 mza.--about 80 mza. to cantaloupe and 130 mza. to Mayan. But that season he lost 35 mza. of plants to the cold, diseases, and other problems. In February 1989, the temperature dropped to 9° Centigrade, a circumstance no one could remember ever having happened. He exported 53,287 boxes of Mayan and 12,588 boxes of cantaloupe.

Up to that point Chambers had only exported to Tavilla. However, with the two bad crop seasons in a row and the resulting losses, Chambers' company had come to owe Tavilla so much money that, in Chambers' words, "they couldn't afford me this year." Given that the melon growing and exporting business is a highly capital intensive operation, Chambers knew that he would need financial support.

Chambers had known Dave Warren and Garrett DenBleyker of CAPCO for several years, CAPCO's packing shed being about 6-8 km. from Chambers' shed. He had thought before about the possibility of growing melons for CAPCO, having kicked the idea around a time or two with DenBleyker, but had never really warmed to the idea. Perhaps, he says, "I wanted to be independent." However, the key factor in changing his mind on this count was a severe capital constraint going into the 89/90 season. It was, he said, impossible to get any financial backing from a local bank.

This led Chambers to strike a deal with Dave Warren (CAPCO), whereby Chambers will export his melons on consignment to Warren. Any technical assistance that he will require will be available from Garrett DenBleyker. Asked if CAPCO has sent down any of the consultants that Warren keeps on retainer (i.e., any of the famous "los tres sabios"), Chambers replies: "Not yet. They don't want to get wet." Her Chambers is referring to the start of the first season as having been very wet. He had planned to put in 126 mza., with 80 mza. in cantaloupe and 46 mza. in Mayan. But to date he has only been able to plant 36 mza., 23 mza. to Mayan and 13 mza. to cantaloupe. He will sell on a fixed price basis, delivered to CAPCO's packing shed, with Warren assuming all packing and subsequent costs. Upon sale of the melons, Warren will deduct a 12% commission, and will split any remaining profit 50/50 with Chambers.

Chambers notes that the biggest problem in trying to be a local businessman in Guatemala is the difficulty in raising local capital. Also, technology is also nonexistent unless one imports it from the States. "Of course," he says, "in the private community we help each other. I found this out. There is no help from the government."

Chambers indicates that he has not received any assistance from USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project, although PROEXAG's John Guy Smith notes that Chambers has maintained contact with the PROEXAG marketing specialist (Ricardo Frohmader) and post-harvest handling specialist (John Guy Smith).

While Chambers is committed to bringing in a crop during this first season of 89/90, he shut down his packing shed completely, since he will be trucking his melons directly to CAPCO's packing shed. At times, he says, "I'd really like to sell this place." But, having married a Guatemalan in 1978, he now views Guatemala as his home. He does mention that he's been talking with one broker in the U.S. about the possibility of exporting melons to the European market. Asked who this broker is, he replies that it is a broker in California.

Asked if this broker might be Lindemann Produce, he replies that it is not. He pauses. "You know," he says, Lindemann has wanted for a number of years to get into melon production in Guatemala. Maybe I'll call him on the phone."

The story of Productos Frescos and Chuck Chambers is instructive because it illustrates the tremendous difficulties the small entrepreneur faces in trying to start up a successful exporting operation in a non-traditional agricultural export crop such as melons. The grower/exporter faces many risks--including the weather, the market, and trying to launch an independent business when the business is not adequately capitalized and there is a lack of local sources of credit.

What will become of Productos Frescos? Will it be absorbed by CAPCO or will Chambers sell out to another firm such as Lindemann Produce? Or perhaps Chambers will overcome the capital shortage he faced this year, generating sufficient 89/90 returns to allow him to be able to reopen his packing shed and export directly to a broker such as Tavilla.

When the purpose of the interview was explained to Chambers, he replied: "If you are supposed to interview successful exporters, I don't know why they sent you to talk to me." But how does one measure success? As may be seen in other case studies appearing in this report, others such as Sr. A, John Guy Smith, or Ricardo Frohmader initially failed in trying to grow melons for export. But their eventual successes, either individually or as employees of a firm (e.g., United Fruit's PATSA in the case of Frohmader in Honduras), suggest that overcoming failure is an important step in achieving success.

In other words, the cases of Productos Frescos in Guatemala, Tico Melon in Costa Rica, and the cooperative COAGRAVAL in Honduras illustrate that, despite the various successes achieved to date in developing melons as a non-traditional export crop, success is still not easy to come by. There always is a risk of failure, particularly where a grower still must overcome the same problems that faced the melon pioneers nearly 20 years ago. Such problems include nailing down the technology to be used; getting adequate credit to finance all of the capital that is required; getting the melon seed in the ground and the melon plants safely to harvest despite the many risks that derive from the weather, pests, and diseases; linking up with honest broker; and making a profit in today's marketplace.

COSTA RICA

DESARROLLO AGRICOLA INDUSTRIAL S.A. (DAISA)^{1 2}

The possibility of growing melons for export in Costa Rica was investigated as early as the season of 65/66, when Roberto Gurdian and William Wilbank conducted melon trials in Punta Arenas and Guanacaste. Then, in 1979, a semi-autonomous organization, Desarrollo Agrícola Industrial S.A. (DAISA) was established as a subsidiary of CODESA (Corporación Costarricense de Desarrollo S.A.), a governmental agency. The objective of DAISA was to give an impulse to the planting and export of non-traditional crops such as melon, pineapple, papaya, and strawberries. With offices in San José and Guanacaste, DAISA's Commercialization Department sought to identify potential markets (buyers).

In 79/80, DAISA initiated its first crop trials with melons for export to the U.S. A total of 70 hectares of melon were planted in two provinces: Guanacaste and Punta Arenas (Paquera). The technology was provided under a contract with a team of Israeli consultants who trained nine DAISA ingeniero agrónomos in production technology, postharvest technology, and machinery operation. One of these agronomists, Claudio Zumbado, would later be hired by CAAP to assist farmers participating in CAAP's melon program.³

DAISA contracted with farmers to produce the melons and supplied them with technical assistance and inputs, while the farmers provided the land, labor, and equipment. DAISA received the melons produced by the farmers and handled all phases of packing, transporting, exporting, and selling the melons. In turn, DAISA paid the farmers. Among the first firms to buy melons were Dave Warren's CAPINC⁴ and Sun World.

But the Israeli technology did not give the expected results in terms of productivity, with yields being relatively low. Also, the export results were disappointing, with melons reaching their destinations in poor condition, a result of inadequate postharvest handling. These problems were repeated in the following two seasons (80/81 and 81/82). As a result, DAISA received only partial payment or even no payment for the melons exported.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Claudio Zumbado, an agronomist who worked with DAISA and is currently working with CAAP, a Costa Rican export support organization.

³See Box 1 in case study on Federico Apéstegui.

⁴See case study on CAPCO S.A.

The problem with this approach was that DAISA worked with small farmers--agrarian reform beneficiaries or small farmers who owned or rented small parcels of land (4-5 ha.). If the farmer could bring to the Banco del Estado a contract indicating that DAISA would provide technical assistance and buy the farmer's produce, the bank would provide the farmer with a loan. But none of the farmers, given their limited resources, could afford to suffer losses one year after another.

While some farmers agreed to replant melon in the second season, many opted not to continue and DAISA had to find other farmers to replace them. But when the second season (80/81) also proved a disaster, many farmers decided not to participate any longer and DAISA again had to find replacements for them for the following season. When the venture again failed in the third season (81/82), DAISA was shut down.

JOHN BREALEY ORLICH (FOUNDER OF EXPORPACK S.A.)^{1 2}

John Brealey's grandfather immigrated to Costa Rica from England via Canada. His father and mother were born in Costa Rica, where his father became active in the cattle industry. John's parents sent him to Canada for his fifth and sixth year of grade school. On finishing high school in Costa Rica, Brealey went to the U.S. to earn a B.S. in mechanical engineering at Louisiana State University and a M.S. in thermal dynamics at Duke University. When he returned to Costa Rica, he got a job as a manager of a plant that packed meat for export.

Over time, he developed a desire to get more directly involved in agriculture. In the early 1970s, the environment for agriculture in Costa Rica was favorable. About 1973, he began to work on a part-time basis in farming by renting some land in Guanacaste and planting it to rice. Over time, he began to buy farms which, in turn, he planted to rice. In 1976, he decided to leave his job at the meat packing plant and to become a rice farmer full-time.

Brealey notes that his engineering training, combined with his experience in management, led him to look at agriculture from a different perspective, one emphasizing efficiency. Despite the earlier failure and shutting down in 1982 of a governmental melon exporting initiative [see case on Desarrollo Agrícola Industrial (DAISA)], Brealey, like other Guanacaste farmers, knew that there was a potential to export melons but that there were agronomic problems that had to be overcome to grow melons successfully.

While Brealey grew rice in the rainy (invierno) season (from June to November), growing rice during the dry (verano) season (from December to May) was very difficult. He began to look for a crop that would allow him to make greater use of available land and labor during the dry (verano) season, when the risk of a crop failure increased, unless the farmer had access to water. While investing in irrigation was a potential solution, the farmers needed a crop that would be sufficiently profitable that it would repay the cost of putting in an irrigation system. Could melons provide the solution to the farmer's problem?

In late 1982, Brealey planted small plots to different melon varieties to find a variety suitable to the soils and climate of the Guanacaste region; a total of 69 melon lines (honeydew, cantaloupe, watermelon, persian melon, and others) were tested. Trials were conducted during two seasons--82/83 and 83/84.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by John Brealey, president, Corporación Agrícola Ganadera del Guanacaste S.A.

In 1984, Brealey installed an irrigation system (so that he could plant grains in the verano). Further, given the availability of irrigation, he thought he could increase his profits by planting melons. To test this idea, he planted 70 ha. of his irrigated land to honeydew in the 84/85 season and built a temporary packing plant. But the melons suffered a mildew problem and he lost \$73,000.

Brealey wanted to begin exporting melons during the next (85/86) season. Therefore, during 1987, he and his uncle entered into a partnership to form an export company EXPORPACK S.A., for which he obtained a contrato de exportación (export permit) from the government. To solve the production problems, Brealey hired two agronomists who earlier had worked on DAISA's melon project, one to focus on improving production and the other to manage the packing shed. He decided, based on their suggestions, to change melon varieties and to plant some cantaloupe. These changes, implemented in the 85/86 season, allowed him to increase his melon productivity. During that first year, he exported his melons to International Multi Foods in the United States.

In early 1986, Brealey decided to obtain additional technical assistance on production problems from information sources outside Costa Rica. He contacted a friend (José Amador) in Texas who put him in touch with Dr. Mayo Correa at Texas A&M University (Correa had earlier developed the Tamdew melon.) Correa came to Costa Rica to study Brealey's production problems during the latter part of the 85/86 season.

On the marketing side, Brealey contracted with INCAE in 1986, to conduct a study to identify the best firm in the U.S. to import melons. A list of 56 firms was reduced via a screening process to 7 firms. Brealey went to Florida to meet with representatives of these firms. Based on the firms' proposed terms for importing melons, Brealey decided that the best option would be to work with CAPINC, the company headed by Dave Warren in Pompano Beach (see case study on CAPCO S.A).

Brealey exported to CAPINC during the next two seasons--86/87 and 87/88. His contract with CAPINC provided for a 12% commission on sales, this figure including 2% to cover the cost of technical assistance provided by CAPINC. This assistance was provided in the form of three specialists who came to be known as "the three wise men" (los tres sabios): a soil scientist (Dr. Wolf), an entomologist (Dr. Simons), and a plant pathologist (Dr. Cox).³

³These three specialists had been contracted in 1984 by Ricardo Frohmader, then working for Dave Warren's Central American Produce Inc. (CAPINC) in Florida, to come to Guatemala to assist CAPINC's melon growing operation (CAPCO) in that country with production problems.

The tres sabios came to Brealey's farm for the first time in 1987, after the melons were already planted. They came three times during the season, stayed two days each visit, and followed up their recommendations by phone and FAX. They recommended some changes in the fertilization program that had been earlier established. With this technical assistance, Brealey increased the productivity of his melon fields and began to export melons successfully by the fifth year (87/88).

Thus, over time, Brealey adjusted the technology and increased the area planted to melons, with melons eventually covering half his land, the other half being rice or other basic grain crops. By the 87/88 season, Brealey was planting 260 ha. of melon in a joint venture with his uncle (Antonio Orlich Bolmarcich, owner of El Porvenir farm), with the costs and returns being shared 50-50 between Brealey and his uncle.

In 1988, Brealey and his uncle decided to split their operation, the uncle receiving EXPORPACK and Brealey receiving Semillas del Tempisque, a seed processing operation for rice, corn, and sorghum. El Porvenir and EXPORPACK are now managed by Brealey's cousin (Fidel Tristan Orlich), with the melons being exported to CAPINC. (See case study on EXPORPACK.)

But Brealey did not stop planting and exporting melons. For the 88/89 season, he rented 30 ha. and planted cantaloupe which he sold to United Brands (Chiquita). For the 89/90 season, Brealey plans to plant 100 ha. of rented land to melon which he will sell to Chiquita. He is now in the process of obtaining a contrato de exportación from the government and he is installing drip irrigation. He will plant cantaloupe and use Chiquita's packing plant to pack the melons. Within two years, Brealey plans to plant 200 ha. of cantaloupe under drip irrigation. Also, he is experimenting with other non-traditional crops (bell peppers, okra, chile paprika, and industrial tomato). In fact, he produced some industrial tomato during the 88/89 season for local sale.

Brealey notes that Chiquita traditionally bought melons on a fixed price but now also provides an option for the grower to sell on a consignment basis. Further, Chiquita will ship small melons on a fixed price basis to Europe on banana boats. Also, Chiquita now provides an option whereby the grower can sell two grades of melons in the U.S., thereby reducing rejects.

At least once every two years, Brealey travels to Stuttgart, Arkansas, to look at rice farms and discuss problems with farmers and extension personnel. (Brealey plants approximately 5,800 acres of rice each year.) He recalls that he has seen Central American melons in the Stuttgart grocery stores. Thus, he feels that there is yet a large market for melons in the U.S. and that there is a good future for the melon export market.

However, he is worried that if the government removes the CAT, that compensatory measures should be taken so as not to upset the melon industry's competitive position (e.g., by reducing port charges at Puerto Limon). Also, he recognizes that the smaller grower who doesn't have the collateral needed to obtain a loan from a private bank will have a very difficult time trying to grow melons for export.

While one of the technicians originally hired by Brealey eventually left Costa Rica, the other two technicians are still working in Costa Rica--one as an employee of Chiquita (the packing shed manager), the other as a production specialist for the melon growing operation launched by Brealey. The latter also trained another production specialist and a packing shed manager for EXPORPACK.

EXPORPACK S.A.^{1 2}

José Fidel Tristan Orlich is the current general manager of EXPORPACK S.A., a melon exporting company started by his cousin John Brealey. The idea for EXPORPACK was born during 1984, when Brealey received a request from several growers for assistance in planting melons. Brealey said he first wanted to work out the production problems. Once these were solved and he knew he could export, then he would be willing to work with the growers in helping them to pack and export their melons.³

Tristan is not a Costa Rican; he was born in Louisiana. When he was 8 years old, he came to Costa Rica, where he went to grade and high school. He later attended the University of Maryland, where he obtained a B.S. degree in mechanical engineering. He returned to Costa Rica to work with his family's businesses. After some time, he went to Belize to work on the construction of a meat packing plant; later his employer transferred him to Miami to work on the importing side of the firm. When a relative died, he returned to Costa Rica to work on the family's farm ("El Porvenir"), where he raised cattle and rice.

The "El Porvenir" farm traditionally has been a rice producer, with the farm's production of melons for export having been initiated by John Brealey. The farm has about 1,000 ha, about 400 ha. of which are planted to rice and 300 ha. of which are under a drop irrigation system. In 1988, Brealey and his uncle divided the farm, with Brealey taking Semillas de Tempisque and Brealey's uncle retaining EXPORPACK. That same year Brealey's cousin, Jose Fidel Tristan Orlich, was hired as the general manager of EXPORPACK. "El Porvenir" is the only farm in Costa Rica that is exporting melons to Central American Produce, Inc. (CAPINC) in Pompano Beach, Florida.

Tristan explains that the Central American melon grower's #1 problem is transport. A major competitor, Chile, controls 55% of the available refrigerated transport; as a result, the demand for refrigerated transport is much greater than the supply. Costa Rica has maintained good relation with the marine lines.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by José Fidel Tristan Orlich, general manager of EXPORPACK S.A.

³See case study on John Brealey (founder of EXPORPACK S.A.).

During 1988, the Honduran melon growers had to throw out 30,000-40,000 boxes of melon because there was no transport. Those growers began to look for a way to solve the transport problem. In view of this problem, melon growers of El Salvador, Honduras, and Guatemala formed during early 1989 an "Asociación de Usuarios de Centro America." A subsequent meeting was held in Honduras in July, at which two representatives (Mario Guzman, Alvaro Estrada) of CAAP, a Costa Rican export support organization, participated. Later CAAP organized a meeting of the Costa Rican melon growers and told them what was happening with transport. The melon growers decided to participate and elected Tristan to be their representative in the association.

The motive of the Costa Rican growers was both to support the growers of the other countries and to try to make sure that any solution developed would not result in creating a problem for Costa Rica. Then, in August 1989, the association met in Miami with the Central American Liner Association (CALA, comprised of CCT, Sea-Land, and SeaBoard). Tristan represented the Costa Rican growers at this meeting. The Central American growers were able to convince the CALA to rescind the 12% increase in freight rates that had gone into effect earlier in the year.

EXPORPACK has maintained excellent relations with the commercial ocean freight companies. An estimated 10,000 containers of melon will be shipped to the U.S. from Central America during the 89/90 season (see Table 1). Of these, 2,830 containers will be from Costa Rica, the equivalent of 400,000,000 pounds of melon. Of this total, 1,480 containers will be carried by multinationals (Chiquita and Del Monte) and 1,350 by the commercial carriers.

Tristan points out that "growers who are not efficient are going to start to have problems because costs of transport are steadily increasing." Technically speaking, he says "Costa Rica is better than the other melon growing countries in Central America." For example, EXPORPACK's packing plant has two packing lines--one for honeydew and the other for cantaloupe. Of the area planted to melons in Costa Rica, 80% is under drip irrigation. Costa Rica is taking advantage of the Caribbean Basin Initiative (CBI) to a greater extent than the other Central American countries (as demonstrated by the rapid increases of exports from Costa Rica).

EXPORPACK had problems with distribution of melons in the U.S. in the first two years (about 84/85 and 85/86) of the company's operation, before becoming affiliated with CAPINC. In the face of this problem, EXPORPACK hired a consultant (Alice Howard) to identify a good distributor. She went to the U.S. and identified 200 buyers, of which, after a screening process, the number was reduced to 7, among which was CAPINC. CAPINC offered technical assistance through Drs. Simons and Wolf; and it was the quality of this technical assistance that was 60% of the reason for selecting CAPINC over the other brokers.

Tristan feels that melons have a future "if we are efficient in producing a high quality melon." During the first year (86/87) that EXPORPACK worked with CAPINC, los tres sabios (Wolf, Simons, and another specialist) came once a month. This same pattern was followed in 87/88 and 88/89 (the latter season being the first that Tristan managed EXPORPACK after the departure of Brealey). Tristan understands that CAPINC pays each sabio \$1,000 a month on a retainer basis and pays each specialist's air ticket to and from Costa Rica, while EXPORPACK pays local costs (lodging, food, and local transport).

The principal problems have been fertilization and insects. The technical assistance was a great help in solving these problems. For the 89/90 season, the firm is planning to work solely with a biological control program. Tristan feels Costa Rica needs stricter legislation to control agro-chemicals.

Tristan feels that there is a need for research focused on the specific problems faced by the Costa Rican melon grower. But he notes that research is very expensive and a single business cannot by itself do all of the research needed. Institutions such as CAAP need to collaborate in the research. Traditionally, in Costa Rica, the government has been a failure in supporting and carrying out research.

Today there is not a problem with availability of labor. But this could become a problem in the future. In light of this possibility, the company is importing two harvesting machines.

Under EXPORPACK's current arrangement with CAPINC, that company's president (David Warren) visits Costa Rica about 10 times a year. EXPORPACK is the only grower in Costa Rica who is selling to CAPINC. The company is growing both honeydew (yields of 2,200 boxes per ha.) and cantaloupe (yields of 1,350 boxes per ha.). Both crops are grown under drip irrigation.

The Central American melon grower's strongest competitor is Mexico. That country supplies 50% of the import market to the U.S. Tristan observes that, to plan the production of Central America, the growers would have to negotiate with Mexico on such issues as the amount of land to be planted. However, in the long run, Tristan observes, the market will become very competitive, and the inefficient will be forced to drop out of the industry.

Table 1. Estimated Number of Containers of Melon to be Exported from the Central American Region from the 1989/1990 Harvest (Source: EXPORPACK).

	Multi-Nationals ⁴	Small Carriers	Major Carriers	Total
Honduras	1,030	-	2,500	3,530
Guatemala	400	250	1,600	2,250
El Salvador	<u>150</u>	<u>210</u>	<u>1,032</u>	<u>1,392</u>
Sub-total	1,580	460	5,132	7,172
Panama	<u>-</u>	<u>-</u>	<u>168</u>	<u>168</u>
Sub-total	1,580	460	5,300	7,340
Costa Rica	<u>1,480</u>	<u>-</u>	<u>1,350</u>	<u>2,830</u>
TOTAL	3,060	460	6,650	10,170

Comments:

In Honduras and El Salvador, some growers go back 20 years. With the Caribbean Basin Initiative, people were motivated to think that they could participate in the North American market.

Chiquita in Honduras is reducing the number of growers with whom the company will hold contracts because so many are selling only small amounts.

⁴United Brands (Chiquita) and Del Monte.

CHIQUITA TROPICAL PRODUCTS COMPANY (OF COSTA RICA)^{1 2}

The Project Manager of Chiquita in Costa Rica is Carlos Barquero Quiros. He studied in Zamorano and in INCAE (Nicaragua); he also speaks English which he learned working with Chiquita. Barquero has worked for Chiquita for the past 14 years in banana and oil palm. He has worked for the company in Honduras, Panamá, and Costa Rica. Over the years, he became interested in the idea of working on new crops such pineapple or melon. In his current position with the Chiquita Tropical Products Company, Barquero is developing projects with melon, mango, papaya, and pineapple.

About 1.5 years ago, Eduardo de la Espriella, the director of the USAID/Costa Rica-funded Consejo Agropecuario Agroindustrial Privado (CAAP), an export support organization, approached several Guanacaste farmers with the proposal that they grow melons for export. Espriella also was a farmer in the region and, at one point in his career, had been the vice-president of Chiquita in Costa Rica. The growers were responsive to this proposal and CAAP undertook a pilot melon project in the Guanacaste region.³ As a result of the project, Chiquita now is working with a total of six melon growers in Filadelfia. These growers are planting over 200 hectares of melon each season.

Chiquita is not interested in growing melons, only in packing, transporting, and marketing them. However, for the 89/90 season, with the CAAP melon project winding down, Chiquita is going to give strong technical assistance to farmers who grow melons for export by Chiquita. Barquero sees providing growers with technical assistance as part of the business. Chiquita is interested in having the farmer grow and harvest a high quality melon. He says that the Costa Rican farmer has "to learn to manage the melon technology and this takes many years to learn."

Because of Chiquita's growing operations in banana, Barquero has access to seven Ph.D. specialists who can give technical assistance on a range of problems that can arise in the growing of melons. Also, Barquero has three Costa Rican technicians who work with melon growers in the Guanacaste region (Filadelfia and Parrita) and in Jicaral de Puerta Arenas. Chiquita also is thinking of contracting experts in irrigation and fertilization.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Carlos Barquero Quiros, Project Manager, Chiquita Tropical Products Company.

³See Box 1 in case study of Federico Apéstegui.

Barquero explains that Chiquita has two buying schemes: (1) sale on a commission basis (this scheme applies to all cantaloupe and sizes 4, 5, 6, 8 of honeydew); and (2) sale on a fixed price basis (this scheme applies to small size honeydew--9, 10, 12).

This past season (88/89), 110,000 boxes of melon were exported from a total of 10 growers. In 89/90, a total of 8 growers will plant 350 ha. Another group of 15 farmers in Jicaral is planning to plant 50 hectares during the 89/90 season. But the Compañía Bananera de Costa Rica is going to plant three hectares of melon trials in Quepos, where the company has a 8,000 ha farm, of which 2,000 hectares are appropriate for melon. This, Barquero notes, "could be an alternative for the future."

In Costa Rica, Chiquita is interested in large farmers. The production of melon in Costa Rica has grown because the growers are large farmers. However, in Parrita, about 20 small farmers (who are members of an agrarian reform coop) are going to plant a block of 40 hectares to melon. They also plant vegetables for local consumption.

Barquero notes that Chiquita handles programming of the transport required to move the melons by truck to the port and by boat to the U.S. or other destination markets. In fact, he emphasizes, "Chiquita is the strongest client of the shipping companies operating in Central America." Barquero thinks that Costa Rica, within five years, will be producing as many melons as Mexico.

In Costa Rica, the grower pays \$.01 per box for a tax, while the grower in Mexico pays a tax of \$2.50 per box packed. Mexico's only advantage is that the cost of transport to the U.S. is half that faced by Costa Rica, approximately \$1.50 per box for Mexico. Thus, "if there is bank financing, and we improve the technology, Costa Rica will become a big melon producer."

An important element of the transport problem in Costa Rica is the high port charges. However, Barquero notes, this "forces the farmer to be efficient." He adds: "In a business where there is no risk, advances are not made as quickly." Growing melons for export obliges the farmers to be more efficient. To make money in melons, "one has to produce more than 600 boxes per ha. in cantaloupe and more than 1,000 box per ha. in honeydew under irrigation by gravity."

The principal source of financing in Costa Rica's melon industry has been the private sector. But the private banks traditionally have been very conservative, unwilling to take risks with non-traditional crops. Barquero states that Chiquita is planning to bring bank officials to Honduras "so that they can see that producing melons is not a taboo."

Chiquita chose commercializing melon because the company is trying to have melons in the U.S. market for 10 months of the year. Chiquita is the only company in the world that does this for so many months of the year. The company is sourcing melons in Honduras, Mexico, Dominican Republic, Colombia (on the coast north of Barranquilla), and Costa Rica.

Last year Chiquita only exported No. 1 Chiquita quality. For the 89/90 seasons, Barquero notes, Chiquita will risk carrying smaller sizes. Barquero believes that melons will increasingly, little by little, be marketed to Europe. This year, Chiquita will send 150,000 boxes of small melons to Europe. He feels that, in Costa Rica, melons should be sold on a fixed price and a consignment basis, so that both parties share in the risk. Last year all the small honeydew were rejected by the market. But this year, these melons are going to be sent to Europe on a fixed price base, and big melons to the U.S on consignment.

The melon area in Central America, Barquero feels, should be regulated in order not to kill the market. This is simple to achieve because only four large companies commercialize melon: Del Monte, Chiquita, CAPINC (CAPCO), and an Israeli company.

Chiquita is not interested in buying land and planting melons because the company has no use for the land during the six months of invierno. The idea is to look for other crops (papaya and pineapple) that can be grown on a year-round basis. If this type of crop can be identified, then it would make sense to get involved in production. However, Chiquita provides the technical knowledge, transport, and access to the market; thus, the melon farmer should put up the rest (land, labor, and management of the crop).

Chiquita also is diversifying into papaya and pineapple trials and is currently conducting greenhouse trials with these crops. Chiquita is attempting to obtain pineapple vegetative material for planting in the Central Mesa (around the San José airport) during the next two years.

FEDERICO APESTEGUI - AN INDEPENDENT GROWER IN COSTA RICA^{1 2}

Federico Apéstegui learned to speak English in Costa Rica at St. Francis College, a bi-lingual school. After starting agronomy at the University of Costa Rica, Apéstegui went to Louisiana State University, where he earned a B.S. in agronomy. On returning to Costa Rica in 1973, he began to work on his family's farm in Guanacaste. The Apéstegui family has been in cattle ranching and farming in Guanacaste for the past 50 years, raising traditional crops as rice, sorghum, sugar cane, and cotton.

Apéstegui first tried to produce export melons about 10 years ago under a government-sponsored program (DAISA³) but this venture failed because of the lack of adequate melon growing technology. A few years ago his family encouraged him to try again to grow melons. Apéstegui had seen that another farmer in the region, John Brealey⁴, was beginning to develop a melon growing and exporting operation (EXPORPACK), although the results of the initiative were at times discouraging. Apéstegui proposed to Brealey that he (Apéstegui) grow melons and export them through EXPORPACK. But Brealey advised him to wait until he (Brealey) was sure that he had been able to work out all the bugs in terms of producing melons on his farm and exporting them; he didn't want other growers finding themselves making the same mistakes.

Subsequently, in 1987, Apéstegui became one of the seven farmers in Guanacaste to participate in a pilot melon growing project (Box 1) sponsored by CAAP (a Costa Rican export support organization). This program provided the farmers with the technical assistance they needed to learn how to grow, harvest, and pack melons for export. CAAP provided this assistance by bringing a postharvest handling specialist (John Guy Smith from the USAID/RCCAP PROEXAG project) from Guatemala to work with the farmers. Also, CAAP hired a Costa Rican agronomist, Claudio Zumbado, to work with Smith in developing this pilot initiative. Claudio had earlier gained experience working with melons as a member of the DAISA initiative.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Federico Apéstegui, an independent melon grower who was one of the seven farmers who participated in the melon project sponsored by CAAP, a Costa Rican export support organization (see Box 1 on the Costa Rican Melon Project).

³See case study on Desarrollo Agrícola Industrial S.A. (DAISA).

⁴See case study on John Brealey (founder of EXPORPACK S.A.).

Smith recommended that the farmers participating in the CAAP melon project plant no more than two hectares during the initial season (87/88). The emphasis was not on growing melons for export but rather on learning whether the farmers could grow melons of export quality. During the 87/88 season, Apéstegui planted 1.25 hectares of honeydew under gravity irrigation and harvested 1,400 boxes of melon per hectare. He sold a total of 1,800 boxes to John Brealey's EXPORPACK on a consignment basis.

However, Apéstegui's return was ultimately reduced by EXPORPACK's charge for packing the melons and by the 12% commission charged by EXPORPACK's broker. This led Apéstegui to the idea that he could make a larger profit by reducing his marketing costs (i.e., for packing and selling the melons) and exporting melons directly to a buyer. For this, he obtained a certificado de exportación (export permit) from the government.

For the 88/89 season, Apéstegui planted 30 hectares of honeydew under drip irrigation. But Apéstegui encountered many problems with the irrigation system installed for that season. His yield was only 700 boxes per hectare. He sold his harvest to Chiquita, an option that was developed with the assistance of CAAP. CAAP contacted three exporters (Agro-Fruit of Panamá, Fresh Western of California, and Chiquita of Costa Rica) and arranged for them to meet with the farmers participating in the CAAP melon project. Each of the exporters made an offer but the farmers decided that Chiquita had made the best offer, providing transport guarantees as well the option for each grower to sell on either a fixed price or consignment basis. Because of the uncertainties, all of the growers chose the fixed price option.⁵

As previously noted, Apéstegui installed a drip irrigation system in preparation for his second melon growing season. He looked into two different systems, the Israeli Ravit system and the California Rainbird system. While the Ravit system was more expensive on a per hectare basis, the tubing only needs to be replaced every three years, and other farmers (affiliated with Del Monte) had already used the system during the two preceding seasons. On the other hand, while the Rainbird tubing is less expensive on a per hectare basis, the tubing must be replaced each year. He obtained quotations from both companies and chose Rainbird because the company's local sales rep (Durman Esquivel) appeared to provide better prospects for personalized service.

⁵The growers feel that Chiquita's price, based on selling on commission, should be better. Chiquita charges the grower a commission between 8%-16%. When the price of sale is higher, Chiquita charges a higher commission, to a maximum of 16%. The growers feel that Chiquita should set the commission charge at a fixed percent (e.g., 12%). Apéstegui feels that when the growers have more experience, they can better negotiate.

But a failure in the operation of this system was Apéstegui's biggest problem during the 88/89 season. The local Rainbird dealer did not know enough about the system to guide Apéstegui in the system's proper use. Nor did CAAP have an irrigation specialist. As a result, problems arose in operating the new system. To solve these problems, CAAP sent irrigation tubing samples to Rainbird in California for analysis and contacted Rainbird's Central American representative and convinced him to come to Costa Rica to identify the irrigation problem. Since the Rainbird system requires that the tubing be replaced each season, Rainbird had a vested interest in ensuring the system's proper operation and customer satisfaction. Apéstegui learned that the problem had been caused by blockage of the drip holes by algae and calcium carbonate, and penetration of the holes by plant roots seeking water. Rainbird suggested corrective measures that should prevent the irrigation problem from reappearing.

Because of the family's asset position (i.e., ownership of land, buildings), Apéstegui was able to obtain a production loan from the Banco Nacional de Costa Rica to cover a large share of his operating costs for the 88/89 season. However, the bank would not loan him money for the irrigation system and Apéstegui had to finance the purchase and installation of the system from funds available from other family enterprises, and still owes the local Rainbird distributor money.

Apéstegui was motivated to grow melons for export because of the profit that potentially could be made, particularly in the wake of the Caribbean Basin Initiative. Because of the potential to earn profits, Apéstegui is looking into other potential non-traditional crops for export, although some of these crops (e.g., lime and mango) require a longer time period to bring a return. Apéstegui notes that traditional agriculture, while allowing his family to live well, has never provided the farmer a way to earn a lot of money, given domestic (governmental) controls on food crops and/or international market controls on traditional export crops. By comparison, a farmer can earn money growing melons for export; however, the farmer must take this venture on as a challenge because growing the crop requires constant attention to the management of the technology.

Apéstegui is confident about the future of the melon market. He recalled that, even after signing a contract with Chiquita, a number of persons representing melon importers approached him with offers to purchase his melons at prices higher than Chiquita had offered (on a fixed price basis). These persons represented various importers in Florida, Texas, and California. As a result of this experience, Apéstegui is planning to sell his 89/90 melons to Chiquita on a consignment basis in the hope that the market again will be good and he will earn a higher return than would be the case if he again sells on a fixed price basis.

For the 89/90 season, Apéstegui plans to plant cantaloupe on about 100 hectares. He is interested in growing cantaloupe because Chiquita has advised him that other countries will be producing a lot of honeydew during the next season and that he has a better chance of making a good profit by growing cantaloupe for export. Given that the technology required to grow cantaloupe is basically the same as that required to grow honeydew, Apéstegui's experience in learning how to grow honeydew has placed him in the position where he can now easily move into growing cantaloupe. Further, his farm is situated only one km. from the farm of Juan Carlos Gillen, one of the other seven farmers participating in the CAAP melon project. Chiquita has agreed to build a \$500,000 packing plant on Gillen's farm, thus placing the growers in a good position to harvest cantaloupe and move them quickly to the plant for packing and cooling. This has given the growers confidence that Chiquita is not going to walk out on them.

Apéstegui sees two areas in which problems potentially may arise during the upcoming season. On the production side, he hopes that he has learned enough about how to operate his drip irrigation system properly that irrigation will not be a problem. On the marketing side, he and the other growers worry that Chiquita has not moved quickly to build the packing plant that Chiquita agreed to install on Gillen's farm. Assuming that the plant will be ready in time for harvest, the remaining marketing problem is that of potential competition from other melon growing companies. Apéstegui feels that Costa Rican melon growers not only must continue to improve the quality of the melons they produce but also must explore the possibility of producing other non-traditional crops for export.

Apéstegui identified CAAP as the principal source of useful information for him during the time he was learning how to grow melons for export. CAAP was instrumental in helping the farmers to gain access to knowledgeable sources of technical assistance, including PROEXAG's John Guy Smith and Mr. Wolf (father of the cantaloupe in Florida). Also, CAAP arranged for soil samples to be sent to Florida for analysis and, as noted above, helped farmers with getting problem-solving technical assistance from Rainbird.

Finally, Apéstegui notes the importance of melon growers working together to solve the various problems they face. For example, of the seven farmers who initially participated in the CAAP pilot melon project, five will be planting melons in the 88/89 season. These five have continued to work together to maintain a united front vis-a-vis Chiquita. For the 88/89 season, each farmer contributed, based on total hectares planted to melon, to the building of a small plant to pack the melons they sold to Chiquita. They worked together to contract the transport to move the melons from the packing shed to Chiquita's receiving point.

Box 1. The CAAP Melon Project

In 1987, CAAP (a Costa Rican export support organization) learned that seven Guanacaste farmers, including Federico Apéstegui, were interested in alternatives to grains. At the time, CAAP's director, Eduardo de la Espriella, also farmed in Guanacaste. He knew the farmer's desire to find profitable production alternatives. In October 1987, CAAP organized a meeting in Guanacaste for the farmers to discuss alternatives. CAAP arranged with USAID/ROCAP's Non-Traditional Agricultural Export Promotion (PROEXAG) project for the project's post-harvest handling specialist (John Guy Smith) to attend this meeting and talk about growing melons. CAAP also obtained soil and water samples from the farmer's land.

Smith recommended that the farmers plant a small area of land (2-3 ha.) to melons in order to learn how to grow this crop. A total of 15 ha. were planted by the 7 farmers in the 87/88 season. Smith came every 2-3 weeks (a total of 6 to 7 times) to provide technical assistance. One of the original DAISA ingeniero agrónomos (Claudio Zumbado) was hired to work with Smith to provide technical assistance during the melon growing season. To export their melons, the farmers delivered their melons to EXPORPACK for packing and shipment to a broker in Miami who charged a 7%-15% commission depending on the market.

While the results were not particularly encouraging, they were not catastrophic. The farmers were still interested in growing melons and wanted to increase the area planted. Also, the farmers wanted to sell their melons to a firm that would pay them a better price. They felt that they could get a better price if their melons could be sold directly to a major buyer than by selling on commission through EXPORPACK to a broker. Further, the farmers also faced the problem that EXPORPACK's limited packing facilities would not be sufficient to handle the additional melons that the farmers could produce.

The farmers asked CAAP to assist in identifying an alternative commercialization channel. Smith and PROEXAG marketing specialist Ricardo Frohmader contacted Chiquita in Costa Rica as well as two Miami importers. Representatives of the latter two companies came to Costa Rica to meet with the farmers. The farmers decided on Chiquita, and met with Chiquita to negotiate price and technical assistance. The farmers obtained Chiquita's assistance in designing a hand operated packing plant (costing 400,000 Colones as compared with 20,000,000 Colones paid by EXPORPACK for its automated packing plant). The contract negotiated with Chiquita provided for the farmers to be paid for the melons placed in the plant. Chiquita also agreed to provide a quality control inspector in the plant.

During the following year (88/89), 120 ha. of melon were planted by the 7 farmers, with one farmer planting 30 has. Now, a total of 14 farmers are growing melons, with 85%-90% of the production sold to two exporters (Chiquita and Del Monte).

DEL MONTE SPECIALTY PRODUCTS S.A.^{1 2}

The Del Monte Corporation is a relatively new actor on the melon scene in Costa Rica. The former president of Del Monte, Paul Bott (who left Del Monte in March 1989) had a dream of Del Monte becoming a major supplier not only of banana and pineapple but also of other tropical fresh fruits such as melon, papaya, and mango. The company decided that this objective could be easier achieved by buying a company that already had some experience in exporting melons than by trying to start from scratch.

An important figure in this story was a Costa Rican named Valentin Quiros. On graduating from Louisiana State University, Quiros took a job with Standard Fruit (Dole). Later, in 1967, Quiros joined Del Monte and became assistant general manager of Del Monte's Banana Development Corporation (BANDECO). In 1978, he opened and became general manager of Del Monte's Pineapple Development Corporation (PINDECO).

At the time, Jay Nichols Inc., a fruit growing, importing, and marketing company in Lakeland, Florida, was seeking to expand melon imports from the Central American region. In 1987, Quiros left Del Monte to take a position with Jay Nichols Inc. The job of Quiros was to identify potential melon growers and assist them in growing melons for export. To facilitate this, Jays Nichols Inc. established an affiliate exporting organization in Costa Rica called Nichols Exportadora. Jay Nichols Inc. provided technical assistance through Quiros to two Costa Rican growers. By late 1986 or early 1987 these growers were exporting melons to Jay Nichols Inc. in the U.S. through Nichols Exportadora.

In early 1988, Del Monte decided to acquire an experienced tropical fresh fruit exporting company. Quiros apparently was a key figure during this period. Having earlier been an employee of Del Monte and now a key principal in Jay Nichols Inc., Quiros was a link in getting the two companies together. In mid-1988, Del Monte purchased Jay Nichols Inc. and, thereby, also Exportadora Nichols.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Alfredo Apéstequi, general manager, Del Monte Specialty Products S.A.

As part of this arrangement, Jay Nichols became the president of Jay Nichols, Inc. and Quiros became general manager of Exportadora Nichols (this name was later changed to Del Monte Specialty Products). Del Monte's current general manager, Alfredo Apéstegui, was hired by Quiros in September 1988.³

In preparation for the 88/89 season, Del Monte provided Jay Nichols Inc. financing to expand joint venture production of melons by five Costa Rican growers. During this season, Exportadora Nichols exported 1 million boxes to the U.S. However, for various reasons, the arrangement between Del Monte and Jay Nichols Inc. did not work out as expected. In June 1989, Jay Nichols resigned as president of Jay Nichols Inc. and the company was sold to Del Monte on a debt equity basis.⁴

As a result of the transition described above, Apéstegui became the general manager of Del Monte Specialty Products, and the company became a joint venture partner with five Costa Rican melon growers. The company assumed five-year contracts to market fruit for these five growers. Under this arrangement, Del Monte is planning to export approximately the same volume as in the 88/89 season.

Melons produced by growers are sold by Del Monte on consignment, with Del Monte charging a 10% commission. Del Monte feels that this commission is relatively low (e.g., CAPCO charges a 12% commission) and provides an incentive for farmers to export their melons through Del Monte. Also, with Del Monte already exporting banana and pineapple on the company's own ships, the company is in a position to export melons on its own vessels. Further, Del Monte has the flexibility to ship to various U.S. East and West Coast destinations.

It should be noted that Del Monte had been in the middle of a buyout since December 1988. In early September 1989, Del Monte was purchased by POLY PECK INTERNATIONAL, a British conglomerate.

³Apéstegui is a food processing engineer from Louisiana State University. He learned English through 6 months of intensive study at LSU. On returning to Costa Rica in 1980, he joined Del Monte, working 5 years on pineapple. He then left Del Monte to work in hotel management with two San José hotels. Then, in 1988, Quiros asked Apéstegui to come back to Del Monte which he did on 9/12/88.

⁴During this period, Del Monte offered Quiros a position as a consultant on asparagus to Del Monte, but Quiros declined this offer and resigned from Del Monte. He has a farm in Venecia, San Carlos, where he is now growing pineapple. He is also serving as a consultant to a Colombian banana company (BANACOL).

Del Monte's growers use one of the most expensive technologies (drip irrigation) to grow melons. While this technology results in a high cost per hectare to produce melons, the result is a low cost per box of melons. Where less expensive systems (gravity irrigation) cost around \$3,000 per hectare, the yield is only 800 boxes per hectare. On the other hand, drip irrigation at \$6,000 per hectare can produce 3,000 boxes per hectare. Del Monte recognizes the importance of developing people skilled in the management of drip irrigation technology for growing melons. The company provides technical assistance (employees of Del Monte) to growers based on a fee per box.

Growing and exporting melons is basically a 5-6 month per year operation that starts in the middle of October and runs through the end of May. As a result, expensive capital installations such as machinery, packing plants, and cooling rooms remain idle for the other six months. Consequently, Del Monte is developing alternatives for the use of these assets during the off season.

Apéstegui points out that there are several factors which account for why so much is now happening in the area of growing melons for export. He notes that there was not a good environment for investment in the Central American region between 1978 and about three years ago, given the problems that existed in Guatemala, El Salvador, and Nicaragua. However, with the Central American peace initiatives during the past two-three years, a positive climate has been reestablished in the region. This climate is conducive to investment and risk taking by entrepreneurs.

However, Apéstegui also notes that another major factor needs to be considered in accounting for the surge in interest in melons and other non-traditional export crops. Large multinational companies such as Chiquita and Del Monte no longer find themselves as "the only kid on the block" when it comes to growing traditional crops such as banana or pineapple for export. For example, BANACOL (Colombian Banana Company), is now working on the development of banana growing in Costa Rica. In the face of this new competition, multinational companies are now looking for growth opportunities through crop diversification. These crops are particularly promising because no one knows what the upper limit is on the demand for these crops in the off season, especially given the changing preferences in the U.S. toward consuming more fresh fruits and vegetables. Further, with improved availability of transportation, Europe is quickly becoming a new alternative for these other crops. In the case of melons, small size melons, are very popular in Europe and command good prices. Of course, the problem is transport.

At the same time, the ability of countries such as the Dominican Republic and Panamá to produce melons has declined in recent years. Insect problems have plagued production in the Dominican Republic, while the political situation in Panamá has discouraged investment in non-traditional agricultural products. These developments pose opportunities for countries like Costa Rica-- both to replace the melons not being produced by countries like the D.R. and Panamá but also to expand production to meet the large and potentially growing demand in the U.S. for fresh fruit and vegetables from the tropics. As further evidence of this trend, Del Monte also has started a project to export 100,000 boxes of melons from El Salvador, and is initiating production in Honduras. In Costa Rica, Del Monte's specialty division is developing projects with melons, mango, papaya, lime, strawberry, coconut, and chayote.

Research is needed in such areas as varieties, planting density, water monitoring, and fertilization (nitrogen). However, it is very difficult to get good research done in the universities because the universities pay such low salaries and good people do not stay long there. Apéstegui notes that banana growers provide money for research through their association (ASBAN).

FRUTAS DE PARRITA S.A.^{1 2}

Frutas de Parrita S.A. produces melons for export and commercializes them through Del Monte Specialty Products S.A. (see case study on same). The company is a joint venture between Del Monte and a firm, Compañía Ganadera Internacional, owned by the Batalla family. José Urgellés is the manager of that firm. The Batalla family traditionally raised rice and cattle on their farm in Parrita. Urgellés speaks English which he learned while he was growing up. He is a graduate of West Point, where he specialized in applied science and engineering. He then attended Stanford University, where he earned an M.S. in industrial engineering.

Several factors influenced the decision by the Batalla family to grow and export melons. First, the family was looking for a crop that would allow diversification away from a dependence on traditional crops such as rice, corn, sorghum, and soybean. In rice, for example, farmers in Parrita would grow two crops but, for climatic conditions (lack of rain in verano), farmers typically had lower yields for the second crop. This factor led Urgellés to the idea of finding another crop to substitute for rice in the dry (verano) season. Also influential was the availability of land suitable for growing melons and the prospect that growing melons would be more profitable than growing rice in the verano.

Urgellés had no experience in exporting when began exporting melons in 1983 through a government-sponsored export initiative called DAISA.³ Representatives of DAISA were looking for farmers who would be interested and willing to invest in growing melons for exports. Initially Urgellés grew only honeydew melon but during the 88/89 season began to plant about 30% of his melon crop to cantaloupe. The addition of cantaloupe to his product line was made possible by the construction in November 1988 of a pre-cooling facility, a post-harvest technology that is essential if the grower is going to export cantaloupe successfully.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by José Antonio Urgelles, general manager of Frutas de Parrita.

³See case study on Desarrollo Agrícola Industrial S.A. (DAISA).

Urgellés reports that he faced two major problems in learning how to export. On the production side, he had to learn how to produce quality melons and properly pack them for export. On the marketing side, he encountered problems both in terms of price (particularly in 88/89) and delays in receiving the payment for the melons he had exported. He recalls that Jay Nichols Inc. was not prepared to market the quantity of melons that Costa Rican growers had available for export.

Box 1 provides an overview of the pattern of growth in the export of melons by Frutas of Parrita.

Box 1. Boxes of Melons Exported by Frutas de Parrita (83/84 - 89/90).		
<u>Season</u>	<u>Boxes Exported</u>	<u>Broker</u>
83/84	-	DAISA ⁴
84/85	1,500	COMPEXPASA ⁵
85/86	1,500	Tampa, Fla. broker (John Hill)
86/87	4,000	Tampa, Fla. broker (John Hill)
87/88	110,000	Jay Nichols Inc.
88/89	180,000	Jay Nichols Inc.
89/90	est. 200,000	Del Monte

During the 88/89 season, Urgellés planted 70 ha. to melon and plans to plant a maximum of 100 ha. for the 89/90 season. There are two primary factors determining the amount of melons that Urgellés will plant in a given season. The first factor is that of his perception of the potential market demand for melons. There is no point in growing and shipping large quantities of melon if there is a glut of melons in the market and prices fall. The second factor is climate. Parrita has a very small window during which melons can be grown because the rainy season is longer in Parrita as compared with Guanacaste (see Box 2).

⁴DAISA shut down operations in Guanacaste in 1982 but continued to operate in Parrita during the 82/83 and 83/84 seasons.

⁵A private firm formed by five socios (members), one an exporter (who had been exporting strawberries) and four specialists who had worked in the DAISA melon program. The firm was launched as a means of providing followup to the DAISA program after it shut down in Parrita in 1984. COMPEXPASA purchased the melons from Parrita growers and sold them to the individual who was the exporter; he, in turn, exported the melons through his strawberry exporting business.

However, within this window, Urgellés could increase the hectares planted to melon if the market looked sufficiently strong, if he expanded the processing capability of his packing plant, and if he was sure that he would have access to adequate transport to move melons between his farm and Puerto Limon. The advantage of exporting his melons through Del Monte is that company's ability to provide the transport needed to move the melons from the packing plant to the port, and from there on the company's own ships to their point of destination.

Box 2.	Melon Planting Window in Parrita, Costa Rica.					
O	N	D	J	F	M	A <u>Month (October to April)</u>
<u>XXXXXXXXXXXXXXXXXXXXXXXXXXXX</u>						U.S. Import Melon Market
<u>GGGGGGGGGGGGGGGGGGGGGGGG</u>						Planting in
Guanacaste						
<u>PPPPPPPPPPPPPPPP</u>						Planting in Parrita
<u>UUUUUU</u>						Planting by Urgellés

The major problem now facing Frutas de Parrita, in the view of Urgellés, is learning to better manage the technology required to ensure production of a melon having a top quality appearance (e.g., good netting). If he does not get on top of this problem, he runs the risk of producing and shipping melons perfectly acceptable on the inside but that would not, based on their outside appearance, be perceived by the consumer to be acceptable.

Urgellés feels that there is potential to expand exports to the U.S. and Europe, especially the latter in view of the purchase of Del Monte in September 1989 by POLY PECK INTERNATIONAL, a British firm. The principal constraint to expanding exports is the lack of reliable refrigerated facilities for shipping melons to new destinations (e.g., to Los Angeles via a Pacific Ocean route). In the face of these constraints, Urgellés only sees the future for the Costa Rican melon industry as "somewhat positive." Thus, he does not plan to expand production beyond 100 ha. until he is really convinced that this would be "un buen negocio" ("a good business"). Given his current contract with Del Monte, he is not searching for alternate importers.

Frutas de Parrita has drawn on various technology and technical assistance sources since he began growing and exporting melons. The same ingeniero agrónomo has been working with Urgellés over the past ten years. Initially, during the 83/84 season, Urgellés obtained the technology/technical assistance for growing melons from DAISA technicians. When DAISA was closed in 1984, several of the DAISA technicians formed a firm called COMEXPASA, which provided technical assistance to growers during the 84/85 season.

During the next two seasons (84/85 and 85/86), Frutas de Parrita relied on the firm's own ingeniero agrónomo for technical assistance. The reader may observe that, during this period, exports held constant at around 1,500 boxes per year. The number of boxes exported began to climb during the 86/87, 87/88 and 88/89 seasons (from 4,000 to 110,000 boxes to 180,000 boxes), with the influx of technology and technical assistance from two Israeli technicians provided by Jay Nichols Inc. This trend likely will continue in the 89/90 season when an estimated 200,000 boxes will be exported.

Urgellés feels that the best source of information was learning by doing (trial and error). Experience has taught him that in melon growing, there is no substitute for being efficient. He does note that the Israeli technicians have been helpful. His company has not drawn at all on the services of the USAID/ROCAP Non-Traditional Agricultural Export Promotion (PROEXAG) project or the Costa Rican export support organization (CAAP).⁶ Yet Urgellés notes that CAAP assisted his firm in terms of improving his access to market information (prices) and technical information (e.g., providing a list of approved pesticides for melons).

⁶CAAP officials indicate that, over the years, Jay Nichols Inc. and subsequently Del Monte have not be very open to the possibility of developing collaborative relationships between growers, these firms, and export promotion institutions such as CAAP and PROEXAG.

MELONES DE COSTA RICA S.A.^{1 2}

Melones de Costa Rica (MCR), managed by Marco Tulio Bonilla, grows melons in Guanacaste on a large farm called ("El Pelon de la Bajura"). The farm, owned by Carlos Manuel Gonzalez, produces rice, sugar cane, and cattle. Since 1987 some farm land has been used to grow melons for export under a drip irrigation system supplied by an Israeli company (Ravit). Bonilla is married to Sr. Gonzalez's daughter; hence MCR is a Gonzalez family business. MCR grows melons as a joint venture with Del Monte.³

A key person in the startup of Melones de Costa Rica was a Costa Rican named Valentin Quiros. On graduating from Louisiana State University, Quiros took a job with Standard Fruit (Dole). In 1967, he joined Del Monte and became assistant general manager of BANDECO, Del Monte's Banana Development Corporation. In 1978, he opened and became general manager of Del Monte's Pineapple Development Corporation (PINDECO). In 1987, Quiros left Del Monte to work as a local representative of Jay Nichols Inc. (JNI), a fruit growing, importing, and sales company in Lakeland, Florida.

JNI already was planting melons in Guatemala and was looking to expand imports of tropical fresh fruit from Central America. JNI saw exporting melons from Costa Rica as a possibility. Quiros' job with JNI was to identify farmers who would grow melons and assist them in starting up their melon growing operations. Also, to support the actual exporting of the melons, JNI established an exporting company, Nichols Exportadora. Further, JNI arranged to provide technical assistance to growers.

For this purpose, two Israelis knowledgeable in growing melons were hired. One of them had worked on melon production during the previous one-two years in Guatemala and Honduras; this specialist brought in another technician from Panamá. These Israelis, who still live in Costa Rica, are affiliated with the Israeli company Ravit which sells the drip irrigation system used by all of the Costa Rican melon growers who supply melons to Del Monte. Thus, these two Israelis provide technical assistance to each of the five growers who are producing melons for Del Monte under the Ravit drip irrigation system.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Marco Tulio Bonilla, general manager of Melones de Costa Rica.

³See case study on Del Monte Specialty Products S.A.

In 1987, Quiros began to approach Costa Ricans (e.g., Gonzalez family) who had access to land for growing melons and who might be interested in entering into a joint venture with JNI to grow and export melons. JNI would provide the technology, technical assistance, and a marketing channel (via Nichols Exportadora), while the Costa Rican partners would provide the land and labor.

At the time, John Brealey, a Guanacaste farmer and a friend of the Gonzalez family, already was growing and exporting melons with a degree of success. The Gonzalez family had been keeping an eye on the Brealey operation. Quiros knew Marco Tulio Bonilla, son-in-law of the Gonzalez family, and proposed the joint partner venture to him. While having no previous exporting experience, the Gonzalez family was interested in entering into this venture. They had land available for melons and could access resources to finance installation of drip irrigation, packing plant, and pre-cooling facilities. Also, the family recognized the possibility of making a profit.

Finally, Quiros arranged for Jay Nichols to come to Costa Rica to meet with Marco Tulio Bonilla. The two reached an agreement, Melones de Costa Rica (MCR) was formed, and MCR moved ahead to install the required infrastructure on the "El Pelon" farm during 1987. For the 87/88 season, 200 hectares were planted, with JNI providing the technology (e.g., seeds) and the two Israelis the technical assistance. The crop produced a good yield and the melons were exported at a good price.

In early 1988, Del Monte decided to acquire an experienced tropical fruit exporting company; in mid 1988, Del Monte Specialty Products purchased JNI (thereby, also Exportadora Nichols).⁴ Thus, during the 88/89 season, MCR began to pack its melons in Del Monte boxes. In June 1989, Jay Nichols sold his shares in Jay Nichols Inc. to Del Monte on a debt equity basis. As a result, Del Monte became a joint venture partner with MCR. MCR now sells melons to Del Monte on consignment, with Del Monte charging a 10% commission.

⁴Over the years, the multinationals were starting to find that they were facing increasing competition from other producers of tropical fruits such as banana and pineapple. This increased the incentive for the multinationals to look at other tropical fresh fruits with profitable export potential. Also, these firms found themselves looking for other produce to fill up space that was not needed for transporting bananas on company-owned ships.

Del Monte feels that this commission is relatively low (e.g., CAPCO charges a 12% commission) and provides an incentive for farmers to export their melons through Del Monte. Also, with Del Monte already exporting banana and pineapple on the company's own ships, Del Monte's growers can ship melons at a lower rate on Del Monte-owned carriers than they can ship melons on commercial carriers. Further, while the commercial carriers primarily go to Florida, concentrating imports at one point, Del Monte ships to various points.

During its first two seasons, MCR exported a mix of cantaloupe (65-70%) and honeydew, based on 200 hectares in 87/88 and 400 hectares in 88/89. MCR only attempted to plant watermelon for export during the second season (88/89) but encountered price and transport problems. For 89/90, an estimated 800-850 hectares of cantaloupe and honeydew will be planted.

Looking back on the problems MCR had in learning how to grow melons for export, the biggest problem was learning how to manage the melon growing technology provided by JNI. During the first season (87/88), the melon crop suffered insect problems. JNI assisted MCR in obtaining a list of the pesticides approved by the EPA for growing melons for export to the U.S. However, by the second year, the key problem faced by the firm was that of uncertainty about the price at which melons would sell, given that MCR was selling on a consignment basis to Del Monte.

Bonilla, MCR's general manager, notes that the primary negative factor in the Costa Rican policy environment is the high port tariffs charged to exporters moving goods through Puerto Limon. Generally, however, he feels that Costa Rica provides a very positive environment in which to do business. The government is in favor of export promotion and has taken some concrete steps to expedite exports. There is, for example, the ventanilla unica, a one-stop location where the exporter can take care of all the paperwork required to export a commodity. Further, the farmer who holds a contrato de exportación is able to purchase imported inputs without having to pay the import tax.

The startup and expansion of MCR's operations have been financed through a combination of using family-owned resources and loans from the Banco Nacional. The firm is continuing to expand, having purchased Melones del Pacífico⁵ from MATRA during September 1989. (The reader should note that Melones del Pacífico actually was owned by the Gonzalez family, the same family owning Melones de Costa Rica.)

⁵See case study on Melones del Pacífico.

Generally, Bonilla sees a very positive future for the Costa Rican melon industry, with two provisos. First, Bonilla is concerned about the potential instability in the price of melons in the export market. For example, prices of other export crops such as pineapple have fallen in the past and Bonilla recognizes that this could also happen to melons. If melon prices in the export market fall relative to other crops (e.g., pineapple), a company like Del Monte could decide that it would rather buy pineapple than melons.

Second, Bonilla is wary of potential transport problems that might arise, citing the problem that Honduran melon growers faced in 88/89 when the melons were packed but the growers either could not get space in ships or could not even get containers. In any case, Bonilla is currently locked into working with Del Monte and is not seeking to work deals with other potential importer or buyers.

Overall, Bonilla cites his initial link with Jay Nichols Inc. and subsequently with Del Monte as the most useful information source during the period he was learning how to grow melons for export. These sources provided technology and technical assistance (the two Israelis), although the costs of the Israeli specialists may have been borne partially by Ravit, the Israeli company that sells the drip irrigation system used by the farmers growing melons for Del Monte.

Bonilla also cites as useful A.I.D.-sponsored information sources such as John Guy Smith [postharvest handling specialist, USAID/ROCAP Non-Traditional Agricultural Export Promotion (PROEXAG) project] and CAAP with whom the two Israelis have consulted for advice (e.g., obtaining most current list of approved pesticides). Generally, compared with the close working relationship between CAAP and the farmers participating in the CAAP pilot melon project in Guanacaste,⁶ Melones de Costa Rica developed its melon growing and exporting operation with little or no PROEXAG or CAAP input.

However, Bonilla feels that organizations such as PROEXAG and national-level organizations like CAAP can play a useful role in addressing policy problems (e.g., the high port tariffs), working to improve promote improved transport capability in the region, and supporting adaptive research on melon production problems such as insects and viruses. Finally, Bonilla expressed interest in participating in a melon growers association.

⁶See Box 1 of case study on Federico Apéstequi.

MELONES DEL PACIFICO S.A.^{1 2}

Melones del Pacífico, initiated in 1988 as a project of a Costa Rican company known as MATRA, grew and exported melons for the first time in 1988/89. Employing 1,500 persons, MATRA's principal activity is sales of goods imported from Europe and Japan. The company functions as a sales representative for 12 brands of vehicles, machinery, and other durable goods. MATRA's market share in the sale of these goods is so large that there is little room for the company to expand profits through increased sales. The idea of planting melons grew out of the firm's belief that it would be good to be in a position to be able to earn dollars in the event that Costa Rica ever reached a point of imposing, as other countries have done (e.g., Ecuador, Honduras), restrictions on access to dollars. This was the strategic reason for creating Melones del Pacífico.

Carlos Manuel Gonzalez, one of the owners of MATRA, is also the owner of a large farm ("El Pelon de la Bajura" in Guanacaste that traditionally produced rice, sugar cane, and cattle. In recent years, some of the farm's land has been used by Melones de Costa Rica (MCR)³ to grow melons for export. MCR general manager Marco Tulio Bonilla is married to Sr. Gonzalez's daughter; hence MCR is actually a Gonzalez family business.

A key person in the startup of Melones del Pacífico was Valentin Quiros, ex-manager of Del Monte's pineapple exporting subsidiary (PINDECO).⁴ Quiros left Del Monte to become a partner with Jay Nichols Inc., a Florida-based fruit growing, importing, and sales company. Nichols was looking to expand operations into Costa Rica and saw melons as a possibility. Quiros approached Costa Ricans (e.g., the Gonzalez family) who had access to land (e.g., the farm "El Pelon de la Bajura) for growing melons. During the 87/88 season, MCR planted 200 ha. on the Gonzalez farm ("El Pelon"). Technical assistance was provided by Jay Nichols Inc., the crop produced a good yield, and the melons were exported at a good price through Exportadora Nichols, a local exporting affiliate of Jay Nichols Inc. Having seen MCR's success in growing and exporting melons during the 87/88 season, Gonzalez proposed to MATRA could expand its dollar earnings by exporting melons.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Mario Castillo L., general manager of Melones del Pacífico.

³See case study on Melones de Costa Rica.

⁴See case study of Del Monte Specialty Products S.A.

A driving force behind the Melones del Pacífico project was Mario Castillo. Castillo originally was trained as an agronomist at Zamorano in Honduras. He then went to the U.S. to study English, with the idea of earning an M.S. in soil science at the University of North Carolina at Raleigh. But after a year he returned to Costa Rica and decided to earn an M.B.A. at INCAE in Nicaragua. Upon graduating, Castillo worked for four years in United Fruit's Comptroller Department for the Central American region. He then joined MATRA where he worked one year as finance manager and then one year as sales manager, before being assigned the task of developing the Melones del Pacífico project.

MATRA started Melones del Pacífico (MP) as a subsidiary company, renting 80 hectares of land on the "El Pelon" farm for the 88/89 season. As with Melones de Costa Rica, Valentin Quiros assisted MP in entering a joint partnership with Jay Nichols Inc. This firm provided two Israeli technicians to assist MP in learning the production and postharvest handling technology to grow and export melons successfully. Infrastructure for the technology (electricity, packing plant, drip irrigation sold by the Israeli company Ravit, etc.) was installed during a three-month period (August-November) of 1988, with the project financed by CABEI.

But MP harvested only 80,000 boxes during the 88/89 season, that is, about 1,000 boxes per hectare, a low yield level considering the melons had been grown using what was considered to be high-productivity technology. Good yields would have been 1,500 boxes per hectare of cantaloupe or 2,500 boxes per hectare of honeydew. The firm's packing plant, a modern pre-cooling facility brought from Texas, with an 8,000 box capacity, was very underutilized.

Despite the limited results of the 88/89 season, MP proceeded with plans to expand operations for the 89/90 season by renting an additional 130 has. The "rented" land actually is agrarian reform land, to which the firm gained access via a 7-year lease arranged by the Ministry of Agriculture and the Agrarian Development Institute (IDA). But even as preparations for the 89/90 season were developing, doubts began to arise about whether it was in MATRA's best interest to continue with the project.

First, Jay Nichols Inc. was sold to Del Monte, thereby giving MATRA a new partner. But the low yields of the 88/89 season led Castillo to see that even the best technology needs to be adapted to ensure high productivity. While affiliation with Del Monte is an advantage because of the company's access to transport, MATRA recognized that Del Monte is not a strong partner with respect to production.

Second, MATRA recognized that the firm does not know anything about agriculture.⁵ The experience of the first growing season had shown that managing MP would require much more time than the firm had anticipated. Indeed, Castillo felt that the project had reached the point where it was absorbing inordinate amounts of time compared with expected returns. Further, given the rapid growth of the melon industry in Costa Rica, there was a question of whether MATRA had the technical and market expertise that would be needed to compete successfully in the Costa Rican melon market.⁶

All things considered, MATRA decided to get out of melon exporting. In September 1989, MATRA sold MP to Melones de Costa Rica (MCR). MP will continue to operate under its original name but as a subsidiary of MCR. It should be noted that this sale kept control of Melones del Pacífico within the Gonzalez family (the owners of Melones de Costa Rica).

But even as MP has been sold to Melones de Costa Rica, Castillo feels that greater support is needed for adaptive research on melon production. He suggests that there is an urgent necessity to establish a department of research that would benefit all of the melon sector. He noted that "El Pelon de la Bajura" and Del Monte are going to initiate a small department of investigation in 89/90.

⁵Castillo believes that banana producers always overestimate their transport requirement and, as a result, melon producers will have access to transport facilities. As a last resort, they can turn to the commercial shipping lines. Also, MATRA imports \$1,000,000 per month in goods which gives them a preferential status in dealing with the shipping lines.

⁶Castillo notes that Chiquita is going to contract for 400 ha. of melon, a level of market penetration that will make Chiquita a very strong contender in Costa Rica's melon industry.

TICO MELON^{1 2}

Rudiger Lohrengel joined PIPASA, Costa Rica's largest poultry firm, in September 1988. He previously had worked in Costa Rica's Atlantic Zone, in various forestry, banana, and cattle projects. For five years he worked in a meat factory and, more recently, had been working on an African oil palm project. He grew up in a Spanish- and German-speaking family and learned to speak English by himself. He graduated from Zamorano (the Pan American Agricultural School, Honduras) in 1966, but did not pursue any further academic training except for taking some sales and business administration courses.

Tico Melon was launched by PIPASA. About 1.5 years ago, PIPASA was approached by a Washington, D.C.-based firm, Agro-Business Corporation of America (ACA), comprised principally of lawyers. ACA's president, Richard Smith, approached PIPASA offering the firm the opportunity to get into growing melons for export. The melons would be imported to the U.S. through ACA's Miami affiliate, ACA Produce. ACA had produced melons in the Dominican Republic and had bought melons in Honduras³ for import to the States.

ACA was looking to invest in a strong firm that could provide chicken manure (gallinaza). Why did ACA need access to chicken manure? ACA had initiated a melon project in the Dominican Republic but that venture proved a failure. ACA believed that the failure had been caused by chemical phytotoxicity and that the problem could be solved by using chicken manure as the source of nitrogen.

ACA would provide PIPASA with technology for growing, harvesting, and packing the melons; build the packing plant; and assist PIPASA in obtaining USAID/Costa Rica support for a soft interest loan. For its part, PIPASA was to provide rented land accepted by ACA's technician, labor for growing the melons, and logistics support. PIPASA found ACA's proposal acceptable and a joint partnership was established, with ACA holding 45% of the venture, and PIPASA 55%. A sociedad anonima called Tico Melon (TM) was formed and a contrato de exportación was obtained from the government.

¹Prepared by Kerry J. Byrnes, A.I.D Center for Development Information and Evaluation (CDIE), October 1989.

²The information for this case was provided by Rudiger Lohrengel, Project Manager of Tico Melon.

³See case study on COAGROVAL.

Technology for the venture was to be provided by ACA through Pritam Sandhu, a melon growing expert from California's Imperial Valley. ACA looked very good on paper and ACA presented Sandhu to TM as "el dios de los melones" ("the god of the melons").

TM placed its confidence in Sandhu because, after all, ACA was risking 45% in the venture. Sandhu explained that ACA had encountered difficulty in growing melons in the D.R. because of chemical residuals in the soils. ACA had determined that the problem could be solved by using chicken manure as a nitrogen source rather than chemical fertilizers. This was why ACA wanted to become a partner with a firm that had access to chicken manure.

For the 88/89 season, TM planted 160 hectares to cantaloupe. To get the operation going, TM had to invest more money than the loan had provided. While Sandhu arranged to buy the materials to construct the packing plant, he had no experience in building such a plant. TM had to hire a local engineer to get the plant ready for the harvest season. But this is not where Sandhu's lack of knowledge about melon growing stopped. Indeed, as the season progressed, it became increasingly apparent that the actual growing of the melons was turning into a technological disaster, "un verdadero fracaso" ("a true failure").

Rudiger reports that he began to see problems early in the season but, not being a melon specialist, he was not in a position to do anything about the problem. "While we thought Sandhu was making some bad decisions," Rudiger recalls, "if we didn't do what he said, we could be held responsible for any failure in the crop." When Rudiger or other TM personnel raised objections, Sandhu maintained that it was everyone else who was crazy. Only 15 days before knowing the project was a disaster, Sandhu continued to maintain that everything was normal. So TM continued to follow Sandhu's instructions.

By season's end, an estimated 75% of the plants had died. While TM had spent a lot of money on irrigating the crop (\$300 per hectare), Sandhu maintained that the cause of the problem had been a lack of water. Only 75 boxes per hectare of exportable melons were harvested, and TM was only able to export 32,000 boxes, more than half of which were second grade. The melons, once packed, were transported to Puerto Limon by commercial carriers (CCT and SeaBoard) with whom TM had contracted for containers as well as shipping space to the U.S. on boats owned and operated by these companies.

At the end of the season, ACA asked Jim Brock, an asparagus specialist working in Costa Rica, to find someone who could help TM identify why the melon crop had failed. Brock suggested a University of California vegetable extension specialist, Hunter Johnson. Rudiger arranged for Johnson to come to Costa Rica to look into the cause of the failure. Johnson identified the problem as having one common denominator--the lack of appropriate technology. Three contributing factors were identified:

- Inadequate fertilization--Inorganic nitrogen fertilizer had not been applied and the chicken manure had not met the melon's nitrogen requirement; the lack of nitrogen had impeded foliar development in the plant.
- Inadequate control of insects--The insect control steps followed had been ridiculous; the chemicals used did not have any effect on the insects, indicating either that the wrong chemicals were used or not applied properly.
- Inadequate irrigation--A major factor contributing to an inadequate irrigation regime was the nature of the soils of the land on which the melons had been planted. The soils were heavy and did not drain well, leaving the melon plots waterlogged and drowning the plant roots, thereby impeding development of adequate root structure and uptake of the nutrients required to support plant growth.

While Johnson provided Rudiger with a good idea of the conditions that must be established to grow melons successfully, Rudiger notes that his own role was primarily that of being the project's administrator. Nevertheless, Rudiger undertook to track down the information sources that could provide the technological guidance needed to grow melons successfully should TM decide to plant melons in the 89/90 season.

Rudiger started this search by contacting several national-level specialists to arrange for some studies and analyses. On the insect control problem, Rudiger contacted the University of Costa Rica's Department of Entomology. This source proved helpful in identifying EPA-approved insecticides as well as in suggesting preventative control measures based on empirical measurement of insect levels. Also, Rudiger arranged for the university's Department of Agronomy to conduct soil analyses, the results of which provided the basis for a fertilization program. Yet Rudiger could not get all of the answers he felt he needed.

So Rudiger traveled beyond Costa Rica to look for technological guidance. In July 1989, at the invitation of Petoseed, Rudiger traveled with five other melon growers to see melon experiments at the company's experiment station in McAllen, Texas. This is the company that sells the hybrid melon seed used by TM and other melon growers. Rudiger talked with several Texas A&M University scientists who have worked closely on melons in such areas as plant diseases and plant development. These scientists suggested that Tico Melon's 88/89 disaster was characteristic of plant stress which can be brought on by bad management.

Based on his visit to Texas, and still feeling the need for more information, Rudiger was inspired to visit the University of California. With the assistance of Hunter Johnson, Rudiger made arrangements to travel to California from August 1-24, 1989, to meet with 16 scientists and specialists who have been working with melons, some for as many as 30-40 years. He was able to meet with 11 persons. These consultations led to the conclusion that the plants had been subjected to a combination of heavy soils and excess water; excess humidity had impeded respiration of the roots. In effect, the growing conditions had drowned the roots and stunted their growth; thus, an adequate root structure did not develop and the roots were not able to reach water at lower soil levels later in the season. This combination of conditions had brought on a condition called slow vine decline.

The practical conclusion was that melon growing had to be moved to or restricted to soils that are not heavy. While Rudiger did not work with CAAP, the Costa Rican export support organization, in preparing for or carrying out the 88/89 season, he recalls that it was Claudio Zumbado, the CAAP melon program technical coordinator, who was the only person who had tried to warn TM not to plant melons on heavy soils.

Looking to next season, Rudiger cannot say whether TM will plant melons. The firm is facing a go vs. no go decision. Rudiger has identified about 60 ha. as being the most problematic in terms of the soils being too heavy; thus, if TM plants melon, it will only be on the remaining 100 ha. of the original 160 ha. Now TM is considering the possibility of using a system of raised beds as a means of avoiding any possibility of excess water, although this approach will mean that some of TM's machinery will no longer be usable. If TM follows this system, tensionmeters will be used to monitor soil moisture levels. Irrigation by gravity will be used again; while this approach doesn't lead to high yield levels, it also doesn't result in big losses.

On the business side of TM, the company is facing financial difficulties. While ACA is responsible for 45% of the production costs incurred in growing melons during the 88/89 seasons, ACA has yet to return to Costa Rica any of ACA's earnings from the import of melons grown by TM. Rudiger says that TM is looking for another company to serve as broker for the firm's melons. TM would prefer to sell through a broker since the return is larger than if the melons are sold to Chiquita or Del Monte.