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EVALUATION OF
THE AGRO-INDUSTRIAL EXPORT
DEVELOPMENT PROJECT
IN HONDURAS

Contract AID/otr-C-1378, Work Order No. 13

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I. INTRODUCTION

I. INTRODUCTION

Checchi and Company submits herewith the results of the evaluation of the USAID/Honduras project to develop agro-industrial exports (Project 522-0120). The purpose of the evaluation was to study the effects of a \$1.7 million grant to be utilized in the project over a period of three and one-half years. At the time of the evaluation, the project was nearing the end of the second year, a point at which the evaluators could reasonably gauge the direction, actual and potential impacts, and the problems inherent in the project.

The overall project consisted of three elements: a processed vegetable demonstration project; a fresh fruit and vegetable demonstration project; and an institution-building activity. This series of activities was designed to enhance the public sector's abilities to create and support agro-industrial export activities which would directly involve small farmers.

The Checchi evaluation team, comprised of Mr. Ronald J. Ivey and Dr. Kenneth C. Kusterer, commenced their activities on July 2, 1978. Mr. Ivey's assignment was to measure the economic and institutional impacts while Dr. Kusterer undertook the measurement of actual and potential social impacts upon the target group, namely the small farmers. Both utilized the information-gathering technique of open-ended interviews with representatives of government institutions, individuals from private sector operations related to the project, technical assistance providers, and members of farm groups involved in both demonstration projects. In addition, the team participated in briefing and debriefing sessions with USAID/Honduras staff. Of the approximately twenty-four man-days spent in-country, ten were spent carrying out interviews in the field. The intricate logistical requirements involved were met with the invaluable assistance of Mr. Aaron Williams, Project Manager of the Agro-industrial Export Project.

The Checchi team felt that the analytic techniques utilized resulted in a fair and accurate assessment of the project's current status and potential, and the team was thus enabled to make concrete recommendations regarding the project's future.

By way of background to the project, the Checchi team agrees with the Project Paper premise that Honduran economic development is hampered by a lack of domestic buying power and local demand for products of almost any kind. Seventy percent of the population lives in rural areas and the majority of those live under subsistence conditions. The Checchi team feels that this problem was properly addressed by this project aimed at bringing in export earnings to be channeled to the rural poor segment. The most difficult part of such development schemes generally is the provision of a vehicle which will provide direct benefits to the rural segment. The evaluators went to considerable lengths to test such a vehicle in its conceptual form, and feel that the recommendations concerning that vehicle are well-founded and sound.

The report which follows is broken down in the following sections: Section II gives the Conclusions and Recommendations; Section III analyzes the processed vegetable demonstration project; Section IV deals with the fresh fruit and vegetable demonstration project; Section V evaluates the institution building element; and Section VI provides overall timetable and budget recommendations for the future of the project.

II. CONCLUSIONS AND RECOMMENDATIONS

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A. Conclusions

1. General Conclusions

a. The greatest obstacle to the development of the Honduras small-farm agricultural sector is indeed the very small market. At the same time the project's goal of expanding grower's markets is indeed the most effective way to create rapid improvements in farmer's incomes and life situations. The basic concept of the project is excellent.

b. The active time frame of this project has proved to be much longer than originally envisioned in the Project Paper. As a result, only about one-fourth of the funds have been disbursed after almost two full years out of an original three-year project period.

c. The fresh vegetable demonstration project has had a measurable and positive effect upon small farmers, government ministries, and the Standard Fruit Company. One group of farmers chosen for the demonstration was certainly among the most demoralized in the Comayagua area, yet this group is now enthused about what they have learned and the prospects for the future. The two government ministries involved with the project, although not fully cognizant of all of its ramifications, see it as a model which will be applicable to their goals of assisting small farmers and promoting commercialized export products. The Standard Fruit Company felt that much has been achieved with the small farmers, that technical problems can most likely be eliminated thus paving the way for expansion of exports of tomatoes and cucumbers.

d. The processed vegetable demonstration project is at a complete standstill, because Mejores Alimentos, the processor, is averse to working with small farmers and because its current corporate marketing strategy is inconsistent with the export strategy proposed in the Project Paper.

e. Mejores Alimentos suffers from a lack of credibility and acceptability with vegetable growers within its area of influence because of late payments to growers and because of the unwillingness of the company (which enjoys a protected industry status) to pay prices which would allow the farmers some profits while they are solving their yield problems. In this connection, the technical ability of the company agronomists is questionable given the low yields on the company farm.

f. The institution building aspect has had a very limited effect and its spread effects have been minimal. The most notable institution building activity has been the formation of a small embryonic vegetable technician team within the Ministry of Natural Resources. Three graduate scholarships were given to Ministry of Economics officials, and one agribusiness seminar has been conducted.

2. The Processed Vegetable Demonstration Project

a. Mejores Alimentos continues to suffer from a bad reputation arising from its failure to pay some farmers for their produce for up to two years after delivery.

b. Mejores Alimentos' own yields, despite recent improvements, are below the level plant management claims is necessary for farmers to make money.

c. Mejores Alimentos officials simply refuse to pay a price which will enable the farmer to stay in business while bringing his yields up to a point where he achieves profits.

d. Mejores Alimentos is presently incapable of developing a larger raw material supply and cannot enter the U.S. market as originally envisioned in the Project Paper. In fact, the present corporate strategy is to expand its share of the Central American market.

e. In the past, farmers were deterred from dealing with Mejores Alimentos by the requirement that the farmers buy fertilizers and insecticides only through and from the company store. Both groups interviewed complained about the ineffectiveness of these inputs to do what they were supposed to. This requirement has been dropped, eliminating one source of the resentment of farmers.

f. The company is currently attempting to sign five-year purchase contracts with the farmers. These contracts are considered unreasonable by the farmers and will, in our opinion, further enforce the poor reputation this plant has among the growers.

g. Farmers must arrange and pay for transport of their products to the plant. This acts as a further deterrent, especially to small farmers to whom transport costs are not insignificant.

h. The technical assistance provided through the USAID grant was found satisfactory by Mejores Alimentos in both aspects, i.e., processing techniques and marketing. We feel, however, that the company's major problem is neither in technical processing nor marketing know-how, but rather in its inability to acquire raw materials.

i. ~~CONADI~~, as the current major stockholder, is not committed to AID's goal of assisting small farmers or of promoting exports to the U.S. markets. Of all public organizations contacted in the course of this study, it was found to be the least sympathetic to the official Honduran Government policy of aiding small farmer groups. This lack of sympathy is to be found in Mejores Alimentos' management as well.

j. Small farmer impact. This demonstration project differed from the fresh vegetable demonstration project in that it was arranged so that the farmers bore all the financial risks. Both the Las Cañas and San Pablo peasant groups involved lost heavily.

Indications are that the Mejores Alimentos technical team that ran the project was not yet very knowledgeable in the cultivation of tomatoes under Comayagua conditions. Ineffective insecticides were applied and charged to the farmers; one-half of Las Cañas' planting was insufficiently fertilized, apparently due to defective equipment. Planting 50 manzanas at Las Cañas, a group where the labor supply was at that time sufficient to harvest only 10 to 15 manzanas at most, indicates the extent of technical incompetence with which the project was carried out. Under the circumstances, the Las Cañas group's decision to withdraw from the project halfway through must be considered a sound decision--to cut their losses in a disastrous situation. The result of the project was to strongly reinforce polarized opinions that already existed in the Valley, namely against peasant groups on the part of Mejores Alimentos on the one hand, and against the company on the part of the campesinos on the other hand. The two directivas of the peasant groups now take the position that they would never in the future deal with Mejores Alimentos.

3. Fresh Vegetable Demonstration Project

a. The original concept of performing technical feasibility and marketing studies, to culminate in the organization of some structure to operate packing facilities, was well conceived to start with, and has been proceeding quite satisfactorily.

b. The recommendations of the Standard Fruit study have been for the most part implementable, and have resulted in positive demonstration experiences.

c. The incentives built into the project--paying wages to campesinos and of allowing them to sell locally non-exportable product--resulted in misimpressions and possible counterproductive effects. One misimpression is that the company buying the produce will pay them for working in their own fields. The practice of allowing the campesinos to

go directly to the local fresh market with the non-exportable produce may have created some unusual harvesting techniques and a selection bias.

d. Technically, the tomato production is deemed by Standard Fruit technicians to be at least two years away from commercialization. There are fewer technical problems with cucumber production, and these problems could well be resolved during the next growing season.

e. Three to four shipments of tomatoes from the project were rejected by the USDA in New York because of the deteriorated condition of the product. The Quality Control staff of Standard Fruit has investigated the problem but has as yet been unable to pinpoint the cause. It is suspected that handling problems may have caused this deterioration due to the lack of constant supervision of inexperienced packers, and due to equipment which was inadequate for the proper handling of tomatoes.

f. Cucumbers were produced with amazing high yields (one planting in Copan harvested out at 83 tons per manzana). Most of those shipped to New York arrived in very good condition.

g. Top level Ministry of Natural Resources (MNR) officials do not feel that the project is their responsibility, but they are committed to carrying out technical activities connected with it. Project-level MNR personnel, however, view the project as theirs. When the contract with Standard Fruit was signed, it specified that the MNR had project control, a factor which led to minor conflicts. Individual agriculturalists interviewed characterized MNR's general ability to provide technical services as poor. However, the project participants felt that the vegetable technician team's performance was quite satisfactory. During the course of the project, the MNR failed to provide equipment as specified in the contract.

h. The PATSA operation in Choluteca offers important clues regarding the most appropriate model for the organization of a packing

operation. The five-year contract with an international food marketing organization seems to be palatable to farmers and government alike. The missing elements in that project are: (a) ability to transfer ownership to a non-governmental group which functions to serve the need of the producers, (b) lack of training for local talent to take over operation at the end of the five-year contract, and (c) lack of production.

i. If such a management-marketing contract were given to the Standard Fruit Company, it is unlikely that it would allow a campesino-controlled organization to participate in the marketing process.

j. If Standard Fruit were given a management contract, it would most likely pay the farmers using a fixed price contract. This price would be based upon calculating farm production and packing costs and adding a percentage. Standard Fruit uses this pricing practice with cooperatives it has formed for banana production in Honduras.

k. Impact upon the target group. For both groups, this is the first successful collective project that they have experienced. For El Sisín, this success came in the second year of its existence. Las Cañas, however, has been together since 1970. In the wake of the financial rewards they received, both groups have nothing but positive things to say about the project and all cooperating agencies, Standard, MNR, and AID itself. Project results were as follows:

- (1) Reversal of Cañas demoralization and revival of belief in own capabilities.
- (2) Employment of women at salaries equal to men was enthusiastically received by women; and the women's involvement in the project is a small move against the ideology of female inferiority held by most peasant men and women in Honduras.

- (3) Wage rate of L. 3.00 per day was 50 centavos over the legal minimum and helped shift the balance in Comayagua from L. 2.50 to L. 3.00 as the predominant wage paid by larger landowners in the area. In Copán, it was the first time L. 3.00 had been paid; the normal rate previously was L. 2.50, and many landowners were still paying an illegal rate of L. 2.00.
- (4) Massive technology transfer was attempted both in the growing and packing, and it has already been largely successful according to both peasants and agronomists.
- (5) Holding packing plant capital costs to an absolute minimum and using unusually labor intensive technology, even for an industry which is inherently labor intensive, has been an effective way to maximize income benefits to the target population.
- (6) The project demonstrated the desirability of vegetable farming to many groups in the areas who have no vegetable growing experience.
- (7) No groups or farmers in Comayagua or Copán were encountered who did not themselves wish to join this project.
- (8) The project has caused the peasant groups and their affiliate organizations to comport themselves in a more business-like manner and less like a pressure group movement. Also, other asentamientos and even the Comayagua Central ANACH Office have become quite interested in working with "the Company" (Standard).

- (9) ~~The reject cucumbers glutted the national market,~~ which might possibly have harmed other farmers, but it is unlikely that anyone else in Honduras was growing cucumbers as anything but a small sideline enterprise.
- (10) On-farm organizational problems were encountered, especially in the early days of the project. Many of these could have been minimized if the project had followed recommendations regarding production organization made in the Standard feasibility study.
- (11) Standard's decision not to inform peasants or MNR personnel of the tomato shipments' deterioration may turn out to be counterproductive, since these groups cannot help to resolve problems of which they are unaware. Likewise, the lack of cost information provided to the peasants and their ANACH or UNC accountants by the MNR or Standard inhibits the peasants' ability to understand the realities of the production and cost process.
1. Interest of CONADI in the project.
- (1) CONADI is interested in investing in a fresh vegetable plant to be constructed alongside the Mejores Alimentos plant, possibly as an adjunct to that plant. Mejores Alimentos has marketed a few loads of tomatoes, cucumbers, and limes to the U.S. during the most recent growing season.
- (2) CONADI can legally lend to cooperatives. On one hand, it has never done so and seems averse to the idea. On the other hand, CONADI stated that it would participate in financing any project that AID provided money for, even if the capital outlay was less than the minimum required (L. 750,000).

m. There are currently in the Comayagua Valley 30 to 50 experienced medium-sized tomato farmers, capable of planting an average of 20 manzanas (acres) each. Once technical problems are overcome, there should be no problem in rapidly increasing the scale of exports to fully commercial levels.

B. Recommendations

1. Project Length

USAID Project Management has prudently held disbursements to less than one-fourth of total funding. Given the realities of this project, it is recommended that the project term be extended by four years. This should allow for successful investment of the remaining funds.

2. Processed Vegetable Demonstration Project

a. USAID/Honduras Project Management should approach Mejores Alimentos to provide technical assistance in the form of a financial feasibility analysis of that company paying more for the product, providing additional field services, and providing transportation for small farmers, all measures to increase raw material supplies and to obtain an increase in company profits through expanded production.

A brief regional analysis of the market for canned tomato products should be performed to determine whether the PADEC contract should be terminated, or activated in the near future.

b. If (a) gives positive results, sign an agreement with Mejores Alimentos providing that, if the company agrees to purchase raw materials from small farmers, AID will subsidize the hiring of one or possibly two agronomists to work exclusively with small farmer individuals and groups.

c. If (b) recommendation brings about positive results, consider technical assistance in the form of a plant pathologist to assist the company to solve farm production difficulties.

3. Fresh Project Recommendations

a. Due to the technical growing and marketing problems still to be resolved, and the constraints presented by the need to plant these vegetable crops at the right time or be faced with highly diminished yields, it is recommended that USAID/Honduras move immediately to put into effect a project management contract with the Standard Fruit Company to repeat the production and marketing experiments carried out last year. Standard Fruit would provide a full time project coordinator. This contract should provide for upgrading the handling capability of packers and the receiving and sorting equipment. Specific research activities should be undertaken to solve problems of bacterial wilt (La Entrada), angular leaf spot (La Entrada); and in both locations, handling and logistics problems, fertility and fertilization, insect control and definition of equipment requirements. These are specific activities estimated to require one full year.

b. It is recommended that the Ministry of Natural Resources in coordination with the project, plant test plots with two more groups having one manzana or less of the two key crops.

c. It is recommended that the packing plant be placed on a businesslike basis with ordinary controls, standards, and the like.

d. The packing plant should purchase the entire production, taking the responsibility for placing the unexportable product on the local fresh vegetable market.

e. Participating farm groups should be assisted in obtaining farm production credit which will enable them to pay themselves for labor

provided during the growing season. Standard Project Coordinator will assist in making necessary financial and loan calculations based on last year's labor records.

f. A management contract providing for four years of project coordination, agronomic outreach, counterpart training, and technical research be prepared during this year so that it can be let and the management can be in place well in advance of the 1979 planting season (starts in September).

4. Implementation Recommendations: Comayagua

a. Implementation program should provide for a four-year management contract which provides for counterpart training of carefully identified campesinos to serve as manager, para-agronomists, and a bookkeeper at the end of the contract period. Under the contract, the firm chosen would provide a Project Manager who would: (1) organize the producer's cooperative; (2) organize and manage the packing operation, set up the books and train the bookkeeper.

Contractor would also provide two agronomists who would work to solve farm production problems, and who would train two counterpart para-agronomists.

Research activities as mentioned above would continue until production difficulties are ironed out; farm production would be maintained at near present levels until such time that technical problems no longer appear as obstacles.

b. During the second year the contracted Project Manager hires "para-agronomos," purchases one tractor and implements. An equipo técnico is formed utilizing contracted agronomists, MNR agronomists, and para-agronomists. MNR agronomists work in project with an emphasis on research

and test plots in and outside of the project area, At the point that technical problems seem resolved, the Project Manager moves to organize open-membership co-op for any interested grower. Packing cooperative should be set up on a cost plus basis, to pass on as much economic benefit as possible to its members.

c. During the third year the Project Manager will identify and hire the Manager Counterpart. A market familiarization tour should be organized in which the project management, counterparts, and some key farmers will travel to study first hand the agribusiness system through which they will be marketing their product.

d. Fourth year activities could include the beginning of the full-scale tomato operation, the location of the packing plant in a neutral location near raw material supply and infrastructure. USAID/Honduras channels soft loan through appropriate ICI for construction of packing plant to be valued at \$250,000 including equipment. Cooperative is to be capitalized over a period of time by deducting small amount paid to members for each pound marketed through the packing plant. Members receive shares which represent amortization of the loan.

Interim packing plants are constructed in other cultivation areas as needed.

5. Implementation Recommendations: Copán

a. Present operation should be repeated under contract with Standard. A possible additional asentamiento member's plot should be set up in La Jigua.

b. The operation should be set up on a business-like basis, lending to farmers, and purchasing their produce. Emphasis should be on cucumber sales.

c. During the second year, determine whether tomato technical problems are soluble with vegetable production remaining as a viable alternative for campesino. Evaluate commercial scale possibilities in the area, which has no irrigated asentamientos, and no flat-land small farmers.

6. Institution Building

a. In general, institution-building activities should be de-emphasized.

b. Give some limited institution support to bolster the Ministry of Natural Resources capabilities in vegetable research and extension.

c. Continue the INCAE Seminars which gives upper-level Ministry officials an opportunity to stay abreast of non-traditional agribusiness trends.

d. It seems to make a little difference to the success of the project whether the informal, cooperative arrangement among USAID, Ministry of Economy, and Ministry of Natural Resources continues or whether GOH project responsibility is shifted to the MNR completely. The management contract concept seems acceptable to the Ministries as a project implementation vehicle, with the contractor taking real project management responsibility.

III. PROCESSED VEGETABLE DEMONSTRATION PROJECT

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A. The Original Concept, Budget, and Activities

The Project Paper called for a demonstration activity which would rely heavily upon an already existing food processor, Mejores Alimentos S.A., to carry out the following activities: (1) to act as the instrument by which small farmer tomato cultivation could be increased; (2) to increase the company's tomato paste production; and (3) to export tomato paste to U.S. institutional markets. Test production was to have been done with whole peeled tomatoes and pizza sauce which would ultimately have been marketed to the U.S.

Mejores Alimentos is the largest food processor in the country, presently marketing 60,000 cases of tomato products and earning the most foreign exchange of any Honduran company exporting to other Central American countries.

The Project Paper set high and optimistic project goals in that at the end of Phase I, 20,000 tons of tomato production would be forthcoming from 1,000 manzanas of land in the Comayagua Valley. Of land in tomato cultivation, 325 manzanas were to be cultivated by Comayagua small farmers. The activities were to be concentrated in 10 agrarian reform communities consisting of 292 families. Both the processed and fresh demonstrations have shown that the Project Paper far overestimated the amount of tomato cultivation which could be effectively carried out by peasant groups. The economic impact in terms of raw material purchases would have amounted to approximately \$325,000. ?

USAID proposed to assist Mejores Alimentos to achieve these goals through a series of technical assistance and training inputs. The Project Paper planned for a tomato agricultural specialist (36 m/m); two agricultural internships (6 months minimum each); and the preparation of marketing guides to assist Mejores Alimentos' U.S. export activities.

The technical and financial inputs were to have been coordinated by the Project Management Group of Directorate General of Foreign Trade in the Ministry of Economy. The following budget was detailed for this demonstration project:

	(U.S. \$000)
Tomato Agricultural Specialist	\$ 150
Agricultural Internships	20
Tomato Processing/Canning Expert	15
Marketing Guides (3)	<u>50</u>
 Total Processed Vegetable Demonstration Project:	 \$.235

B. Project Activities Undertaken

1. Technical Assistance

Technical assistance was provided to Mejores Alimentos through a contract between the Ministry of Economy and the World Trade Institute of New York City. Some of the funds used to pay for World Trade's work came from a previous AID export promotion grant, but \$22,000 were spent under the grant evaluated. There is no clear indication either in the project documents or in the minds of the Mejores Alimentos management as to when one portion of the contract ended and the other began; therefore, the entire technical assistance effort was evaluated from the standpoint of the total World Trade Institute performance.

The World Trade Institute specifically provided marketing assistance regarding tomato products on the U.S. market. Ultimately, a small tomato paste shipment, some ten cases of number 10 cans, were sent to New York for laboratory tests. The results were that, while the quality was not notably high, the product could be marketed without problem. A group of companies were contacted which might be interested in handling the product,

and two, Goodee and Katz, were encouraged to travel to visit the Comayagua plant. Apparently, a great measure of World Trade's assistance came through long distance telephone calls and telexes giving "flashes" on potential markets and buyers.

World Trade sent a production technician, Mr. Don Casper, to assist with processing problems connected with the tomato paste, and to develop peeled whole tomatoes and pizza sauce formulas. It was reported that output increased as the result of following this consultant's recommendations.

2. Test Production and Marketing

Mejores Alimentos ownership originally viewed this export promotion program as a very good opportunity to diversify and to expand into new markets. Mejores Alimentos management prepared at one point to send a rather large tomato paste shipment to the U.S. for marketing through World Trade Institute contacts. In the meantime, the regional tomato paste market was changing rapidly due to external factors, namely, tomato crop failure in Guatemala. In addition, regional processed foods demand had doubled and perhaps tripled, according to Mejores Alimentos' management, due to the "coffee boom" experienced throughout the Isthmus. It was known that Kern's, a Guatemala-based operation, was suffering because of a lack of raw material. Mejores Alimentos' owners decided that it was not the appropriate moment to expand into the U.S. market where they were for the most part unknown and their production of tomato paste would be a "drop in an agribusiness ocean." They decided instead to increase their market share over Kern's and shipped the tomato paste to Guatemala. Thus, the U.S. market test was never carried out.

World Trade also marketed some canned green beans which Mejores Alimentos had processed. This was a minor attempt to make the plant more productive, since it only achieves 55 percent capacity now during peak

season. They also marketed through WTI several loads of fresh tomatoes, some pickling cucumbers, and a small amount of limes with Mejores Alimentos acting as the packing plant.

C. Opinions of the Recipients

The major test-marketing activity through WTI never was carried through. Nevertheless, Mejores Alimentos' management was very satisfied with the services both from a technical process and marketing standpoint. When it was learned that the Minister of Economy did not want to continue the WTI contract, the plant manager wrote a letter to the Minister stating his positive feelings regarding the assistance and requesting that the WTI contract be continued.

In the Ministry of Economy, there were doubts as to WTI's capability. For example, rather than news flashes on prices from the U.S., it was felt that it would have been more helpful to receive information on trends in quantities, qualities, etc. While lists of buyers were provided, no real idea was given as to how they fit into the U.S. processed fruit and vegetable marketing system. One of the principals in Mejores Alimentos opined that the reason the Ministry did not like WTI was that Bob Keller, the key man from WTI on the project, was very aggressive and bright and that this most likely made the Ministry people uncomfortable.

It was decided in the Ministry that bids should be let to determine whether a better firm in the field existed. PADEC, an industrial engineering and marketing firm, won the bid. In an objective evaluation WTI did not measure up as well. PADEC apparently has also given technical assistance to a San Pedro Sula frozen food operation which is rumored to be going bankrupt, no comforting fact for Mejores Alimentos' owners and management.

To date, PADEC has not been able to proceed with its work because it has been determined by USAID/Honduras that Mejores Alimentos did not

purchase raw materials from small farmers. No one connected with Mejores Alimentos understood the problem of the small farmer element and felt that the failure of PADEC to show up to provide technical assistance was testimony to the quality of firm chosen by the Ministry of Economy. Mejores Alimentos' management did confirm the fact that currently they are not dealing with any small farmers; all of their non-company production comes from twenty-two medium-sized tomato growers. The company has recently hired Fran Garcia, a Dominican, who apparently has considerable experience with organizing the production of small farmers in his own country. Nevertheless, the experience that Mejores Alimentos has had with small farmers and asentamientos may not make that an easy task.

D. Evaluation of the Processed Vegetable Demonstration Project: San Pablo and Las Cañas, 1976-1977

As described in the Project Proposal, Phase I of the processed vegetable demonstration project was to consist of ten asentamientos producing 325 manzanas under contract to Mejores Alimentos. It was expected that an internationally experienced tomato agricultural expert would be hired by the project to train and supervise technicians both from the MNR and from the plant to provide technical assistance to the small farmers.

These projections were patently over-optimistic, since they called for the participation of every irrigated asentamiento in the Comayagua Valley in the first year of the project. In calling for an average planting (32.5 manzanas) that exceeded the labor capacity of any of these asentamiento groups, it assumed prior tomato cultivation experience on the part of these peasants (actually only five to ten percent of them had ever grown tomatoes in the past), and it assumed that both the MNR and Mejores Alimentos had technicians available with some tomato experience.

The actual Phase I of the project was considerably scaled down, from ten asentamientos to two and from 325 manzanas to 66.^{1/} Yet it was

^{1/} Fifty manzanas in Las Cañas and either five manzanas or sixteen manzanas in San Pablo. AID and Mejores Alimentos officials described the San Pablo planting as "around five manzanas;" San Pablo Directiva members state that it was sixteen manzanas.

still too large. By the time the Project Agreements were signed, it was too late to hire a tomato agricultural specialist, but Mejores Alimentos did hire Mr. T. Waki, a Japanese tomato technician with extensive production experience in the Dominican Republic. He was at the time Mejores Alimentos' only agricultural technician, responsible both for the company's own farm production, for assistance to other medium-size outgrowers, and for assistance to the two asentamientos participating in the processed vegetable demonstration project. The Ministry of Natural Resources also provided four technicians to the two asentamientos, but these four remained an enigma to this evaluation team, who could find no record of their presence. These four were not from the special Vegetable Section, so even if they were actually at times present in the field, they could have had no training or previous experience in vegetables or tomatoes. In any case, they seem not to have provided any inputs, positive or negative, that are still remembered a year later by the peasants involved.

The entire burden of technical assistance in the project thus fell on the shoulders of Mr. Waki, who had just arrived in the Comayagua Valley and could not have been familiar with local growing conditions. Even aside from this factor, he must have been functioning under an extraordinary work load, since he was expected to oversee this project as well as dramatically improve the disastrously low yields that both the plant and its traditional outgrowers had been recently experiencing.

As Phase I of the processed vegetable demonstration project got underway in January 1977, then, it already had several strikes against it. Most importantly, the tomato processing know-how that the project had assumed was in the field was simply not present. Only one technician had any previous tomato experience, and his efforts were spread very thin. Only four or five out of the almost 100 participating asentamiento members had ever had any previous tomato cultivation experience. Also, the Las Cañas plot was simply too large for the amount of labor available, even if the labor had been skilled and experienced tomato farmers. These were all

factors working against the productive success of the project as a whole. The specific contractual arrangements between Mejores Alimentos and the asentamientos contained a variety of other factors that even further decreased the likelihood that the project would be a financial success for the small farmers involved. The fixed contract price was L. 100 per metric ton, a reasonable price in comparison with prices paid to farmers in other parts of the world, but a price considerably below the break even level at the Comayagua Valley's average yields--below the break even level, in fact, for the yields that the company had so far been able to attain on its own farms. In actual practice, this price was considerably lower. The farmers had to pay their own transport to the plant, and when the shipments did arrive at the plant, they were considerably discounted for substandard quality, 15 to 20 percent in the case of San Pablo shipments and 25 to 30 percent in the case of Las Cañas. Finally, the peasants were surprised to discover that the ton in question was a "long ton" or metric ton, still another factor which lowered the price below anticipated levels.

Other contract features were as disadvantageous to the farmers as the prices. The Mejores Alimentos technician had sole discretion over decisions regarding necessary inputs. All such inputs had to be purchased (or in the case of equipment, rented) from Mejores Alimentos itself. The costs of these inputs were simply billed directly from Mejores Alimentos to the development banks that were providing production credit to the asentamientos for the project. Asentamiento members and leaders had no control whatsoever over decisions affecting this mounting debt.

The project was a failure for all parties concerned, but as a result of these particular financial arrangements, the only economic losses fell to the small farmers, who in effect paid for AID, the MNR, and the Mejores Alimentos to gain needed experience and lessons. Total losses for the Las Cañas asentamientos were L. 31,600 or L. 458 per asentamiento household. Losses at San Pablo were L. 16,617, or L. 594 per asentamiento household. (See Table III-1)

TABLE III-1

PROCESSED VEGETABLE PROJECT, PHASE I RESULTS, 1976-77

	<u>Las Cañas</u> <u>(50 mzs.)</u>	<u>San Pablo</u> <u>(16 mzs.)</u>
Total Costs ^{1/}	L86,600 ^{2/}	L28,472
Total Sales ^{1/}	<u>55,000</u>	<u>11,855</u>
Net Profit (Loss)	(31,600)	(16,617)
Optimal Projected Sales ^{3/}	70,000	22,400
Optimal Projected Profit (Loss)	(16,600)	(6,072)

1/ Figures reported by asentamiento directiva members.

2/ Las Cañas terminated participation in the project before all recommended costs had been incurred. Total costs (and possibly sales) would have been higher if Las Cañas had participated through to harvest.

3/ Figure derived from two optimizing assumptions: no discounts on delivered tomatoes due to quality problems, and yields equivalent to the best Mejores Alimentos was able to obtain that year on its own farms (14 tons/mz).

Pinpointing the exact cause of the technical and financial failure of this phase of the processed vegetable demonstration project is a difficult and perhaps even fruitless undertaking. The problem is there were many ill-conceived aspects, any one of which might have been sufficient to lead to the project's failure. Singling out any one of these and labeling it as the cause of the failure is unrealistic. Nevertheless, some discussion of the principal problem areas will be helpful to avoid such disasters in the future. These three areas are: the price and contract arrangements, the technical assistance, and the cooperation of the peasant group members.

1. Price and Contract Arrangements

The price offered was simply too low, unrealistically low. At L. 100 per ton, it would have taken yields unprecedented in the Comayagua Valley to achieve returns to the peasants that would have compensated for their labor time at even the legal minimum wage. Indeed, immediately after the project was over, Mejores Alimentos did raise its price to L. 120 per ton, probably as a result of strong competitive pressures from Guatemala buyers. This new price is still too low for the prevailing yields in Honduras, but it is a large improvement over the price offered in the processed vegetable demonstration project.

The requirement that all inputs be bought directly from the Mejores Alimentos was bitterly resented by all of the peasants interviewed. The only legitimate justification for this is the existence of a "whole technological package" with precisely determined requirements, but as will be discussed below, Mejores Alimentos did not have then and still does not have such an effective technological package. As a result of the continuing bitter opposition from growers, Mejores Alimentos plans to drop this exclusive purchase requirement from its 1978-79 contracts.

According to all the peasant participants in the project, the contractual price was something of a mythical figure, anyway. San Pablo's

deliveries were invariably discounted at the plant by a factor of 15 to 20 percent because of poor quality; the discount rate on Las Cañas' deliveries was 25 to 30 percent, also due to poor quality. By harvest time, the Las Cañas group had unilaterally abrogated its contract with the processor, and had refused to follow the plant agronomist's advice. So it is conceivable that their product was of extremely low quality; nevertheless, the discount rates were inconceivably high for the San Pablo group also, even though they continued to follow the plant agronomist's advice from beginning to end. It is impossible to judge the validity of the plant's quality discounts, of course, without actually inspecting the delivered fruit. It is hard to imagine, though, that the quality of delivered fruit could have been that poor, since the quality requirements for tomato paste processing are so much lower even than the relatively low local market quality standards. Quality discounts in the 15 to 30 percent range are also apparently inconsistent with the plant manager's statement that the plant's overall reject rate on raw materials delivered has never surpassed one percent.

Although Mejores Alimentos has raised its price since this demonstration process project and liberalized its contract requirements in some areas, it has also, because of the same competition from Guatemalan buyers, sought to tighten the contracts in other areas. Beginning with the 1978-79 harvest year, the plant is only signing contracts with outgrowers who are willing to sign five-year contracts. Prices are not fixed, but will be set on a year-to-year basis by the plant, but growers are required to guarantee the contracted acreage to Mejores Alimentos for the next five years. As a result of this new policy, the plant is likely to lose some of its outgrowers. Three (out of a total of 22) of the independent growers who had 1977-78 contracts with Mejores Alimentos were interviewed; two said they would not sign contracts with the plant under this five-year condition; and the third said that he would sign a contract, but that he was reducing his contracted acreage to keep some of his options open.

2. Technical Assistance

The project had expected that technical assistance would be available from the project itself (the tomato agricultural expert that Project Proposal anticipated was to have been hired through the PMG), from the Ministry of Natural Resources, and from the plant. As the project actually developed, only the plant was able to provide a technician with any tomato experience.^{1/} It would be unjust, therefore, to criticize too harshly the plant's technical assistance, since it was the only participating agency that provided any technical assistance. But there are some indications that the plant's technical assistance was somewhat deficient. Peasants in both asentamientos are still bitter about the ineffective insecticides they were required to purchase and apply. Independent out-growers who visited the Las Cañas cultivations stated that one-half the plot was obviously under-fertilized, probably due to technical problems with the plant's fertilizer spreader. The same technician supplying the same "technical package" as was applied on the asentamiento plots was only able to achieve average yields of 14 tons per manzana on the plant's own farms. Finally, there is the observable contrast between the yields Mejores Alimentos was able to attain at Las Cañas and the yields of fresh tomatoes that Standard Fruit and the MNR were able to obtain on the same land with the same labor one year later. Mejores Alimentos simply does not have the same level of agricultural expertise available to it that Standard has, and the processed vegetable demonstration project has not so far provided any of the technical assistance in the agricultural area that was envisioned in the Project Proposal.

3. Peasant Group Cooperation

Mejores Alimentos and other independent farmers in the Comayagua Valley ascribe the failure of the processed vegetable demonstration project

^{1/} The MNR's newly formed Vegetable Section was not involved with the processed vegetable demonstration project, but was at this time exclusively working on the fresh vegetable side of Agro-Industrial Project.

primarily to the lack of motivation and cooperation on the part of the asentamiento group members, especially at Las Cañas. The groups were disorganized, they say, unable to supply required labor, inefficient when they did come to work, unwilling to follow technician's instructions, and untrustworthy (that is, because they secretly harvested Mejores Alimentos' tomatoes for sale at higher prices to the fresh market). As the project developed, it is undoubtedly true that all these problems did arise. But this does not necessarily mean, as Mejores Alimentos and larger independent farmers believe, that these problems derive from inherent characteristics of land reform peasant groups. These behaviors may just as well imply only a temporary demoralization due to disenchantment with the project as it was designed. Given the parameters of the project design, peasant perceptions that their labor time would not be recompensed, that the project would leave the group as a whole heavily in debt, that technical assistance and technical supervision were insufficient and ineffective--all of these perceptions were in this case accurate. Under these circumstances, anything the peasants could do that would minimize their investment of time and money in the project can just as fairly be attributed to rational economic intelligence as it can be to inherent laziness or uncooperativeness.

The Las Cañas peasants believe that they officially withdrew from this project midway between planting and harvest. They ceased applying the project-recommended inputs, and they undoubtedly also ceased to consider Mejores Alimentos as the sole rightful purchaser of the product. The rationality of their decision to withdraw can be demonstrated by the numbers. Expenses were cut way down. The reported L. 55,000 sales figure is extraordinarily high, under the circumstances (see Table III-1). At Mejores Alimentos prices, this figure implies yields of 13 to 14 tons per manzana, a yield figure that would indeed be extraordinary, considering that the asentamiento literally abandoned the insufficiently fertilized half of their 50 manzana planting. The only other explanation for such a high sales figure is that a considerable proportion of the production was indeed sold at open market prices, which at that time were running more than double

what Mejores Alimentos was offering. From the point of view of the Las Cañas peasants, they had been drawn into a technically unfeasible, financially unworkable project, and they had used their ingenuity to do the best they could to minimize their losses.

4. Negative Demonstration Effect

The processed vegetable project has had a negative demonstration effect in the Comayagua Valley. It took place during a year of real opportunity for both asentamiento members and Mejores Alimentos. At the start of the 1976-77 growing season, Mejores Alimentos was just emerging from a prolonged period of extreme liquidity crisis, thanks to the new infusion of CONADI capital. In the previous growing seasons, the plant had been unable to fulfill some contracts with medium-size outgrowers, and it had been forced to delay payments for delivered goods for periods ranging up to two years. Traditional medium-sized tomato growers in the Valley were, to say the least, increasingly reluctant to deal with the plant. The plant was forced to look to new sources of supply, and was by force of necessity willing to overcome its previous reluctance to deal with land reform groups. At the same time, the first small irrigation systems in the Valley had come on line in a few of the oldest and best established asentamientos, like Las Cañas and San Pablo.

In other words, the 1976-77 growing season was an unprecedented opportunity for small farmer-processing plant cooperation in the Valley. For the first time, small farmers had the irrigation infrastructure necessary to grow tomatoes, and for the first time the plant was willing and maybe even a little eager to work with small farmers. As a result of this demonstration project, however, this opportunity has been lost and the possibility of small farmer-processor cooperation has been set back at least several years. The land reform farm sector, which had never previously had any direct contact with the plant, now shares the same very low opinion of Mejores Alimentos that traditional tomato growers had already acquired as

a result of the previous liquidity crisis. The plant management, on the other hand, has reconfirmed its prior belief that land reform groups are by their nature incompetent, disorganized, uncooperative, and unwilling to work.

Fortunately for the overall evaluation of the Agro-industrial Project, it appears that the fresh vegetable demonstration project has already begun to reverse the negative demonstration effect of the previous year's processed vegetable demonstration project. The technical and financial success of the fresh project and the incipient good relations between the asentamientos and Standard may yet force a reversal of the negative stereotypes that both agri-businesses and land reform groups have received in the Comayagua Valley.

E. Potential Economic Impact upon the Target Group

Determination of economic impact upon the target group becomes an especially difficult problem because of (1) the poor reputation of Mejores Alimentos as a purchaser of raw materials in the Comayagua Valley even though the price does not vary radically from prices paid elsewhere in Central America, and (2) the competitive role that the fresh fruit and vegetable demonstration project could play in the near future in the same Valley. Whether small farmers would be willing to grow for Mejores Alimentos even under a one-year purchase agreement is questionable at this point. Whether they would continue after the first year to set aside a portion of their lands depends upon their ability to obtain high yields. Given the present workload of the Mejores Alimentos fieldmen, i.e., assuring that production is forthcoming from Agricola de Honduras fields and from the twenty-two medium-sized farms affiliated with the company, the evaluators are not confident that Mejores Alimentos will be able to assist small farmers in getting such high yields.

It should be noted that the company is constrained from acquiring more property by Article 39 of the Agrarian Reform Law. Therefore, any

further cultivation of processing tomatoes must be done by agriculturalists not affiliated with the company.

Mejores Alimentos presently is contemplating working with two asentamientos, San Sebastian with 20 families, and San Paulino with 25 families. Each group owns 140 manzanas, with a portion of each area under irrigation. For our calculations, we have assumed that each group chooses to cultivate five manzanas of processing variety tomatoes. We have assumed that each asentamiento has adequate manpower to carry out this activity and other subsistence agricultural activities without bringing in outside labor, except for tractor drivers who are assumed not to be available at the asentamientos. The price used was Mejores Alimentos' current price of L. 120 per metric ton discounted by L. 10 to become an F.O.B. Asentamiento price, where Mejores Alimentos provides transportation from the two areas to the plant. Different yield levels were utilized in the calculation: 18 metric tons per manzana, the current company farm yield; 25 metric tons per manzana, a healthy intermediate yield; and 30 metric tons, the yield of the most successful independent grower for Mejores Alimentos.

Tables III-1 and III-2 must be regarded as complementary analyses. Table III-1 develops the tonnage for sale by these two groups at various yields. Table III-3 disaggregates the farm and harvesting costs to determine what portion of those would go to the members of the communities for their labor. Farm costs are calculated as though these asentamientos utilized outside labor which is paid L. 3.00 per day. Once this disaggregation was accomplished, returns to labor were added to the profits or losses to determine how much the groups would receive for their efforts.

Table III-1 shows that at an 18-metric ton yield the members would receive only L. 36 to L. 45 per family for their labor. At a 25-metric ton yield the members of the San Sebastian group would receive L. 319 per family; the San Paulino group would receive L. 255 per family. If a 30-metric ton yield were achieved, San Sebastian families would receive L.455,

TABLE III-2

PROJECTED PROFIT AND LOSS
 SAN SEBASTIAN OR SAN PAULINO ASENTAMIENTO
 (Expressed in Lempiras)

	<u>5 Manzanas 18 MT Yield</u>	<u>5 Manzanas 25 MT Yield</u>	<u>5 Manzanas 30 MT Yield</u>
Yield	90	125	150
Reject (Rate: 1 percent) ^{1/}	<u>.9</u>	<u>1.25</u>	<u>1.50</u>
	89.1	123.75	148.50
Sales to Mejores Alimentos ^{2/}	9,801	13,613	16,335
Farm Cost ^{3/}		10,609	10,609
Land Preparations	642		
Planting	1,743		
Farm Maintenance	1,271		
Pest Control	4,782		
Irrigation	2,171		
Harvesting (14¢ per box)	<u>739</u>	<u>1,026</u>	<u>1,232</u>
Total Cost - FOB Asentamiento	11,348	11,635	11,841
Profit (Loss)	(1,547)	1,978	4,494
Return to Labor (See Table III-3)	<u>4,120</u>	<u>4,407</u>	<u>4,613</u>
	2,573 894	6,385	9,107
Return to San Sebastian Family (20)	45	319	455
Return to San Paulino Family (25)	36	255	364

1/ Based on Mejores Alimentos management's statement.

2/ Prices of L110 per long ton is current Mejores Alimentos price discounted by transportation factor.

3/ Farm costs calculated as though all outside labor is used. Return to labor from Table III-3 is used later in the calculation to determine return to each family for its labor in the production process.

TABLE III-3

ESTIMATED DISAGGREGATION OF FARM COSTS
SAN SEBASTIAN OR SAN PAULINO ASENTAMIENTO

(Expressed in Lempiras)

	<u>Asentamiento Labor</u>	<u>Other Labor</u>	<u>Materials And Equipment</u>
<u>Land Preparation</u>			
Plowing and Subsoiling	0	30	348
Disc Weeding	0	15	117
Disc and Drag	0	15	117
<u>Planting</u>			
Labor and Equipment	85	0	8
Seed	0	0	793
Fertilizer	0	0	857
<u>Farm Maintenance</u>			
Cultivation	475	0	0
Thinning	82	0	0
Side Dress	714	0	0
<u>Pest Control</u>			
Labor and Equipment	900	0	121
Materials	0	0	3,761
<u>Irrigation</u>			
Labor	1,025	0	0
Fuel/Lubricants	0	0	921
M & R	100	0	125
<u>Harvesting</u>	<u>739</u>	<u>0</u>	<u>0</u>
	4,120	60	7,168
Harvesting Increment at 25 Metric Ton Yield	<u>287</u>	—	—
	4,407	60	7,168
Harvesting Increment at 30 Metric Ton Yield	<u>206</u>	—	—
	4,613	60	7,168

and San Paulino families would receive L. 364. These returns appear relatively low--indeed labor would be valued at less than the legal minimum wage at an 18-ton yield. However, at a 25-ton yield the families can earn more than legal minimum for labor. These incomes can be achieved in four months' time, and the groups can still grow their subsistence crops in the rainy season. Higher yields could be achieved, but we are not yet confident that this could be achieved in the short term. The fresh produce demonstration in Comayagua achieved a yield of 35.7 metric tons per manzana from the first planting, but the yields declined to 24.8 and 18 metric tons per manzana from the second and third plantings.

It may be necessary for Mejores Alimentos to pay a higher per ton price which would certainly stimulate production--however, before a price increase is recommended, calculations would have to be made as to what this would do to the company vis-a-vis its competition. Mejores Alimentos currently enjoys a protective tariff which enables it to raise its wholesale prices to the level of its competitors. This advantage plus tighter management control through CONADI enabled it to turn a reported half million Lempira profit in 1977.

F. Status of the Project

1. Commitment by Mejores Alimentos

At present, this project is altogether stalled as a part of the overall USAID agroindustrial export project because: (1) the present corporate strategy is directed toward increasing its share of the Central American market; and (2) Mejores Alimentos has an aversion to purchasing raw materials from small farmers.

With regard to the first point, it is felt that given the problems of Kern's in Guatemala and the reported increasing regional demand for processed food products, we see that the decision to enter the Guatemalan

market with tomato paste originally destined for the U.S. was a wise short-term business decision. Moreover, we do not see marketing capability as a particular deficiency in the Mejores Alimentos operation. For example, four years ago the company shipped 200 tons of tomato paste to New York during a time of especially high prices. They have also marketed a fair number of shipments of grapefruit, papaya, and other fruits outside of Central America. In addition, Grupo Galaxia, which initiated the company and continues to hold 33 percent of the shares, is the holding company for several household product lines. As a firm, it markets and advertizes these lines in the Central American regional market with a relatively high level of sophistication.

The regional market for processed tomato products may well be saturated in the near future. Even though Kern's appears to be floundering, Del Campo of Costa Rica has opened a processing subsidiary in Guatemala, to increase its share of the market there; and IFRUGALASA in Nicaragua has opened the most modern tomato processing plant in Central America and is seen as a strong future competitor. At the point of regional saturation, if that point is reached, the U.S. market would appear to be a likely outlet for Mejores Alimentos products. Even so, it appears that the marketing assistance provided by the World Trade Institute, even though the recipients deemed it as good quality work, may have been premature or irrelevant. On the positive side, if WTI did nothing else, they made Mejores Alimentos realize that it would be a very small element in the U.S. processed vegetable market. Mejores Alimentos realized it could not get very far pushing its Naturas label approach in the U.S., but it should find some connections to the institutional market and utilize them to move products not needed for its Central American distribution system.

With regard to the second point, the unwillingness of Mejores Alimentos to purchase from small farmers, the company says that their problem is agricultural production--yields. They do not have the resources to assist independent farmers and groups to raise production while the company farms

are producing yields which, according to the company's own arbitrary break-even point of 20 metric tons per manzana, are not producing a profit. Kern's in Guatemala never developed a strong technical assistance linkage to farmers. That company is currently facing an acute nematode problem. Rather than working with farmers to resolve the problem, they refuse to purchase tomatoes after the land has been used for eight years, the period of time they feel it requires for the nematode damage to make the yields unfeasible. They simply find other farmers to work with who have never grown tomatoes before. This technique, by and large, has resulted in the raw materials shortage which the company faces today.

Mejores Alimentos attributes their efforts to develop and transfer the technology to farmers, large and small, as one of the reasons for the early large losses of the company. The company still smarts from the fiasco in the Las Cañas and San Pablo communities. CONADI, which holds 63 percent of the Mejores Alimentos shares, has a strong aversion to small farmers as a result of the Las Cañas failure. The CONADI source said that they have "an enormous fear of dealing with asentamientos. We had an experience with the Las Cañas asentamiento. Their yields were very poor; their profit was poor or nothing. We're talking volume here and it's not possible to get yields and the kind of volume we need out of asentamientos."

2. Recommendations to Increase Small Farmer Participation and for Continued Project Support

It is felt that the three most effective ways to increase small farmer production, if Mejores Alimentos earnestly decided to deal with small farmers again, are: (1) prices which will enable them to receive enough returns to sustain their efforts until they can achieve really profitable yields; (2) transportation to get the product from the farm to the plant; and (3) intensive technical assistance on a day-to-day basis.

The recommendations to achieve small farmer participation are as follows. USAID/Honduras should approach Mejores Alimentos with a technical

assistance package which would provide for financial analysis and planning which would test whether a price increase would stimulate farm production on an overall basis for the plant. It should be noted that a L. 10 increase per metric ton is only an increase of L. .005 per pound of raw material. Given the tariff which applies to the company's products and the reported per unit margin the company is now receiving at the wholesale level, it seems quite feasible that relatively small farm price increases can be made which would stimulate farm production while maintaining a competitive wholesale price. Included in this task must be some sort of price responsiveness survey to determine probable supply changes from incremental price increases.

This financial analysis should be carried out with a brief market analysis for the Central American sales of processed tomato products. If saturation of the market is not at hand, and if the regional demand is growing as quickly as has been suggested, there is little use to maintain PADEC "in the wings" for a technical assistance activity which may be premature and of little value to Mejores Alimentos.

In this financial analysis it should be determined at what cost transportation could be provided to small farmers and groups who are cultivating processing tomatoes for the plant. It is felt that one strong deterrent against small farmers selling to the plant is that they must arrange for transportation themselves. As it stands now, all growers must provide for their own transportation, and this usually means that that function is left up to "coyotes," intermediaries who set the price to small farmers. Several of the medium-sized farmers who now sell tomatoes to Mejores Alimentos were described as "coyotes." Not only does this usually mean that the price is drastically reduced to the farmers, but it also cuts off an important technical assistance link to the farmer.

The financial analysis should probe the feasibility of utilizing one or more additional field men to stimulate small farmer production among the fourteen or so asentamientos under irrigation in the Valley. Even

if it proves feasible to hire field men, it may be a step which Mejores Alimentos' owners will be reluctant to take on their own. Therefore, it is suggested that USAID/Honduras budget money to subsidize the hiring of two well-trained field men. These professionals should be well-versed in tomato cultivation and small farmer developments. Included in the cost should be two four-wheel drive vehicles and mileage allowances for one year. The field men would operate under the authority of Mejores Alimentos' management, but their assignment to the company will be predicated upon the signing of an agreement which says that these field men will work with small farmers (most likely those with less than five manzanas under cultivation).

If these developments proceed forward smoothly, USAID/Honduras should consider in subsequent years the underwriting of a tomato plant pathologist to resolve farm production problems such as the coyalito weed on the company and other growers' land. This is not immediately recommendable for the reason that there is no strong small farmer element in the company's operations at present.

The recommended budget for these technical assistance activities is as follows:

	(US \$000)
	<u>First Year</u>
Financial/market analysis	\$ 20
Field men (2)	30
Transportation	<u>24</u>
	\$ 74
	<u>Second Year</u>
Plant pathologist	\$ 75

IV. FRESH FRUIT AND VEGETABLE DEMONSTRATION PROJECT

IV. FRESH FRUIT AND VEGETABLE DEMONSTRATION PROJECT

A. The Original Concept, Budget and Activities

This project differed from the processed vegetable project in that no entity such as Mejores Alimentos, S.A., existed which could be induced to market fresh produce abroad. In fact, the thrust of the project was to identify crops which would encounter limited problems in marketing. Preliminary market studies had been carried out and okra, green beans, tomatoes, cucumbers, summer squash, asparagus and strawberries were identified as crop possibilities. Also, it was to be determined which of these crops were technically feasible to cultivate in irrigated areas in Honduras. At the time of the Project Paper formulation, agronomic studies were under-way in five areas: Comayagua, Quimistán, La Florida, La Esperanza, and Siguatepeque. The feasibility stage was to have included studies of overall financial feasibility, socioeconomic baseline data and projected impacts, water management requirements, horticultural data, and definitions of technological packages based on trial plantings and economic feasibility analyses at the farm level.

Once the crops and areas had been determined, small farmers were to have been encouraged to grow the designated crops on a demonstration basis, to pack the produce at an interim packing shed or two, and through some market arrangement to sell it in the United States. During this demonstration phase, a packing shed was to be engineered and designed for construction in the final phase of the project. During this final phase, the demonstration projects would be expanded to a commercial scale and produce would be packed out through the completed packing facility to U.S. markets.

The concept was a sound one in that the season during which such crops would be grown in Honduras, the dry season, coincided with the "off-season" for fruit and vegetable production for the U.S. Mexico has taken advantage of this climatological reality, lower labor costs and their proximity to the

U.S. to control a considerable share of winter marketing of crops such as tomatoes and strawberries. In fact, Mexico would be the major competitor for this off-season market, having exported fruits and to the U.S. since the 1930's. Undoubtedly, Mexico will hold a comparative advantage over the U.S. due to their long experience. Transportation-wise, Honduras does not suffer particularly; while it requires Mexico, produce five days to reach Eastern U.S. markets by land, it takes only six days to ship Honduran produce to the same markets by sea.

A number of irrigation projects brought about by the Ministry of Natural Resources made the cultivation of such crops more feasible than ever. The primary beneficiaries of these projects were land reform groups entirely comprised of small farmers.

With regard to marketing, two of the largest banana operations in the world, Standard Fruit Company and United Brands, operate in Honduras with marketing links to the U.S. and Europe. Both firms have been somewhat open to diversification possibilities. Indeed, United Brands had formed a local corporation, PATSA, to pack and market cantaloupes grown by peasants and medium-sized farmers in the Choluteca region. In fact, the Project Paper envisioned PATSA as the marketer for the output of this project.

The ultimate packing facility owner was to be a cooperative of producers, and several alternatives were contemplated which would transfer the ownership of the project assets to such a cooperative. One alternative was the establishment of a corporation by CONADI, the National Investment Corporation, which would manage and finance the packing facility for its first four years of operation and would gradually transfer ownership to the producers' cooperative. The other alternatives involved the same basic scheme with either the cooperative organizing itself or being organized by the Ministry of Natural Resources with financing from the Banco Nacional de Fomento.

USAID/Honduras proposed to expend on this side of the project more than four times the outlay that was proposed for the processed vegetable side, because this was a start-up operation. Besides the extensive feasibility work described above, AID proposed to provide the capital for an interim packing shed, for equipment and machinery (which could be used in the interim as well as the permanent facility), for fixed operating expenses during the first year of operation, and for a packing plant advisor to stay on the job for three years. The project also provided for the preparation of marketing guides, to help the cooperative management in the marketplace after the technical assistance period was over.

The Project Paper budget for these inputs was as follows:

(U.S. \$ 000)

Technical Assistance:

Feasibility studies	\$ 200	
Agricultural research services (24 mm)	100	
Agricultural specialists (3) (24 mm)	300	
Packing plant advisor (36 mm)	140	
Marketing guides (7)	<u>100</u>	850

Participant Training:

Agricultural internships (6) (6 mm)	<u>60</u>	60
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Commodities:

Interim packing shed	15	
Equipment and machinery	100	
Fixed operating expenses	<u>80</u>	195

TOTAL:		\$ 1,105
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In this project, even more so than in the processed vegetable demonstration project, there was to be Government of Honduras inputs. The Ministry of Economy was to act as the sponsoring agency, with the Foreign Trade Project Management Group to be heavily involved in the development activities. Other ministries were also designated to play a role: the Ministry of Natural Resources was to provide technicians who would receive further training from project personnel, the Banco Nacional de Fomento was to provide production and investment credit as needed, the land reform institute (INA) was to assist with coordinating and organizing land reform groups.

B. Project Activities Undertaken

1. Technical Assistance Provided by SIATSA

Immediately following the approval of the project by AID/Washington, the Ministry of Economy let bids for horticultural experiments to determine which crops would be the most appropriate for emphasis under the project. A contract for \$ 42,400 was made with SIATSA, an agricultural research firm which is a subsidiary of United Brands in Honduras.

Of the seven original crops chosen for study, two, strawberries and asparagus, are more cultivable in higher regions. Therefore, in the test plots SIATSA concentrated on the five lowland crops. The first stage of the assistance was to study various possible sites. The test plots were located in the Palmerola Asentamiento, the Comayagua Research Center of the Ministry of Natural Resources, and on a small farmer's plot in the Playitas area. At Palmerola, the SIATSA group ran into difficulties because there was inadequate water available. The Research Center Plots, which had been utilized for similar purposes over an extended period of time, were overrun with pests and plant diseases, making cultivation very difficult. One observer pointed out that SIATSA really did not have the technical research backup to pull the project off correctly. Besides a lack of backup, it was felt that the SIATSA coordinator was not as strong in horticulture as he should have been.

Despite this, the SIATSA work did provide some direction for the project's future. Apparently squash produced most poorly, and the final recommendations were that the project should promote the tomato and cucumber cultivation. This contract lasted through the 1976-77 growing season.

2. Technical Assistance Provided by the Standard Fruit Company

a. Feasibility/market studies. The next phase of the project was to carry out the feasibility and market studies regarding the crops and certain growing areas. Seventeen requests for bids were sent out, and the Standard Fruit Company won the job with an \$83,000 bid. Standard Fruit was very anxious to undertake the study because it coincided with their own diversification program at Coyoles, where they had been experimenting with tomatoes and cucumbers for about two years. The company felt that it would be able to obtain more information on growing conditions throughout the country. Coyoles is not an especially good vegetable area, and Standard Fruit, like Mejores Alimentos, is constrained from purchasing additional land by the Agrarian Reform Law. Therefore, their internal strategy was to determine whether other farm groups could grow produce for them to augment their diversification operation.

The feasibility study, concluded in July 1977, made the following recommendations:

- That squash and okra have very limited markets in the U.S. and Europe.
- That Honduran-grown green beans are precluded from the U.S. fresh market.
- That tomatoes and cucumbers offer the best possibilities for market entry and growth; and
- That production of tomatoes and cucumbers be initiated in Las Cañas, Palmerola, and Algodonera settlements in the Comayagua Valley and in the Sisín, Magdalena, and Jigua settlements in La Entrada (Copán).

It is comforting that Standard Fruit came up with crop recommendations which coincided precisely with their own activities at Coyoles because they most likely studied the situation well before proceeding with their own tomato and cucumber plantations. It is, at the same time, disconcerting to contemplate their possible bias toward cucumbers and tomatoes because of their previously made decision regarding those crops. Our experience in the field and our brief review of recent U.S. market prices seem to corroborate the recommendation to concentrate on tomatoes and cucumbers, however.

In the investment analysis which took into consideration buildings, farm infrastructure, farm machinery and equipment, and other installations the study came up with internal rates of return for the five settlements as follows:

Las Cañas	61 percent
Palmerola	57 percent
Algodonera	42 percent
Magdalena and Sisín	28 percent
La Jigua	18 percent

To arrive at these internal rates of return, projections were made for high yields (34.8 tons per manzana), large land areas under cultivation (107.25 manzanas in Las Cañas, for example), and a discounted cash flow based on constant revenues over the ten-year period. None of these assumptions were realistic, either in the light of the previous Mejores Alimentos experience in Las Cañas or the demonstration projects to be described later in this report. The internal rates of return were, in short, overly high given that this project is developmental in nature.

b. The demonstrations. Despite the Ministry of Economy's efforts to elicit bids from a number of sources to carry out the actual cultivation, packing, and marketing demonstrations, Standard Fruit presented the only bid. For reasons to be discussed more fully below, the

contract award was delayed until well into the planting season. Specifically, the contract in the amount of \$144,966 was signed on January 14, 1978. The Ministry of Economy pared some of the proposed costs in the Standard Fruit bid, and although all the parties were not totally satisfied with all clauses, the planting exigencies compelled the Ministry to sign and proceed with the project. The Ministry of Natural Resources insisted that their extensionists be in contact with the farmers, with the Standard Fruit agronomist acting in a non-direct advisory capacity.

Two areas, the Las Cañas and Sisín communities, were chosen for the demonstration with 5.2 manzanas under cultivation in each area. Three plantings each of tomatoes and cucumbers were achieved. Males in the communities were hired as laborers on the test plots, and females from the communities were hired as laborers in the packing operation. In both communities, interim packing sheds were constructed at a cost of \$5,000 each. Standard Fruit provided under the contract some castoff packing equipment valued at about \$2,000 per location. The members of the communities were given the non-exportable produce to sell locally.

Quantitatively, the demonstrations were more than a mild success, with high yields for both crops, the third cucumber planting yielding a very high 82.6 tons per manzana (see Table IV-1). Seven shipments were sent from La Entrada, three cucumber loads and four of tomato. Six shipments were sent from La Cañas; three of tomatoes, three of cucumbers. These were not in all cases full trailer loads.

The shipments were carried to La Ceiba in refrigerated trailers and loaded in banana-ships' holds. Standard Fruit does not use the container system, but instead uses refrigerated rail cars to carry bananas to La Ceiba for stevedoring onto refrigerated ships. No crane is presently available at La Ceiba to accommodate container loadings.

TABLE IV-1
 DEMONSTRATION PROJECT YIELDS

Las Cañas (Comayagua)

	<u>Area (mzs.)</u>	<u>Yield (tons)</u>	<u>Tons/Mz.</u>
<u>Tomato Planting</u>			
First	.88	31.4	35.7
Second	.96	23.8	24.8
Third	.82	14.8	18.0
<u>Cucumber Planting</u>			
First	.88	48.0	54.6
Second	.57	37.5	65.8
Third	.94	73.9	78.6

El Sisín (Copán)

<u>Tomato Planting</u>			
First	N.A.	N.A.	30.7
Second	N.A.	N.A.	23.7
Third	N.A.	N.A.	12.8
<u>Cucumber Planting</u>			
First	N.A.	N.A.	51.2
Second	N.A.	N.A.	72.9
Third	N.A.	N.A.	82.6

Source: Standard Fruit Company

Standard Fruit's marketing of bananas has traditionally gone directly to wholesalers or grocery chains. In the case of tomatoes, they are sent to a repacker who ripens and packs tomatoes for sale to grocery retailers. Standard Fruit reported that it still has not been able to make satisfactory arrangements with a U.S. ripener/repacker for full scale tomato marketing.

The information most crucial to the forward progress of the project came from the Standard Fruit technicians who monitored and assisted in the demonstration. Although the cucumbers arrived at the New York dock in fairly good shape, three or four shipments of tomatoes were totally rejected by the USDA. Standard Fruit quality control personnel had these deliveries laboratory tested, but it could not be determined whether the physical deterioration had been due to packing abuse or due to some bacterial problem with the fruit. The Standard Fruit technicians felt that the USDA's explanation for rejection was somewhat questionable, but, nevertheless, they recognized that there is a technical problem to be corrected. They surmised that the physical weakness may be caused by improper fertilization.

They pointed out that there is a serious tomato cultivation problem, bacterial wilt, which is concentrated in the Copán area. The result of this disease is that after the bacteria builds up to a certain point, the tomato plant keels over and dies. Standard Fruit technicians feel that perhaps liming might be an economic solution to rid the soil of the disease. The most sure solution is total soil sterilization, which could cost as much as L. 1,280 per manzana, possibly making production totally uneconomic.

For these reasons, the Standard Fruit technicians feel that one entire additional year is required to iron out these problems. The next year should be dedicated to: (1) resolving the bacterial wilt problem; (2) resolving fertility, fertilization and insect problems; and (3) defining the equipment to be used for handling. They had similar rejection problems with Coyoles produce, but reduced the USDA rejection rate from 100 percent to zero in one growing season. They allowed, however, that an

additional year beyond next year may be needed to solve shipping quality deficiencies through environmental control, fertilization, and marketing logistics.

There are also technical problems with cucumber cultivation. The major identifiable problem is angular leaf rot, a residual disease which weakens the plant to a point at which another bacterial disease can overtake the plant and completely destroy it. This particular disease follows rainy cycles, and one Standard Fruit horticulturalist noted that the weather was entering a drier cycle which should enable them to combat the disease more effectively.

An additional problem with the cucumbers has been scarring caused by winds blowing the fruits into the trellising twine. Windbreaks must be grown to alleviate this problem--something which could take three to five years.

Overall, the technical problems with cucumbers for export are viewed as far less serious by Standard Fruit technicians, and they felt that the cucumbers could be commercialized within one year. This correlates directly with the yields of both crops given in Table IV-1: tomatoes suffered dramatic yield declines while cucumber yields continued to increase over time. | ?

Yields for both crops could actually be improved if the planting is done earlier in the season, as planting late seems to retard the plant's usually vigorous growth.

C. Economic and Social Impact of the 1977-78 Fresh Vegetable Demonstration Project

1. Economic Impact on Asentamiento Households

Although this evaluation is being made only six months after the demonstration phase of the fresh vegetable project began, ample evidence

was collected of dramatically positive economic and social benefits to the small farmers involved. Evidence was also found of incipient but significant spread effects of the project, especially in the Comayagua Valley.

Though the economic impact on the Las Cañas and Sisín groups and group members is dramatic by any measure, the exact economic impact has proven elusively difficult to determine. There are extraordinarily wide discrepancies among the three sources of income data available for this evaluation: the evaluation team's interviews with group members, the AID survey using the ATAC questionnaire, and the labor cost figures contained in the contract between Standard Fruit and the Government of Honduras. Our best estimates, based on the demonstrably unreliable data available to us, are that the four-month project contributed about 30 to 35 percent of the annual household income earned by the median household in El Sisín; about 25 to 30 percent of the median annual household income in Las Cañas. Since the average household in each settlement receives less than half of its income in cash, the project wages constitute an overwhelming majority of the average family's actual cash income.

Inprecise as these percentages are, they are as precise as the nature of the available data allows. AID should soon have available to it actual labor cost figures from Standard Fruit's final report on this project. Using such figures, a much more precise idea of household income generated by this project should be possible.

In the terms of reference of this evaluation, it was expected that reasonably valid and reliable income data would be available to the evaluators from the survey conducted by the Ministry of Education survey team, trained and supervised by an AID sociologist, and using a survey questionnaire designed in 1975 by ATAC for AID/Honduras. But the income data collected by that survey are so unreliable as to be almost worthless for

the purposes of this evaluation,^{1/} The survey contains a number of different items intended to collect information about different types of cash and non-cash income from a variety of activities and a variety of sources. Most of these questions are quite specific. They require the peasant to quickly estimate in his head, for example, such complex calculations as the total value of all firewood collected from collectively owned land over the past year. The reliability of such estimates is, to say the least, highly suspect. From the interviews with peasants conducted for this evaluation, and from our previous experience conducting in-depth interviews with Central American peasants for other research projects, we believe that all such estimates of non-cash income are consistently understated, both in the original 1975 national survey and in the 1978 surveys in Sisín and Las Cañas.

A more serious problem that specifically invalidates the survey data for the purposes of this evaluation, however, arises from the specific nature of the questions asked about income. Nowhere in the interview are peasants asked to record wage income earned while working on the asentamiento, the category that would most directly collect information about the effect of the demonstration project on family incomes. Each peasant and/or each individual interviewer had to decide, therefore, whether this wage income should be included under the category of "total income received from the asentamiento in cash" or under the category of "income received from agrarian labor carried out for others." Neither category precisely applies. Do the peasants understand these wages as paid by their asentamiento, by AID, by the Ministry of Natural Resources, or by Standard Fruit? At Las Cañas, most of the peasants seem to have included this wage income in their cash income from the asentamiento. In El Sisín, a few people evidently included it under the category of income from agrarian labor

^{1/} A previous AID/Honduras report, "The Peasant Farmers of Quebrada Honda," by Prof. Ronald Waterbury has reached similar conclusions about the unreliability and invalidity of data from the ATAC survey.

performed for others, but most people interviewed either received no wages from this project (highly unlikely) or did not report these wages since no question directly asked for the information. The income data from El Sisín can therefore tell us little about either the actual household income of these families or the income they earned from this project. At first glance, the income data from Las Cañas might appear to be more accurate. But the problem here lies in the inherent vagueness of the question about "your" ("su") income. Most peasant households that report having two or more "active males" in the family nevertheless report an income figure that appears to represent only the wages of the person being interviewed. In other words, when asked about "your" income, Las Cañas respondents do not seem to be including income earned by other family members who worked on the project, either males who worked in the fields or females who worked in the packing operation.

To generate the income data reported in Table IV-2, therefore, it was necessary to adjust the reported income averages upwards in both cases, to compensate for unreported wages earned on this project. If figures representing total labor costs had been already available from Standard Fruit, it might be possible to make these adjustments with some reasonable confidence in their precision. Lacking such data, however, these adjustments must be considered as only approximate estimates. No attempt has been made in the table to make adjustments to compensate for under-estimations of non-cash income, nor to compensate for inflation or other economic changes in the interval between 1975 and 1978.

Since it was originally considered that a large part of the sociological work of this evaluation would consist of analyses of data provided by the ATAC survey, and since this ATAC survey in fact provides very little valid (and therefore analyzable) data, a brief critique of the survey seems to be in order, both to explain our judgment of the data's invalidity and to help AID evaluate such surveys in the future.

TABLE IV-2

ANNUAL^{1/} HOUSEHOLD INCOME (LEMPIRAS),
FRESH VEGETABLE PROJECT
PARTICIPANTS COMPARED TO NATIONAL SURVEY DATA

	Las Cañas (Comayagua) ^{2/}		El Sisín (Copán) ^{2/}		1975 Collective Farms, National Survey
	Mean	Median	Mean	Median	Mean
Income from collective activities, cash and kind, including wages paid by AID @ L3/day ^{3/}	433	452	333	300	397
Income from individual farming activities, cash and kind	352	55	619	692	262
Income from outside work, wages and miscellaneous	348	100	5	0	177
Total Income, all sources	1,133	850	957	862	837

1/ Interviewers and interviewees were confused about the time interval this survey was to cover. Some are reporting income earned from 6/77 to 6/78, some from 1/77 to 1/78. Some might also have reported 18-month data, 1/77 to 6/78, leading to a possible upward bias in reported income. It is our judgment that these income data from the ATAC survey is of very dubious validity and reliability, due to this and other factors discussed in the text.

2/ Medians are better measures of income data, since a few very high income families (both groups contain a few of these) can unrealistically raise the mean averages in such small groups. Nevertheless, means are also provided for comparison purposes, since the 1975 ATAC survey report provides only mean averages. Median families in each income category are not necessarily the same family, so sub-category medians do not necessarily sum up to median total income.

3/ The standard survey form made no special provision for reporting wage income paid by the asentamiento, as was done in the AID-sponsored fruit and vegetable project. Las Cañas respondents apparently reported it as cash income from the asentamiento. El Sisín respondents usually did not report it at all, or occasionally as income from "outside wages." In this table, project wages have been categorized as income from collective work. A conservative estimate of L300 per family was added to all families not reporting their fresh vegetable project income.

A prime source of invalidity is a consistent confusion between the asentamiento member himself as the unit of analysis or his entire household. Thus, in question 5, days worked by family members are not asked for except when such work days are to be counted "in place of the cooperative member." Question 6 is for the same reason unable to elicit information about cases where the asentamiento makes payments to family members other than the cooperative member respondent himself.

Another problem is that the peasant respondent is asked questions that he can only answer if he keeps a system of internal farm accounts, something that few peasants do. The section of Question 6 dealing with costs and earnings on individual plots and Question 8 dealing with material and labor cost data for individual cultivations contain many items calling for data that no peasant can be expected to have available. Question 7, concerning income and expenses from the raising of farm animals, requires farm accounting so complex that the interviewers, at least in this survey, were unable to make the mathematical manipulations of what data estimates the peasants were able to provide. (For instance, all negative figures, decreases in inventory or net losses, were recorded as positive numbers).

In Question 10, peasants are asked to estimate the market value of all their possessions, lands, and real estate improvements. This is something that no trained economist could be expected to do, let alone a peasant, in rural areas where many of these items are not true commodities, not traded with enough frequency to clearly establish comparative market values.

Questions 12 through 16 asked for the peasant's personal opinion about matters of direct concern to him, and there is no conceptual reason why the data collected on these items should not be at least as valid as the data collected on any other fixed choice opinion survey. Questions 17 through 25 ask for certain standard quality-of-life indicators--education level, housing characteristics, availability of potable water or medical care or

sanitary facilities--which should likewise be reasonably valid, in that the peasant can be expected to know both the answer and to willingly provide it.

The survey's validity problems, therefore, are all concentrated in the economic area, questions about income and expenses. It is notoriously difficult to quantify such items for households not exclusively engaged in the monetary economy. Even in highly developed, educationally advanced societies, it is almost impossible to ask people to make reliable estimates for production or consumption that takes place entirely within the household. Nevertheless, the economic questions on this survey seem to have been designed exclusively from the point of view of what data it would be desirable to know, rather than from the point of view of considering what data a peasant can be expected to reliably report based on valid information that he might actually possess. A specially trained agricultural accountant or economist might be able to interview a peasant and reconstruct, using the information the peasant is able to provide, reasonably valid estimates of the economic data solicited by this survey. Such a survey would be extremely expensive, because of the prolonged interview times necessary and because of the high cost of such well trained interviewers, but if AID decides that economic data of this type is absolutely necessary, such a costly survey technique is the only way that it can be validly discovered.

2. Collective Economic Benefits

Aside from the direct wages they earned from the project, asentamiento families also received considerable indirect benefit from income earned by the group as a whole and spent collectively. The exact amount of such income, derived from the sale to local markets of non-exportable produce, was at the time of this evaluation still not available for the case of Las Cañas. The figure must have been quite high, at least by peasant standards, because the Las Cañas directiva was able to use this income both to pay off some previous debts and to completely finance large rainy season

plantings of corn and sorghum. At El Sisín, this collective income should have amounted to L. 6,582, but approximately L. 500 of this amount was apparently stolen by the asentamiento member who drove the produce to market (this person, along with three of his wife's relatives who supported him in this controversy, have since been evicted from membership in the Sisín collective).

3. Qualitative Impacts

The most important effect the fresh vegetables demonstration project has had on both groups has been the revival of hope and resurgence of self-confidence that both groups have experienced. Las Cañas, in particular, had a record of unmitigated failure and fracaso extending from the group's formation in 1970 to the processed vegetable demonstration project in 1977. In the light of this experience, they view the tomato and cucumber project as a complete and total success. El Sisín had only been in existence one year prior to this project, but that year was one of continual weather-induced calamities, both in their individual plots of traditional crops and in their collective rice and watermelon endeavors, neither of which yielded any product whatsoever. They, too, view the project as a near total success, marred only by internal difficulties, which they felt they had resolved by the time of the evaluation.

The magnitude of this transition from demoralization to renewed hope cannot be over-emphasized. At the start of this project, according to Standard and MNR agronomists and according to the peasants themselves, the attitude of the group members at Las Cañas was one of complete suspicion and mistrust--mistrust of every institution involved (the MNR, Standard, AID, the Bank), mistrust of the project, mistrust even of each other. They came to work late, or not at all. What work they did do, they did reluctantly, slowly, sloppily--like the most alienated of employed workers. A few in the group, including one or two of the more respected and influential members, boycotted the project entirely in the beginning. The 40 group members who were still working collectively had agreed to participate in the project because of the promised wages, but they basically did not believe in it, did not expect much to come of it. In the early stages, the project was

leaderless, run by outside agronomists, but with nobody inside the group taking any responsibility.^{1/}

Project participants agreed that all these negative attitudes and behaviors changed dramatically after the first picking. The farmers saw the size of the harvest, and they for the first time realized the large amount of money that the collective could earn from local sales of non-exportable fruit. From that point on, agronomists report that the farmers' attitudes changed completely. Assigned tasks were accomplished both more willingly and more efficiently, as the asentamiento members allowed themselves to become more involved and committed to the project. At that point, the farmers began to feel the motivations and incentives that theoretically should stimulate small farmers to greater agricultural accomplishments than farm laborers on larger farm units.

By the end of the project, the farmers were convinced that the production of fresh tomatoes and cucumbers for export could be the route to the dramatic improvements in their life situation that they had been seeking and expecting ever since they received their land in 1970. Their accepted ideology is that individual economic gains would come from collective work on the asentamiento. For the first time this ideology had a realistic foundation in actual production. By the end of the project also, the belief that their actions could make a difference had been re-awakened, after a long period of dormancy since the original insurgent organization which brought the land to the group in the first place.

The attitude shift among farmers at El Sisín was not as dramatic. They were not as demoralized in the beginning, because their land acquisition was more recent and perhaps also because they had never previously

^{1/} For some reason, Standard did not initially follow the recommendations of its own feasibility study regarding internal organization. It had recommended the election of team captains to be responsible for labor allocation and supervision. Tomato and cucumber team leaders were not elected until several weeks into the project at Las Cañas (At El Sisín, they never were), and these elections apparently came not from Standard's suggestion but from the insistence of the MNR agronomist, who felt frustrated since no one in the group was responsible for following through on his orders.

experienced a failing project sponsored by the same agencies. Nor did they reach the heights of excitement and enthusiasm eventually generated at Las Cañas, because the very financial success of the project greatly increased the importance of a pre-existing problem within the group: the increasing alcoholism, irresponsibility, and dishonesty of one of the most influential and sophisticated group members. This man, who had in fact been one of the original founders of the group, was eventually expelled from El Sisín shortly after the demonstration project ended.

Another difference between Las Cañas and El Sisín in the attitude each group eventually took toward the project is reflected in the differing degrees of commitment that each group feels to the project. By the end of the harvest, Las Cañas group members had fully "bought into" the project. They regarded it as "their" project; they reported the income earned from it as income paid to the members from their own asentamiento; they felt strongly that they had learned enough by now to take the project and run with it on their own. At El Sisín, on the other hand, it is still viewed as an outside project, put together by government agencies to "help" them. They are grateful, but they still view it as something other people did for them rather than something they did for themselves. This difference in perception is probably due to differences in the internal organization of the two projects. In Las Cañas, the project had recognized internal leadership, elected by the group members and ratified by the agronomists. Preeminent among these leaders was a young man who has just begun to emerge as a leader and important human resource for the group. His positions in the project were among his first positions of responsibility in the group. His visible leadership in the project was as important as anything in the transition from an MNR/Standard project to a Las Cañas project. The somewhat smaller, much younger group at El Sisín has not had time to develop a younger generation of leaders within it. At the time of the project, it was still dominated by two influential brothers, one the President of the group and the other the just-expelled directiva member. The President was already committed to work for co-ops and the radio school, and could not spare time to take a position of responsibility in the project. His brother--articulate, literate, and

the only licensed driver in the group--was available to take a leadership position, but his increasing alcoholism and irresponsibility made the agronomists reluctant to vest authority in him. Therefore, no team captains were elected among the men to oversee the cucumber and tomato cultivations. Supervisory responsibility remained much more directly and personally in the hands of the MNR and Standard agronomists. Only in the packing shed did an indigenous leadership begin to emerge among the younger women in the group. Special attention must be paid to this problem next year and special steps taken to insure that men and women within the group emerge to take responsibility for the future of the tomato and cucumber cultivation project at El Sisín.

The technological package that Standard Fruit brought to the two asentamientos was incomparably more sophisticated than anything the farmers had ever experienced before. Not only was the technology more sophisticated, but the cultivation was much more labor-intensive, and the labor inputs required had to be more skilled and more conscientious than had ever been the case in the past. The "technology transfer" attempted in this project is highly ambitious, to say the least--so much so that we originally doubted Standard's wisdom in introducing such high technology plantation techniques in completely unmodified form to small farmers. These doubts were allayed, however, partly because of Standard's argument that such high technology is necessary if U.S. quality standards are to be met, but more importantly because all project participants report that the technology has already been successfully transferred. The Standard agronomist interviewed stated that "these people are already more or less trained." The two MNR agronomists stressed the ease with which both groups accepted the technological package. The very inexperience of the groups made the task of training easier, these agronomists thought, because there were no pre-conceived prejudices or traditional notions that had to be overcome. The peasants themselves, especially at Las Cañas, expressed the belief that they had learned how to grow tomatoes and cucumbers. Leaders at Las Cañas felt that after one more year of practice, they would be able to go out and train other groups in the cultivations, and they eagerly looked forward to doing

this. Both the agronomists and the peasants predicted that the yields and the proportions of exportable fruit will be greatly increased next year, because "this year we knew nothing, and the next year we will start at the beginning with all the knowledge we have learned."

Of course, the peasant's supreme confidence in their new knowledge may be premature. They have not been told that whole shipments of tomatoes were rejected by the USDA in New York. But, it is possible that these quality problems may indeed have been already largely overcome. Every peasant interviewed, both the women who worked in the packing plants and the men who worked in the field, described handling errors and mistakes that they were making in the beginning but discovered how to correct by the time the harvest was complete. The women in particular were able to describe dozens of problems in equipment design and handling technique that they had discovered to be causes of bruises on the tomatoes. Since no attempts were made to export the inherently lower quality late-harvest fruits, it is difficult to judge whether or not these changes in packing technique were as effective in improving the quality of the fruit as the peasants believed. Whatever the objective result of the increasing knowledgeability of the peasants in the later stages of the harvest, the interviews do indicate the extent to which the peasants, especially the women, became committed to the collective goal of increasing the quality and exportability of the products. In our opinion, the peasants should have been told about the tomato shipment rejections, and their help should have been enlisted in the effort to discover and overcome the sources of the problem.

In addition to these immediate economic and social impacts on the two groups involved, the fresh vegetable demonstration project had other positive social impacts. These might be described as side effects, in that they may have been hoped-for or anticipated, but they were not the primary objectives that the project was designed to attain. These positive benefits impacted on three distinct groups in the project areas: young

women in asentamiento families, day laborers in the vicinity of the two projects, and the Comayagua area ANACH organization.

Since the project created the first significant wage-labor employment opportunities for women in the rural area around La Entrada and the first asentamiento-based wage-labor opportunities in Comayagua, it must obviously have had an impact on the women involved in particular and on local perceptions of the female work role in general. Discovering exactly what the women's perception of these impacts was, however, proved to be difficult. The male sociologist attempted to interview female packing plant employees under a variety of conditions, individually and in groups, with and without the presence of other female family members, with and without the presence of other male project participants. Despite these efforts, most women were unwilling or unable to express personal attitudes and opinions about the project in such a novel (to them) social situation. Although there are some important differences in the social and cultural background of the two groups (the Sisín group is completely rural, the Las Cañas group is small town urban), both groups have in common a fairly complete sexual segregation of economic and social activities. Under these conditions, only two women--one in Comayagua and one in Copan--ever felt enough at ease in an interview with a male sociologist to provide information about the attitudes and interactions among the women participants in the project. Future AID-sponsored research and evaluations of projects involving Honduran peasants should make provisions for female researchers to collect information from female project participants.

Despite this data-collection handicap, it was possible to make a few general observations about the project's impact on asentamiento women. The two male MNR agronomists, for instance, were convinced that this project could open up new roles for women in agricultural production. Every time they were observed discussing the project with groups of peasants, they repeatedly made the point that this project, because it was a vegetable project, was one that women could participate in as pickers in the fields as well as packers in the plants. Since the cultural sanctions

against women working in the vegetable fields are less rigid than they are in traditional cultivations, this vegetable project had the advantage of allowing everyone in the asentamiento to contribute to the economic advancement of the group. In actual fact, apparently only a very few women did work in the fields during the harvest. MNR and Standard agronomists, and the women themselves, confirmed that a few women did this type of work, but peasant men insisted that the women had worked only in the packing house.

The ideology that women can and should participate in agricultural as well as traditional household production is part of the official political positions of both ANACH and UNC peasant movements. Both ANACH and UNC representatives mentioned this aspect of the project as one of its important virtues. Both mentioned it as a reason why they would like to see this project spread to other asentamientos within their movements.

But what did the women themselves think? The two women who were comfortable talking to the male evaluator were obviously not "typical" women, at least in this respect. Both had been informal leaders among the two packing house team. Both were very enthusiastic about the project and about the work they had done on it. They had enjoyed the opportunity to learn new skills, they had liked working together with the other women, and they thought the work "interesting." Both preferred working as graders (on the moving belt) to working as packers (putting the already selected fruit in boxes) because the assembly line work was more skilled and more challenging. The one woman who was willing to talk about how she spent her income from the project indicated that a majority of the money went for new kitchen and cooking utensils in her home, and that the rest had been spent on personal articles of clothing for herself. (This informant was young, recently married, and still childless.) Women often brought their children to the packing sheds, generally infants accompanied by their slightly older sisters who helped look after them. They did this despite the opposition of the MNR agronomists, who thought the children would get in the way of the work or would be endangered by the machinery.

The woman in Copan strongly stressed the fact that no other wage work for women had ever been available in the area. Asked about the difficulties caused for women by the "double load" of full-time job and full-time household work, she stated that the resulting 16-18 hour work days were not a problem, because "you get used to it." The opportunity to have her own source of income was well worth the extra work, she thought.

Another side effect of the project was its impact on prevailing wage rates in the two areas. In the Comayagua area, land reform and the growth of urban employment opportunities have greatly reduced the supply of agricultural laborers. As a result, some employers had already begun to pay L. 3.00 a day instead of the legal minimum of L. 2.50. The project helped to legitimize this new wage rate as the prevailing rate in the area. Some asentamiento members commented that they would be willing to work for their own asentamiento for considerably less money, but they would no longer want to hire themselves out to a private employer for less than L. 3.00 a day. In the La Entrada district of Copán, land reform is not at all as far advanced as it is in Comayagua, nor are there any significant sources of non-agricultural employment except for the occasional construction project. Under these conditions, most employers were still paying an illegal rate of L. 2.00 a day, and the highest rate in the area was L. 2.50. The fact that the project paid L. 3.00 per day to "even" women and children as well as the men had been well publicized in the area. This caused people to show up at the asentamiento site looking for work, even though outside laborers were very seldom employed on the project, and then only relatives of asentamiento members. Because of this experience, members of the Sisín collective expressed the hope that in the future they will be able to offer employment at this rate to more landless workers in the area. They anticipate a labor shortage on the asentamiento if the planting expands much beyond its present size, and they hope to meet that shortage this way rather than through the incorporation of new members into the group.

In Comayagua, Las Cañas is one of the largest, oldest, and most influential ANACH groups in the area. Because the project was perceived as such a success and because some Cañas group members are so influential in the ANACH regional organization, ANACH has become quite excited about the project. They see it as a possible vehicle for furthering their own organizational goals and overcoming some persistent problems that the movement has experienced in the region. In general terms, ANACH's problem is that once it gets land for its groups, its usefulness to the newly landed group is potentially much lessened. Landless peasants join ANACH to get access to land, and once they have achieved that goal, it is less obvious what ANACH can continue to do for them.^{1/} In response to this organizational problem, ANACH is attempting to establish itself as a service organization to its landed groups, as a necessary complement to its pressuregroup activities in national politics. As a step in that direction, ANACH has formed regional "Central Cooperatives" throughout the country, including one in Comayagua. The Comayagua Central's only successful service activity to date, however, has been the provision of bookkeeping training to treasurers and other local asentamiento officials. The ANACH organizer and the Cañas delegates to the Central Cooperative have recently gotten the idea that recruitment of asentamientos into the fresh vegetable export project and dissemination of the necessary vegetable know-how could be an important additional service that the Central Co-op could render to its asentamientos. They view the project as such an overwhelming financial success that they are sure ANACH would benefit from having been the agent that brought its asentamientos into contact with the project.

ANACH also hopes to use the possibility of participation in this project as an inducement to groups to farm collectively. La Palmerola, for instance, is considered to be a prime candidate for participation

^{1/} See "A Report on the National Association of Honduran Peasants (ANACH)" by John K. Hatch and Aguilés Lanao Flores, Rural Development Services, for AID LA/MRSD/L, April, 1977.

in the project, especially since that asentamiento served as a fresh vegetable test plot site in 1976-77. La Palmerola group members, however, have decided at this point not to farm collectively at all, but to work only on individual plots. ANACE would like to use the potential financial gains of participation in this project as the bait to induce groups like La Palmerola to return to collective farming activity.

D. Actual and Potential Spread Effects

All groups and individual farmers interviewed in the Comayagua area had heard of the economic success of the Las Cañas demonstration project. Indeed, the rumor-spreading process has taken the economic benefits that Las Cañas received and blown them up to near-mythical proportions. Every single person interviewed, whether a member of a group or an independent farmer, expressed the desire to be included in the project in the future. As one private farmer put it, "we are completely tied up here because of the lack of a market." Incidentally, the farmer who made this statement is already a grower for Mejores Alimentos, but he does not consider their prices attractive enough to constitute a real market opportunity. This farmer sees the fresh vegetable exportation project as a possible breakthrough in the development of Comayagua agriculture.

Nor is this awareness of the Las Cañas demonstration project based completely on rumor. Most private farmers in the area who possess a pick-up truck have made it their business to drop by and observe the Las Cañas operation. Under MNR auspices, five other groups who possess irrigated land have been brought to the Cañas site and oriented to the project. The MNR has also brought 40 representatives from many groups and some private farms in the area to Las Cañas as part of a demonstration program in contour cultivation. ANACH representatives visited the site several times, and occasionally brought representatives from other asentamientos with them to observe the operation.

It is fair to say that the demonstration effect in the Comayagua Valley has already been considerable. Leading private vegetable farmers in the area, including the national secretary of the Federacion Nacional de Agricultores y Ganaderos de Honduras, stated that there were 30 to 50 experienced tomato farmers in the area who would join the project "within a week" if the project would let them in and Standard would pay a fair price for the products. These medium-size vegetable farmers could make available an average of 20 manzanas of irrigated land each, about the same size as the tomato cultivations they already produce either for the local market or for Mejores Alimentos. (The possibility of such a massive switch from processed tomatoes to fresh tomatoes for export on the part of the Valley's tomato growers is precisely the basis for the fear that Mejores Alimentos has expressed about this project.) There are also 14 irrigated asentamientos in the Valley, with additional irrigation infrastructures coming on line every year. Group interviews were conducted at six of these asentamientos for this evaluation, and all are eager to join the project.

The demonstration project has obviously been a complete success in terms of generating interest in cultivation of vegetables for export. Both MNR and ANACH have already begun to make plans for the diffusion of the necessary technological know-how. In Comayagua, at least, it appears that the project simply awaits Standard's resolution of certain technical and marketing problems and AID's creation of a satisfactory organizational form for the operation of the packing plant before the cultivation of fresh vegetables for export spreads widely throughout the Valley.

In Copán, however, the situation is much less developed. Only two other asentamientos exist in the immediate area of La Entrada. Both possess land appropriate for vegetable cultivation, according to the feasibility studies and according to our own observations, but both would have to resolve severe internal organizational problems before

they could consider participating in the project. La Magdalena, a group with about 35 manzanas and 22 members, has been since its inception physically divided between a UNC and an ANACH faction. La Jigua, a much more promising group with over 150 manzanas and more than 80 members, is now farming on an individual basis except for a token hillside corn patch. While it would be perfectly feasible for group members to grow vegetables as individuals in La Jigua or for one or both of the Magdalena factions to join the project, neither group presently has irrigation. Though the land in both sites is, according to the feasibility study, easily irrigable, such an irrigation project would seem to require collective cooperation within the groups, and such cooperation has so far not been attainable. The private farm sector in the La Entrada area of Copán is divided into two sectors: very large tobacco and cattle operations occupying the flat valley land and small peasant farmers clinging to the sides of the mountains. This part of the Valley needs an expanded land reform program before it can be considered really ready for commercial scale participation in this project.

This limited potential spread means that there are only two possibilities for the future of the fresh vegetable demonstration project in the Copán area. One possibility is that an additional interim packing shed be built further up the Valley in the Santa Rosa area where there are many more land reform groups. Another possibility is that the project continue at a scale not much beyond its present size. According to our calculations, the cucumber yields in this area are so high that it would be possible to reach a minimum commercial scale (two or three trailer loads shipped per week) with only 10 or 15 manzanas of cucumbers under cultivation. Such a small export project would only require the addition of one other farmer or group to the existing El Sisín production.

E. Evaluation of Ministry of Natural Resources' Role

MNR inputs into the fresh vegetable demonstration project have continued to be the responsibility of the Vegetable Section, the same unit that collaborated with SIATSA in the test plantings the previous year. This unit provided each asentamiento in the project with one agronomist and one agronomist's assistant. These men, along with the agronomist provided by Standard Fruit, were present at the asentamientos each day, all day. For the project's duration, they were assigned no other responsibility than supervision of the labor force on the asentamiento.

The active presence and total involvement of these agronomists in the project clearly distinguished this technical assistance from the extension service that the peasants report they are normally provided by MNR agents. Peasants at Las Cañas especially made a special effort to distinguish this MNR agronomic assistance from previous contacts they have had with the MNR, including the processed vegetable demonstration project the previous year. "This is a whole new team," they said. "Entirely different." They said that this year they were taught how to grow tomatoes, whereas the previous year the extension agents only came by to watch what they were doing.

Interviews conducted for this evaluation revealed three probable reasons why the technical assistance by the MNR on this project was perceived as so much more effective than other MNR assistance: (1) the agents involved were fully committed to the project and constantly present; (2) Standard Fruit was able to provide these agents with a much better technical back-up than other MNR agents had ever had available; and (3) these particular agents were able to establish a close, though somewhat too paternalistic, relationship with all of the "active" members of the asentamientos.

In addition to the agronomists, the MNR undertook the contractual obligation to provide farm equipment for the project. This equipment, not under the direct supervision of the Vegetable Section, was sometimes difficult to obtain at the times when it was required. On occasion, Standard agronomists had to rent equipment from private parties in the area to avoid damaging delays in necessary cultivation procedures. As soon as possible, AID should provide the packing shed cooperative with its own farm equipment to avoid dependence on the poorly maintained and red-tape-entangled MNR equipment.

The ATAC survey asked the peasants for their opinion of the assistance they received from MNR. Peasants were asked to rate the MNR on a five-point scale from "very good" to "useless or almost useless." In addition, the interviewer was requested to write down any voluntary comments that the peasant chose to make about the MNR. Unfortunately, the summary volume of the 1975 ATAC survey provides no tabulated baseline data to serve as a point of comparison, but merely states that in most regions of the country the modal response was fair ("regular") or good. In contrast, peasant participants in this project gave the Vegetable Section MNR agents a much higher rating.

TABLE IV-3

PEASANT RATINGS OF MNR ASSISTANCE

	<u>Las Canas</u>		<u>El Sisin</u>		<u>Total</u>	
1. Very good	13	43%	7	35%	20	41%
2. Good	11	37%	11	60%	22	45%
3. Good quality but insufficient	0	0%	0	0%	0	0%
4. Fair ("Regular")	6	20%	0	0%	6	12%
5. Useless or almost useless	<u>0</u>	0%	<u>1</u>	5%	<u>1</u>	<u>2%</u>
Total	30		19		49	100%

Comments reported on some of the interview schedules indicate that at least some of the Las Cañas farmers who rated the assistance as only fair were referring to the assistance they received during the processed vegetable demonstration project. Similarly, the reported comment of the Sisín farmer who rated the assistance as useless indicates that he is referring to the regular MNR extension agent who has not visited the asentamiento for some time, presumably because of the project agronomists' constant presence there.

Although the peasants are apparently quite satisfied with the assistance they received from the Vegetable Section, there are organizational factors that lead us to recommend that the constant extension work be transferred from this section to agronomists and para-agronomists trained by the packing plant. The Vegetable Section is based in Comayagua. This is excellent for the Las Cañas asentamiento who still enjoy the constant assistance of their agronomist even after the vegetable harvest. He has recently been supervising their rainy season plantings of corn and sorghum. The Vegetable Section personnel temporarily stationed in Copán, on the other hand, have returned to their Comayagua base, leaving the peasants at Sisín without technical assistance and somewhat confused about the reasons for the sudden absence. To function effectively, to maintain its efficiency and high morale, the Vegetable Section must work together as a team, operating out of a single base like the one at Comayagua. There is no reason to expect that a single Vegetable Section agronomist, permanently stationed at Copán, would be any more effective there than the regional extension agents already in the area. This is one of the reasons why we have recommended that the Vegetable Section participation in this project should in the future be concentrated in two areas: (1) farm-based test plots to determine the feasibility of extending the project into new areas or new crops; and (2) short-term, intensive extension work, much like the assistance rendered this year only on a more limited scale, to asentamientos in their first year of project participation. The proper role of the Vegetable Section is to serve as a national center for publicly

available vegetable know-how, sending agents out from this center to conduct research or help in short-term extension efforts but not dissipating its very limited resources in a wide-spread and permanent extension effort.

F. Potential Economic Impact Upon the Target Group

1. Economic Impact

Since there is no way given in the scope of this study to estimate with any accuracy total long-term economic impact accruing to the target group from raising and packing tomatoes and cucumbers, it was felt the most effective manner to approach this problem was to determine whether the two groups presently involved in the demonstration project could receive positive economic benefits. This approach assumed that all technical and marketing hurdles have been overcome, but that yields would be approximately the same as were received during the first year of the demonstration project.

The calculations, which are found in Exhibits A-1, A-2, A-3, A-4 of Appendix A, take into consideration labor requirements to cultivate a reasonable amount of land, 5.2 manzanas (about nine acres) per group. Return to labor is calculated at L. 3 per day. Export prices are based on those given in the Standard Fruit feasibility study, but have been adjusted to reflect an F.O.B. packing plant situation. Pricing will be discussed further below. It is assumed that the present interim sheds are to be utilized to pack the produce.

Local sales were included in the calculations using the average unit price received during the demonstration project. It was assumed that cucumber local sales were spread out evenly over the harvest season so that prices would not be deflated. Materials and equipment costs are based on the technology package assumed by Standard Fruit in its feasibility study.

The results are very clear-cut. If L. 5.07 were paid to the group for a 30-pound box of tomatoes and L. 4.67 for a 28-pound box of cucumbers, both crops, but especially cucumbers because of the high yield, would give positive returns to each asentamiento family.

	<u>Tomatoes</u> <u>Return per Family</u>	<u>Cucumbers</u> <u>Return per Family</u>
Comayagua	L. 436	L. 976
La Entrada	L. 262	L. 1,106

This indicates once again that cucumbers might best be the product which is commercialized while tomato growing and handling problems are resolved. Certainly cucumbers are easier to grow, and are more resistant to handling abuse than are tomatoes. Cucumbers also represent less of a threat to the Mejores Alimentos even though the essential effect may be the same: increased competition for irrigated lands.

2. Contracts and Prices

The contractual and pricing arrangements brought into play are important to maintaining and building on the momentum this project has achieved thus far. Several considerations are important: (a) that small farmers' risks be minimized to the degree possible, and (b) that prices be set at a level to stimulate production and remunerate farmers for the risks they are bearing.

Probably the most acceptable contractual arrangement in this case would be F.O.B. Packing Plant with the intermediary bearing most of the transportation and all of the selling risks. Most often, the contracts are fixed price in nature, specifying quality tolerances, varieties, delivery times, land area to be cultivated, etc. This is relatively standard practice within the industry.

The precautionary message we wish to transmit here is this: the price determination mechanism is a key element to successful growth of this project. Given that this will be a start-up proposition which almost assuredly must depend heavily upon the skills and contacts of an international food marketing organization, it is also very likely to be a monopsonistic situation--especially in the beginning stages.

Two methods of price determination will likely come under discussion. One method is that of a cost plus contract. Farm production and packing costs are estimated based on historical data and a percentage is added to compensate the grower for his risk. Standard Fruit Company utilizes this method successfully with cooperative banana producers with whom it works. The farmer's return is 15 percent above production costs. If this pricing arrangement were followed, given the projections in Exhibits A-1 and A-3, the price for tomatoes would be L. 3.84 per box, the price for cucumbers would be L. 3.24. The question arises: is this a fair price and, when small farmers are involved, who determines the costs of production? With labor-intensive crops such as tomatoes and cucumbers, what value is attributed to a unit of labor? Standard Fruit is able to pay on this basis because it is a monopsonist--who else would buy the bananas?

The other pricing method would utilize an external factor to determine the prices to be paid to the packing plant. Since tomatoes and cucumbers are harvested during a season when there is a supply shortage in the U.S., the retail prices for these products during the months of December through April are very high. Exhibits B-1, B-2, and B-3 (found in Appendix B), which give the shipping point and wholesale prices for cucumbers and tomatoes in 1977, amply demonstrate this point. If the proper farm/packing to retail spread can be determined, small farmers should receive a price which will remunerate them well for their risks and efforts. We feel that the general upward price trends for these products over the past five years, the season in which these products

would be marketed, and the lower Honduran cost of certain production inputs are all factors which tend to create a situation where the pricing mechanism can be set up on this basis.

We have superficially investigated in the short time allowed the question of the "proper" farm/packing to retail spread. The final retail price is composed of the farm value and the packing, wholesaling and retailing value added. Taking these two crops into consideration, and determining an "average" harvest season price based on 1977 wholesale prices, the following table illustrates what the farm, packing, wholesale and retail prices would be if all operations were in the U.S.

	<u>Farm Price</u>	<u>Packing Price</u>	<u>Wholesale Price</u>	<u>Retail Price</u>
Composition Factor	14.7% ^{1/}	20.2%	20.9%	44.2%
Cumulative Percent	14.7	34.9%	55.8%	100.0%
Cucumbers (28 pounds)	US\$1.89	4.49	7.19	12.88
Tomatoes (30 pounds)	2.43	5.77	9.24	16.56

The farm/packing to retail spread must be adjusted slightly to reflect the Honduran export situation. First, it is envisioned that the farmers will eventually be owners of the packing operation which should be a fairly low overhead operation. Second, transportation expenses will be greater because of distance from the marketplace and some small charge is made for each unit for stevedoring, import duties, inspection fees, etc. We estimate the farm/packing to retail spread in the Honduran export project should be as follows:

^{1/} Composition factor based on data found in Cost Components of Farm-Retail Price Spreads for Selected Foods, National Economic Analysis and Community Economics Division, USDA, July 1976.

	<u>Farm/Packing Price</u>	<u>Wholesale Price</u>	<u>Retail Price</u>
Composition factor	27.1%	30.0%	42.9%
Cumulative Percent	27.1%	57.1%	100.0%
Cucumbers (28 pounds)	US\$3.49	7.19	12.88
Tomatoes (30 pounds)	4.49	9.24	16.56

The prices paid under this arrangement would far exceed the prices paid under the cost plus 15 percent arrangement. When marketing arrangements are formalized, it may be necessary for USAID/Honduras to exert enough pressure to make sure that these groups receive an adequate return for their risks and efforts. In time, volume and negotiating experience as a producers' association will help keep prices in line.

G. Commitment by the Ministry of Economy

As noted above, the second contract awarded to the Standard Fruit Company was delayed until well into the planting season. The delay was caused by indecision on the part of the Ministry as to whether they should be the sponsors for the project or not.

In the Project Paper it was envisioned that the Project Management Group of the Directorate General of Foreign Trade in the Ministry would play not only a key role in the implementation, but would also achieve the capability of duplicating the demonstration with other crops, groups and areas. As the project unfolded during the first year, it soon became obvious to the Ministry that the time phasing and skill requirements had been misjudged. During the first year of the project, 85 percent of the PMG's effort went to encouraging farm production, with few possibilities of their becoming involved in non-traditional agro-industrial exports.

The Minister of Economy felt that the PMG's project involvement was premature. A series of discussions with the Minister of Natural Resources were held to try to convince him to put his Ministry in charge of administering the project. It was agreed that MNR would take it on as a project and, at the point when there were export possibilities, the Ministry of Economy would involve itself in the project once more. Therefore, when the contract was signed with Standard Fruit, it contained a clause which stated that the MNR would be responsible for the demonstration project.

As the Ministry of Economy staff received the bulk of the graduate agribusiness scholarships described below, they feel they are better prepared than ever to reinvolve themselves at the appropriate time.

The Ministry of Economy seems to have no political problems in dealing with Standard Fruit. It was related that approximately one year ago the government came to the difficult realization that this company is the only one in the country which can market these products. However, the Ministry of the Economy feels that a different arrangement must be reached than the one currently used for banana marketing.

H. Interest by the National Investment Corporation (CONADI)

CONADI and its 63 percent ownership of Mejores Alimentos presents one of the most delicate situations to be negotiated if this project is to have success. One can say that the Mejores Alimentos' raw material needs are different from those required by the packing plant: Mejores Alimentos requires vine ripened, denser fruits, and has much more tolerant acceptance standards than would an export-oriented, table variety packing operation. However, as noted above, Mejores Alimentos is having difficulties in obtaining an adequate volume of raw materials. The Mejores Alimentos plant manager felt "somewhat disturbed that U.S. Government funds were subsidizing the diversification of Standard

Fruit," in an area which would compete directly with his company. The company is correctly observing that this project could create increased competition for irrigated lands.

CONADI has similar concerns. Its function as the National Investment Corporation is to hold Mejores Alimentos stock for four to eight years, to provide managerial guidance, and to divest the shares once the company is solidly profitable. The most likely purchaser of these shares would be Grupo Galaxia, the founders of Mejores Alimentos, and the minority shareholders who hold a preferential option to buy the shares when CONADI is ready to divest. Mejores Alimentos turned its first profit in 1977, approximately one-half million Lempiras. CONADI shares in Mejores Alimentos conceivably could represent a large portion of their portfolio which they may want to divest in the near future, as it was also learned that CONADI may be presently "loaned up." At any rate, it can be assumed that CONADI shares Mejores Alimentos' concern that competition for irrigated growing lands in the Comayagua Valley created by a fresh vegetable packing operation could be damaging, no matter when they desire to divest the shares.

CONADI is somewhat interested in a fresh packing operation. In fact, they would like to participate in the investment, and, as they pointed out, the packing facility could be located adjacent to the Mejores Alimentos plant. This is absolutely undesirable because of the reputation of Mejores Alimentos among small farmers in the Valley, and because it would maintain a monopsonistic relation between Mejores Alimentos and the tomato growers.

What at first appeared to be legal barriers to CONADI's lending to a cooperative packing plant seem not to be barriers at all. First, it was commonly believed that CONADI can only lend to sociedades anónimas. However, their lawyers have rendered the opinion that cooperatives could be borrowers under the law. Second, CONADI is limited by law to lending

to operations with a capital outlay in excess of L. 750,000. The packing plant facility might not require that kind of outlay, but CONADI stated that if AID/Honduras were to make available the capital for relending, the capital requirements would not have to be observed.

The interest rate for re-lent capital is an important consideration. For example, CONADI annually lends one million Lempiras in working capital at 12.5 percent interest to Granos Industrializados, S.A. (GRAINSA), a firm in which it holds 51 percent of the shares. This apparently is money borrowed at international commercial rates. If AID/Honduras were to lend money to CONADI for relending to the packing operation at a much lower or concessional rate, it would make the project considerably more feasible.

One other interesting linkage between the fresh and processed demonstration projects has been Mejores Alimentos' desire to buy rejects from the Standard Fruit Coyoles operation. Presently, 40,000 boxes, or 1.2 million pounds, of reject produce could be available for processing. At present, these tomatoes are given to employees or thrown away. Mejores Alimentos offered to buy these rejects for L. 120 per metric ton F.O.B. Comayagua. Apparently, they contemplated setting up their own ripener. They also offered to buy pineapple rejects which are available from another Standard Fruit operation. Standard countered by offering to sell at that price F.O.B. La Ceiba. No transaction ever took place; however, the General Manager of Standard Fruit said that an agreement could be worked out for the mutual benefit of both parties.

In the final analysis, it appeared that, if the project was perceived as underwriting Standard Fruit's diversification to the detriment of Mejores Alimentos, there would be resistance. On the other hand, the possibility of CONADI and Standard Fruit becoming co-venturers was greeted with enthusiasm. It is common in the industry that a processing plant be set up in the vicinity of a packing operation to take advantage

of the flow of rejected produce. The packing facility could certainly plan to sell to Mejores Alimentos, an arrangement which would eliminate to some degree the competition for irrigated tomato lands. Miguel Facusé, Chairman of Grupo Galaxia, said he felt that both plants could co-exist. The key was to keep the communications channels open so that both plants could maximize their volumes.

I. Experience of the PATSA Operation in Choluteca

PATSA, United Brands' diversification division in Honduras, has completed its third year of a five-year contract to manage and operate a cantaloupe packing plant located in Choluteca. The idea of exporting melons to the U.S. market from the Choluteca region resulted in a small melon export operation being started there over 12 years ago. There were mostly failures in the early years of this operation, and not all of the problems have been worked out yet, even with the involvement of the United States.

The PATSA contract placed a manager in the Choluteca packing plant year round. United Brands provided the appropriate equipment which they depreciate at an annual rate of 20 percent over the five years. INA built the plant, which is large and adequate for the present volume of melons available for packing. PATSA applies the Chiquita sticker for marketing through United's market channels in the U.S.

The packing plant has two agronomists who work year round. Their work is very intensive over an eight month period when planting, cultivating and harvesting take place. During the harvest season the plant operates seven days a week, and is open until 9:00 p.m. every day. Farmers interviewed stated that they were pleased with the plant agronomists as compared to public sector extensionists. One said that these agronomists could travel to every melon producer's farm in one day, relating important information and making sure that inputs are available at the right moment.

The PATSA Plant Manager stated that poorly founded public sector technical assistance had caused his operation a lot of problems. Therefore, he reached an agreement with the MNR, INA, and the BNF whereby an equipo tecnico was formed comprised of extensionists from these agencies along with his own agronomists. No advice could be given to farmers without his agronomists being in agreement.

The PATSA melon operation is viewed as more than a minor success in the Ministries of Economy and Natural Resources. Nevertheless, the plant faces problems. Although the management contract has been in effect for three years, no model has been conceived which would transfer ownership of the plant to small farmers as originally envisioned by INA. On the day of the visit to Choluteca, the farmers had assembled to organize a producers association in order to negotiate better prices with PATSA, but no other organizational inroads had been made. Likewise, no local managerial talent has been identified and trained to take over the plant once the able PATSA manager is withdrawn. INA was already sensing that the farmers would not be ready to pick up the reins within two years, and had suggested to PATSA that the contract be extended one year more.

Volume was still fairly low--PATSA set a target of 180,000 boxes of cantaloupes for the 1977-78 growing season and 66,000 boxes were actually packed out. The impression was given that United Brands is losing money on the operation, but there is no easy way to bow out.

J. Recommendations Regarding the Project

1. Replication of This Past Year's Activities

Since there continue to be technical and growing problems which require resolution before this project can move forward, we feel that the most prudent recommendation would be to repeat this year's

demonstration project again in the same two sites. The growing area should be restricted to five manzanas in each site.

It is our recommendation that Standard Fruit be awarded the contract to carry out this demonstration again. Only minor revisions to the Ministry of Economy-Standard Fruit contract need be made. The contract should be acted upon swiftly to avoid the delay which may have lowered yields last year.

The purpose of repeating the demonstrations would be to resolve growing problems; and to upgrade the equipment and handling procedures at the interim plants to a point where handling abuse is eliminated as a possible cause of rejected shipments. We are especially concerned about more attention not being paid to hydrocooling to remove field heat from the produce as soon as it arrives at the packing shed, and about the reported malfunctioning of several refrigerated trailers used to haul the produce to La Ceiba.

We feel that the proper incentives must be utilized to achieve the kind of results that are ultimately desired by the project. In short, a demonstration of a business should operate as much like a business as possible. If wages are paid, the group members should not get the impression that they are being paid by Standard Fruit or AID/Honduras to work on the demonstration plots. They should be assisted to take out a loan to pay for operation costs including their own labor, renting equipment, and running their irrigation systems during the crop season. Local sales and export revenues, if any, should go to repaying the loan.

The marketing exercise should be repeated through Standard Fruit, except this year Standard will buy the produce from the asentamientos. AID/Honduras should set aside a portion of the grant funds to subsidize possible losses from rejected shipments while Standard technicians continue to resolve disease and logistical problems. The amount required

for the guarantee in both sites would not exceed L. 80,000. The groups should be informed that tomato shipments were rejected last year, but that marketing experiments will be tried again this year. The farmers cannot be expected to improve harvesting and handling care without feedback from the marketplace. If the experiment fails, AID/Honduras would reimburse Standard Fruit for the loss. The payment would be based on USDA rejection slips. h ✓

The role of MNR extensionists would be to contact other groups who have land under irrigation. With these other groups they would put together demonstration plots of less than one manzana in size. These test plots would enable the collection of cost, yield, and technical cultivation data useful as this project begins to expand. The MNR extension agents should not have final say in the Las Cañas and Comayagua sites. Using the same model as PATSA in Choluteca, they form a part of an equipo tecnico where the Standard Fruit agronomists have the final word.

2. Management and Ownership of the Packing Plant(s)

a. First Year

Perhaps the most crucial element of this study was to recommend a model which will provide time for technical problems to be worked out; that will enable volumes to be achieved which will demonstrate to small farmers the feasibility of cultivating for the fresh export market and, at the same time, make feasible the construction of a commercial packing facility. It should also make possible the transfer of packing facility ownership to some type of producers' association.

We also felt that the following were important and operational parameters for the model:

- (1) Small farmers should be included in the decision making process regarding the project as early as possible.
- (2) Small farmers should be identified and trained to function as para-agronomists early in the project phasing.
- (3) Realistic incentives in the form of prices, weights, grading, and rejection rates should be brought into play as soon as possible.
- (4) Local managerial candidates should be identified and trained who can, as the project progresses, be hired to manage the facility.
- (5) The project should proceed forward with all haste possible, but at a scale and phasing which would minimize risks of failure on the part of small farmers. We appreciate the amount of research groundwork which has been laid to date in this project to assure that conditions are correct before commercialization begins.

Although several models which could bring about the desired goals were tested during the interviews, the one which seemed most palatable to all parties concerned was a management contract similar to PATSA's. One of the underlying factors for this, we feel, was the involvement of Standard Fruit during the last crop season. Although it is recognized that an international food marketing firm is crucial to the success of the business, it was also felt that in no way should Standard Fruit be allowed to own those facilities in lieu of small farmers.

Because of what is left to accomplish in this project, and its developmental nature, we envision that this management contract must have a duration of at least four years beyond the original three-year time frame of the project.

This arrangement would require that the contractor provide a Project Manager during the four-year period. This Project Manager would organize the farm activities and manage the interim packing facilities. He will hire and train a bookkeeper who would keep the books of the farm groups and the packing operations. He will assist groups to obtain working capital loans to cultivate and pack the produce. With the bookkeeper, he will devise and implement a system to record and remunerate group members for their labor.

The contractor will provide two agronomists to work directly with small farmer groups and other growers who desire their assistance. Their sole function will be to stimulate production by assuring that farmers provide themselves with inputs in a timely fashion and by providing day-to-day assistance and advice. It is most likely that one of these would be assigned to work in the Comayagua Valley and the other in La Entrada. We feel that these agronomists should concentrate on asentamiento groups to solidly demonstrate the fresh vegetable export viability before working with independents. In this way, the independents can be drawn to the demonstration project. If independents, especially medium-sized ones, receive too much of the initial assistance, it is likely that farm groups, comprised of the poorest farmers, could be left out of the process.

Based upon the resolution of technical and marketing problems, the Project Manager will plan, in conjunction with the farmers, for the amount of cultivation which is reasonable given available labor, irrigated land, and other resources. If technical problems are not resolved, the farm operational level would not be expanded, and decisions would be

made as to whether some areas must be dropped and other farm groups are encouraged to grow, based on test plots carried out by MNR personnel in other locations.

The interim packing sheds would be operated on a low overhead, cost plus basis. Nevertheless, some sort of fee must be assessed each unit of produce packed out, so that farmers understand the concept of overhead and amortization of financial obligations.

b. Second Year

For the sake of elaborating the project time phasing, it is assumed that by the second year all technical problems are resolved with regard to at least one crop. At this point, the Project Manager begins to organize an open membership producers' cooperative for any interested grower.

We are in agreement with USAID/Honduras that a producers' cooperative be the recommended organization form because we feel that it is the form which best fits the Honduras rural development context. Moreover, it is the best form to unite the diverse elements, the asentamientos, the small and medium independent farmers, and the large growers, into a production-oriented organization.

Two especially capable small farmers will be identified, hired and trained as para-agronomists. The temporary plant agronomists would work with these extensionists as a part of a grupo tecnico.

Given the problems of obtaining farm equipment during this last year's demonstration, we recommend that the Project Manager purchase a tractor and implements to carry out land preparation activities within the various growing areas. The agronomists would coordinate the use of the equipment. The farmers would be charged for the equipment (see land preparation costs in Exhibits A-2 and A-4).

c. Third Year

During the third year, the Project Manager will identify and hire his Manager counterpart. Preferably, this counterpart will be a small farmer; conceivably, he could be one of the para-agronomists. He should be someone with innate leadership ability, respected by other farmers, and capable of learning to manage the operation.

At this point, a market system familiarization tour should be organized in which project management, their counterparts, and some key farmers will travel to harvesting, shipping, wholesaling, and retail points to acquaint themselves firsthand with the U.S. agribusiness system through which they are marketing their product. It is hoped that at this point in the project's development, such an experience will confront these operatives with realities regarding quality, handling, harvesting, and so on which will be translated into action back at the project sites.

d. Fourth Year

It is difficult to estimate at what point a "full-scale" packing facility should be erected or where its location should be. It was estimated by Standard Fruit's Diversification Project Director that, based on that Company's experience, a "full-scale" plant should be erected when 35 manzanas are under cultivation. Given the willingness to grow vegetables as expressed by the farmers interviewed, this cultivation level will not be difficult to achieve. The plant at Coyoles is capable of handling three tons per hour operating 10 to 12 hour days. Such a plant can be constructed for \$200,000 to \$250,000.

It is recommended that the packing plant should be erected in a "neutral" location, i.e., it should not be constructed so that it is construed to be the property of one asentamiento, farm group or company.

It should be a location acceptable to the producers' cooperative. Raw material supply and infrastructural availability will be, of course, the most important locational determinants. It should be noted that the interim packing shed costs are very low, and several of these can be set up easily to accommodate remote, new cultivation areas as the need arises.

It is recommended that USAID/Honduras set aside \$300,000 of the grant funds for the construction of one full-scale plant and several smaller interim plants. Of this amount, \$250,000 would be adequate to build the full-scale plant. The funds should be channeled through an appropriate intermediate credit institution for relending to the producers' cooperative at low interest. Most likely that institution would be CONADI, but that decision does not have to be made until the project evolves more fully.

The cooperative would amortize the loan by assessing farmers for each unit of produce packed out. A certain number of units, say 50 boxes of produce, delivered by the cooperative member would result in his receiving a share with a value commensurate with the capitalization which resulted. The cooperative would pay dividends, if any, to farm groups and individual shareholders.

V. INSTITUTION BUILDING

V. INSTITUTION BUILDING

A. The Original Concept and Activities

Because of AID's concern that this project have spread effects beyond the two demonstration vegetable export projects, the original Project Proposal contained a large institutional building component. Unfortunately, the institutions that were to be built were in 1976 either non-existent or only barely nascent sections of the General Directorate of Foreign Trade (GDFT) of the Ministry of Economy. The specific intent of the project was to strengthen the Project Management Group (PMG) within the GDFT, enabling it to put together the institutional framework to coordinate all other public and private sector participants in the project. AID hoped that in the future the PMG would have the capability, as a result of the experience and know-how acquired during this project, to develop and coordinate future export promotion projects on its own.

Although the Project Proposal provided for several different types of educational experiences for Government of Honduras personnel, it was clearly expected that a primary institution building activity would be the oversight of the project itself. Project oversight by the PMG was to be based on an inter-agency agreement, specifying the responsibilities of all public and private sector project participants. Based on the inter-agency agreement, a Joint Evaluation Committee was to be established, with representatives drawn from all the participating divisions. The Joint Evaluation Committee was to meet at least quarterly "to resolve implementation problems as they surface." This was to be the means by which the project was overseen, and this was to be a primary means by which the PMG's project development and management capability was to be acquired.

At the time of the Project Proposal in 1976, the PMG was made up of four economists and a secretary. The unit was a new subcomponent of the General Directorate of Foreign Trade (GDFT), which was itself a relatively new creation within the Ministry of Economy. At the time, no one within the PMG had any particular expertise or training in agriculture or

agribusiness, but the project itself contains several proposals to develop the PMG's capability in the area of agricultural sector export promotions.

First of all, the Government of Honduras was to add an agricultural economist and an agronomist to the PMG staff as soon as the project got underway. Additionally, MBA degrees with specialties in agribusiness marketing were to be provided to four key GOH personnel, at least two of these from the PMG. Further, PMG personnel were to be provided with marketing internships within multinational agribusiness corporations to gain first-hand experience with agribusiness activities for the United States market. Finally, the project was to finance a series of agribusiness seminars to provide PMG and other project participants with the basics of the systems approach to agribusiness management in Central America.

To sum up the original concept, then, the PMG was to be the focal point of the project's institutional building activities and the purpose of these activities was to strengthen the project's spread effects by developing a Honduran Governmental institution with a capability of developing and managing such projects in the future. PMG capability was to be developed by the addition of new and appropriately trained personnel, by the advanced training of existing personnel, and importantly by the direct hands-on experience of managing this project itself.

Yet, as soon as the project passed from the proposal to the implementation stage, it became clear that the PMG was an extraordinarily weak foundation upon which to build such great hopes. Despite its name, the Project Management Group was a barely established, poorly defined unit with no previous experience in managing any projects. Its position within the Ministry of Economy was not secure, and the Ministry of Economy was itself in an insecure position at the time, racked by scandals and about to go through a major transition. Since the reports of scandals were based on allegations of illicit relationships between Ministry officials and a multinational agribusiness firm operating in Honduras, it is not surprising that when

a new Minister of the Economy was appointed with a new broom to clean up the agency, one of the remnants he wanted to sweep out was the Agro-Industrial Export Promotion Project, with its proposed tightened links between the Ministry and the multinational agribusinesses.

As a result, most of the proposed institution building activities never took place. No inter-agency agreement was ever signed, no Joint Evaluation Committee was ever established, and any project management experience was confined to the AID project advisor and his succession of individual GOH counterparts. A few limited training activities have nevertheless been carried out. Three upper level Ministry of Economy officials were sent to the United States for MBA training in agribusiness, and the project sponsored an agribusiness management seminar, presented in November 1977 by INCAE to about 40 participants from AID, GOH, and public and private Honduran agribusiness sectors. It is too early to tell whether the three MBAs will have much effect in strengthening the capacity of the Ministry of Economy, since only one of them has by now returned to Honduras. By all counts, however, the INCAE seminar was highly successful because it brought together the parties interested in Honduran agribusiness development for the purposes of discussing progress and problems. Two follow-up seminars are planned for the Fall of 1978 and 1979.

B. The Ministry of Natural Resources

At the end of 1977, an agreement was reached among AID, the Ministry of Economy and the Ministry of Natural Resources whereby the Ministry of Economy would retain actual contractual authority over the project, but operating responsibility would pass over to the Ministry of Natural Resources. Day-to-day GOH involvement in the project passed over to another relatively new unit, the Vegetable Section of the MNR, a group which had been involved in the project since the beginning, overseeing the three vegetable test plots which the project sponsored in the Comayagua

Valley in the 1976-77 growing season. Although upper level MNR officials see their role in the project as essentially unchanged from what it was in the beginning, that is, basically a technical assistance support function, the Vegetable Section personnel have felt themselves fully responsible for GOH oversight of at least the fresh produce export aspect of the project, which has in 1978 been the only still functioning aspect of the project.

The Vegetable Section consists of Ing. Denis Ramirez, its head, two recent Zamorano graduates who serve as agronomists, two even more recent Zamorano graduates who serve as agronomists' assistants, and two secretaries. This evaluation team has interviewed all members of the unit, and it is obvious that the Vegetable Section is a highly motivated, high-morale unit. Most people interviewed who had come in contact with the unit characterized it as qualitatively more effective and efficient than other MNR extension agents with whom they had previous contact.^{1/}

The MNR vegetables unit appears to be capable of absorbing and effectively utilizing project-sponsored training to increase its expertise and effectiveness in assisting the production of fruits and vegetables to expand Honduras' non-traditional agricultural exports. Indeed, the project management already plans to provide the unit's agronomists with advanced undergraduate agricultural training at United States universities. This seems appropriate, since at this point the actual horticultural know-how in the team is quite limited--only the director has had specialized training in this area. In addition to these educational activities, however, the vegetable unit should be one of the targets of the functional institution building activities advocated in the next section.

^{1/} See evaluation of fresh fruit and vegetable demonstration project for a more detailed evaluation of the work of this unit.

C. Functional Institution Building

The project designers' original concern that an institution building component would be necessary to assure the project's spread effects--such a concern was and still is justified. But the project's original emphasis on developing export promotion project start-up capacity within the Ministry of Economy was quite far removed from the actual nitty gritty problems of production, processing, and marketing of non-traditional agricultural exports. Because of the Ministry of Economy's withdrawal from active participation in the project, AID now has the opportunity to redirect its institution building emphasis into channels that will have a more direct impact on developing agricultural export capacity. The most critically important institution to be developed by this project must be the packing shed cooperative. If this institution is successfully established, it will stand as a unique model in Honduras, evolving into a cooperative federation based on the production co-ops of the agrarian reform sector but including independent farmers as members and working closely with private sector marketing agents. If this organization is successful, its spread effect should not be underestimated. Many in Honduras are now searching out models for agricultural enterprise that successfully integrate social and economic objectives. INA, the cooperative sector, the two peasant movements, and public and private agribusiness organizations--all feel the need for a new model that will provide for rapid economic expansion while maximally including and benefitting the small peasant land reform recipients. At present, only three such models exist in all Honduras: the banana co-ops, the PATSA melon project, and the CONADI sesame seed project. Each of these models has its drawbacks. The proposed packing plant organization, drawing as it does on the previous experience of these other models, should be a real improvement. If it is, it will be imitated.

The feasibility study to improve the raw material supply to the existing Honduran tomato processor should also be seen as a potentially important institution building activity. The fresh vegetable demonstration project

test plots have already demonstrated the feasibility of fairly widespread production of green beans and asparagus in Honduras. Mejores Alimentos has already experimented with the growing and processing of these vegetables. There is a large market for both of these vegetables as canned goods in the United States, and there is an even larger market for these products frozen. ~~Strawberry production~~ also has great potential in certain Honduran valleys, and these too could be marketed fresh or frozen to the United States. In short, there is much room for further expansion of Honduran vegetable production, in products other than tomatoes and cucumbers. One of the primary obstacles to such expansion is the lack of a Honduran example of successful small grower-processor cooperation. Until such a cooperative relationship is established, either by Mejores Alimentos or by some future competitor, the great potential that Honduras has for vegetable export market production cannot be realized. From a social structural point of view, the absence of such grower-processor cooperation is a key rupture in the agribusiness system, and anything this project can still do to foster a more cooperative relationship will be a key institution building activity.

Before Honduras can expand beyond cucumbers and tomatoes to other vegetable exports, however, a great deal of applied research and agricultural testing remains to be done. The project has already made a crucial contribution here, and it can make even more contributions in the future, if it continues to develop the capacity of the MNR Vegetable Section. But AID must re-examine the particular capacities it wants to emphasize in the Vegetable Section's development. In the past year, the Vegetable Section agronomists were utilized primarily as low level production managers and supervisors in the fields and the packing plants. The technical assistance came from Standard, and the MNR agronomists were used basically as production foremen, passing on to the peasants commands based on suggestions that originated from Standard technicians. This arrangement, to say the least, seems somewhat backwards. These agronomists have no particular background or expertise in production supervision, nor is it an activity that anyone has advocated as appropriate or desirable for such extension agents. In

the future, such supervision should be carried out by the management contractor or by the counterparts that the contractor will train. Since the packing co-op will also have its own para-agronomist to carry out day-to-day extension work, the more highly trained Vegetable Section agronomists should concentrate on increasing their research and investigation activities and developing their capacity in that area. The potential spread effects of the project can be greatly enhanced if the Vegetable Section team concentrates on testing the possibilities of vegetable export expansion.

What newly irrigated asentamientos in what new valleys can also grow green beans? What varieties? Where can strawberries and asparagus be feasibly grown? Such questions must be answered before export-oriented agro-industry can expand in Honduras, and the MNR Vegetable Section is the appropriate organization to begin to provide the answers either as part of this project or of some other. AID should help it to carry out an expanding number of field trials of new products, new varieties, in new areas. Such field trials will be important, not only for the knowledge they produce, but also for the training and education they provide to MNR Vegetable Section personnel, training that will be at least as effective as the more theoretical kind they might receive at American universities.

VI. RECOMMENDED ACTIVITIES, SCHEDULING AND BUDGET

VI. RECOMMENDED ACTIVITIES, SCHEDULING AND BUDGET

In this section, we have summarized the recommended future activities for each of the three major components of the agro-industrial export project, that is, the processed vegetable demonstration, the fresh vegetable demonstration project and the institution building activities. The summarized activities are given by year, the last year of the originally envisioned time frame followed by the four years we have recommended as an extension to the project. Expenditures have been estimated based on costs incurred in the project to date.

As a starting point, in Table VI-1 it is shown that after nearly two years of the three-year grant period, only \$390,700 (22.9 percent) of the total grant funds of \$1.7 million has been spent. We recommend that all of this grant be spent over the next five years with no deobligation of funds. Our recommended program follows below.

PROJECT ACTIVITIES AND EXPENDITURES

(US\$000)

A. YEAR THREE - ORIGINAL GRANT PERIOD

Processed Vegetable Demonstration

Financial/Market Analysis	\$20	
Field men (2)	30	
Transportation for field men	<u>24</u>	
		\$ 74

Fresh Vegetable Demonstration

Modify Standard Fruit contract and repeat demonstration	\$85	
Marketing guarantee	40	
Upgrading packing equipment	15	
MNR test plots	<u>5</u>	
		\$145

Institution Building

INCAE Seminar	\$20	
Vegetable Section Training (Courses or Internships)	<u>15</u>	<u>\$ 35</u>

YEAR THREE TOTAL \$254

B. YEAR ONE - EXTENDED GRANT PERIOD

Processed Vegetable Demonstration

Field Men (2)	\$32	
Transportation for Field Men	8	
Plant Pathologist	<u>75</u>	\$115

Fresh Vegetable Demonstration

Management Contract	\$70	
Hire Para-agronomists	4	
Buy Tractor and Implements	25	
Tractor Driver	1	
MNR Test Plots	<u>5</u>	\$105

Institution Building

INCAE Seminar	\$20	
Vegetable Section Training	<u>10</u>	<u>\$ 30</u>

EXTENSION YEAR ONE TOTAL \$250

C. YEAR TWO - EXTENDED GRANT PERIOD

Processed Vegetable Demonstration

Plant Pathologist		\$ 75
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Fresh Vegetable Demonstration

Management Contract	\$75	
Para-agronomists	5	
Tractor Driver	<u>1</u>	\$ 81

Institution Building

INCAE Seminar \$ 20

EXTENSION YEAR TWO TOTAL \$176

D. YEAR THREE - EXTENSION GRANT PERIOD

Processed Vegetable Demonstration

-- \$ 0

Fresh Vegetable Demonstration

Management Contract \$80
Hire Manager Counterpart 3.5
Para-agronomists 6
Market Familiarization Trip 20 \$109.5

Institution Building

INCAE Seminar \$ 22

EXTENSION YEAR THREE TOTAL \$131.5

E. YEAR FOUR - EXTENDED GRANT PERIOD

Processed Vegetable Demonstration

--- \$ 0

Fresh Vegetable Demonstration

Management Contract \$ 85
Manager Counterpart 4
Construction of Packing Plants 300 \$389

Institution Building

INCAE Seminar \$ 24

EXTENSION YEAR FOUR TOTAL \$413

TOTAL GRANT EXPENDITURES \$1,224.5

TABLE VI-1

HONDURAS AGRO-INDUSTRIAL EXPORT DEVELOPMENT PROJECT
COST ESTIMATES AND ACTUAL EXPENDITURES

(US\$000)

Processed

	<u>Project Paper</u>	<u>Percent</u>	<u>Pro. Aqs.</u>	<u>Percent</u>	<u>Actual</u>	<u>Percent</u>
<u>PROPOSED VEGETABLE DEMONSTRATION PROJECT</u>						
<u>Technical Assistance:</u>						
Tomato Agricultural Specialist	150	8.8	50	7.8		
Tomato Processing/Canning Expert	15	.9	55	8.7	22	5.6
Marketing Guides	50	2.9				
<u>Participant Training:</u>						
Tomato Agricultural Internships	20	1.2				
Contingency/Inflation	25	1.5				
Total Processed Vegetable Project	260	15.3	105	16.5	22	5.6
<u>FRESH FRUIT AND VEGETABLE DEMONSTRATION PROJECT</u>						
<u>Technical Assistance:</u>						
Feasibility Studies	200	11.7	200	31.5	83.0	21.2
Agricultural Research Services	100	5.9	40	7.8	42.4	10.9
Agricultural Specialists	300	17.6	90	14.2	145.0	37.1
Packing Plant Advisor	150	8.8				
Marketing Guides	100	5.9				
<u>Participant Training:</u>						
Agricultural Internships	60	3.5				
<u>Commodities:</u>						
Interim Packing Shed	15	.9				
Equipment and Machinery	100	5.9				
Fixed Operating Expenses	80	4.7				
Contingency/Inflation	25	1.5				
Total Fresh Vegetable Project	1,130	66.5	340	53.5	270.4	69.2
<u>INSTITUTION BUILDING AND COORDINATION</u>						
<u>Technical Assistance:</u>						
Agribusiness Advisor	150	8.8	100	15.7	57.2	14.6
<u>Participant Training:</u>						
Masters Degrees	20	1.2	40	6.4	21.3	5.5
Marketing Internships	20	1.2	10	1.6		
<u>Other Costs:</u>						
In-Country Agribusiness Seminars	60	3.5	20	3.1	19.8	5.1
Project Development Fund	60	3.5	20	3.1		
	<u>310</u>	<u>18.2</u>	<u>190</u>	<u>29.9</u>	<u>98.3</u>	<u>25.2</u>
	<u>1,700</u>		<u>635</u>		<u>390.7</u>	

APPENDIX A

ECONOMIC EVALUATION OF FRESH MARKET DEMONSTRATION PROJECT

EXHIBIT A-1

**PROJECTED PROFIT AND LOSS
COMAYAGUA FARM AND PACKING OPERATION
(Expressed in Lempiras)**

	<u>Tomatoes</u> <u>5.2 Mzs.</u>	<u>Cucumbers</u> <u>5.2 Mzs.</u>
Export Sales	27,764	59,481
Local Sales	<u>8,520</u>	<u>10,000</u>
TOTAL SALES	36,289	69,481
FARM COST:		
Land Preparation	2,480	2,482
Planting	1,787	773
Farm Maintenance	1,596	1,077
Pest Control	4,303	3,976
Trellising	2,537	6,588
Irrigation	2,310	2,190
Farm Overhead	<u>1,713</u>	<u>1,713</u>
Pre-harvest Cost	16,726	18,799
Harvesting and Handling	3,577	3,142
PACKING:		
Direct Labor	488	776
Material	5,428	14,864
Non-variable	<u>348</u>	<u>348</u>
Total Packing	6,264	15,988
Local Transportation	<u>1,002</u>	<u>3,000</u>
TOTAL COSTS	<u>27,569</u>	<u>40,929</u>
Profit (Loss)	8,720	28,552
Return to Labor (See Exhibit A-2)	<u>10,036</u>	<u>12,379</u>
	18,756	41,969
Return Per Family (43)	436	976
Yield - Tons	136.8	346.8
Reject - 40 percent	54.7	138.7
Exportable	82.1	208.1
Pounds	164200	416208
Boxes (tomatoes= 30; cucumber= 28)	5473	14864
Estimated Price Per Box - Export	5.07	4.67
Estimated Price Per Box/Bag - Local (Cucumber local sales in 150 Lb. bags)	3.40	6.50

EXHIBIT A-2

ESTIMATED DISAGGREGATION OF FARM AND PACKING
COSTS IN COMAYAGUA

(Expressed in Lempiras)

	Tomatoes			Cucumbers		
	Comayagua Group Labor	Other Labor	Materials	Comayagua Group Labor	Other Labor	Materials
<u>LAND PREPARATION</u>						
Plowing and Subsoiling	0	45	417	0	45	417
Disc Weeding	0	15	125	0	15	125
Soil Fumigation	0	60	1,661	0	60	1,661
Disc and Drag		15	125	0	15	125
Bedmaking	102			102		
<u>PLANTING</u>						
Labor and Equipment	90		5	90		5
Seed			813			92
Fertilizer			879			586
<u>FARM MAINTENANCE</u>						
Cultivation	487			487		
Thinning	84			84		
Replanting	293			44		
Side Dress	219		366	184		277
<u>PEST CONTROL</u>						
Labor and Equipment	900		147	800		71
Materials			3,856			3,105
<u>TRELLISING</u>						
Labor	1,648			5,529		
Materials			890			1,058
<u>IRRIGATION</u>						
Labor	985			864		
Fuel/Lubricant			1,208			1,208
Maintenance and Repair			117		117	
<u>FARM OVERHEAD</u>						
Staff and Adminis- tration	1,713			1,713		
<u>HARVESTING</u>						
Harvesting	2,475			1,358		
Hauling			1,102			
<u>PACKING</u>						
Direct Labor	692			776		
Material		543				14,864
Non-variable	348			348		
TOTAL FARM & PACKING COSTS:	10,036	135	17,139	12,379	252	24,735

EXHIBIT A-3

**PROJECTED PROFIT AND LOSS
LA ENTRADA FARM AND PACKING OPERATION**

(Expressed in Lempiras)

	<u>Tomatoes</u> 5.2 mzs.	<u>Cucumbers</u> 5.2 mzs.
Export Sales	23,592	71,751
Local Sales	<u>5,281</u>	<u>4,971</u>
Total Sales	28,873	76,722
Farm Costs:		
Land Preparation	2,482	2,482
Planting	2,453	1,663
Farm Maintenance	1,717	1,164
Pest Control	4,903	3,976
Trellising	2,538	6,589
Irrigation	2,226	2,069
Farm Overhead	<u>1,850</u>	<u>1,850</u>
Preharvest Costs	18,169	19,792
Harvesting and Hauling	1,937	6,400
Packing:		
Direct Labor	692	1,250
Material	4,649	15,630
Non-Variable	<u>410</u>	<u>410</u>
Total Packing	5,751	17,290
Local Transportation	<u>1,384</u>	<u>1,384</u>
Total Costs	27,241	44,866
Profit (Loss)	1,632	31,856
Return to Labor (See Exhibit A-4)	<u>9,646</u>	<u>15,695</u>
	11,278	47,551
Return per Family (43)	262	1,106
Yields (Tons)	116.3	358.5
Reject 40 Percent	46.5	143.4
Exportable	69.8	215.1
Pounds	139,600	430,200
Boxes	4,653	15,364
Estimated Price per Box - Export	5.07	4.67
Estimated Price per Box/Bag - Local	3.04	6.50
(Cucumber local sales in 150 lb. bags)		

ESTIMATED DISAGGREGATION OF
LA ENTRADA FARM AND PACKING COSTS

(Expressed in Lempiras)

	<u>Tomatoes</u>			<u>Cucumbers</u>		
	<u>Copan Labor</u>	<u>Other Labor</u>	<u>Matls. & Equip.</u>	<u>Copan Labor</u>	<u>Other Labor</u>	<u>Matls. & Equip.</u>
Land Preparation						
Plowing and Subsoiling	0	30	358	0	30	358
Disc Weeding	0	15	120	0	15	120
Soil Fumigation	0	60	1,661	0	60	1,661
Disc and Drag	0	15	120	0	15	120
Bed Making	102.5	0	0	102.5	0	0
Planting						
Labor & Equipment	90.2	0	5	90.2	0	5
Seed	0	0	813	0	0	22.8
Fertilizer	0	0	1,545	0	0	1,545
Farm Maintenance						
Cultivation	487	0	0	487	0	0
Thinning	84.2	0	0	84.2	0	0
Replanting	293	0	0	44	0	0
Side Dress	853	0	0	549	0	0
Pest Control						
Labor & Equipment	900	0	147	721	0	150
Materials	0	0	3,856	0	0	3,105
Trellising						
Labor	1,648	0	0	5,530	0	0
Materials	0	0	890	0	0	1,058
Irrigation						
Labor	1,051	0	0	894	0	0
Fuel/Lubricants	0	0	945	0	0	945
M & R	100	0	130	100	0	130
Farm Overhead						
Staff & Admin.	1,850	0	0	1,850	0	0
Harvesting						
Harvesting	1,085			3,584		
Hauling	0	400	452	0	816	2,000
Packing						
Direct Labor	692	0	0	1,250	0	0
Materials	0	0	4,649	0	0	15,630
Non-Variable	410	0	0	410	0	0
	<u>9,646</u>	<u>520</u>	<u>15,691</u>	<u>15,695</u>	<u>936</u>	<u>26,849</u>

APPENDIX B

SHIPPING POINT AND WHOLESALE CUCUMBER AND TOMATO PRICES - 1977

EXHIBIT B-1

CUCUMBERS

SHIPPING POINT PRICES - 1977

	DEC	JAN	FEB	MAR	APRIL
Florida	5.73				7.23
Nogales Mexico	5.46	8.43	10.97	16.26	

1 1/9 bushel units

WHOLESALE PRICES - 1977

	DEC	JAN	FEB	MAR	APRIL
<u>New York Market:</u>					
Sources:					
Florida	7.38				
Mexico	10.38	11.88	13.31	21.50	17.50
<u>Chicago Market:</u>					
Florida	3.00 fq				10.67
Texas	4.25 fq				
Mexico	9.16	12.63	13.19	18.15	11.75

fq: fair quality

Source: Agricultural Marketing Service, U.S.D.A.

EXHIBIT B-2

TOMATOES

SHIPPING POINT PRICES - 1977

	DEC	JAN	FEB	MAR	APRIL
California					
4 x 5 - 5 x 6s	7.00				
Florida					
30 Lb. 85% or more U.S. No.1					
Extra large	8.30	11.08			12.00
Large	7.48	10.75			11.91
Medium	4.35	7.83			8.73
Baja Calif., F.O.B. San Ysidro					
Two layer flat					
4 x 5 - 5	7.26				
Three layering					
6 x 6s	7.49				
Three layering					
6 x 7s	6.21				
Mexico					
F.O.B. Nogales					
6 x 6s	9.49	9.08	11.14	9.33	5.46
6 x 7s	8.40	7.97	10.21	8.45	4.24
7 x 7s	7.13	6.80	9.21	7.08	3.89
4 x 5 - 5 x 6s	7.96	6.71	8.24	6.75	5.37
Ohio (Greenhouse) 8 Lb. basket					
Red				6.08	5.10
Large				6.03	5.13

Source: Agricultural Marketing Service, U.S.D.A.

EXHIBIT B-2

TOMATOES (cont'd)

WHOLESALE PRICES - 1977

	DEC	JAN	FEB	MARCH	APRIL
<u>New York Market:</u>					
Florida (30 lb.)					
Extra large	12.25	15.94	20.00	14.50	16.00
Large	10.00	13.88	18.92	14.83	15.00
Mexico					
Two-layer flat Extra large	8.25	11.75	9.08	10.70	10.56
Ohio (8 Lb. basket)					
Medium Large	3.50			6.33	6.25
<u>Chicago Market:</u>					
Florida (30 Lb.)					
Extra large	11.45	15.50	17.75	--	14.75
Large	10.56	13.69	17.00	---	14.25
Mexico					
Two-layer flat	7.25	10.58	8.60	10.51	9.66

Source: Agricultural Marketing Service, U.S.D.A.